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# 2018 GREAT Day Program

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# GREAT DAY

# GENESEO

**APRIL 17, 2018** Geneseo Recognizing Excellence, Achievement, and Talent

# Welcome to SUNY Geneseo's Twelfth Annual GREAT Day!

Geneseo Recognizing Excellence, Achievement & Talent Day is a college-wide symposium celebrating the creative and scholarly endeavors of our students. In addition to recognizing the achievements of our students, the purpose of GREAT Day is to help foster academic excellence, encourage professional development, and build connections within the community.

http://www.geneseo.edu/great\_day



Throughout the day, when you post about GREAT Day on social media use #WeAreGREAT to be featured on GREAT Day social media!







GreatDayGeneseo

@GeneseoGREATDay geneseo.edu/great day

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# Sustainable GREAT Day

#### 💋 Look for the Leaf

Sustainability at Geneseo has selected GREAT Day presentations which include topics that promote sustainability and are designated by  $\mathcal{D}$ .

Recycle your Namebadge/Lanyard

If you would like to recycle your namebadge/lanyard you can leave it at the GREAT Day Check-In Desk in the College Union, give it to a GREAT Day Volunteer or drop it off at Erwin 202. The badge holders are also biodegradable.

# SCHEDULE

SCHEDULE	
7:30 – 8:20 AMOpening Coffee Hour HonoringMilne 1st Floor10 Year Supporters & 2018 Proceedings	
8:30 AM – 6:30 PM GREAT Battle of the Artists Show CU Kinetic Gallery	
8:30 – 9:45 AM Concurrent Presentations • Session 1 Bailey, Doty, ISC, Milne, Newton, South, Welles	
8:30 – 11:10 AM Music Festival College Union Hunt Room	
9:55 – 11:10 AM Concurrent Presentations • Session 2 Bailey, Brodie, Doty, ISC, Newton, South, Welles	
<b>10:00 AM</b> Julia Walker Memorial Milton Reading Through 4:00 PM, breaking for keynote 11:30 literary pieces shared in honor of Julia Walker	
<b>11:15 – 12:00 PM</b> Jazz EnsembleSouth Hall Quad, rain location Wadsworth 21	
<b>11:15 – 12:45 PM</b> Poster Presentations 1College Union Ballroom	
<b>12:00 PM</b> Buffet Luncheon/Geneseo String BandCollege Union LobbySponsor: Geneseo Student Association	
<b>1:00 – 2:15 PM</b> <i>The Jack '76 and Carol '76 Kramer Endowed Lectureship</i> Wadsworth Auditorium	
2:25 – 3:40 PM         Concurrent Presentations • Session 3           ROUND ROBIN         Block 1 • 2:25 – 2:40           Welles         Block 2 • 2:50 – 3:05           Block 3 • 3:15 – 3:30	
<b>3:50 – 5:05 PM Concurrent Presentations • Session 4</b> Bailey, Brodie, College Union, Doty, ISC, South, Welles	
5:10 PM Geneseo Winter Guard College Union Plaza	
5:15 – 6:45 PM Poster Presentations 2 & Reception College Union Ballroom Keynote Speaker Book Signing Virtual Reality Demonstrations	
6:00 PM GREAT Battle of the Artists Awards CU Kinetic Gallery	
6:30 PM reception, 7:00 PM screenings Wadsworth Auditorium Geneseo Insomnia Film Festival	

# The GREAT Day Opening Coffee Hour 7:30 – 8:20 am, Milne Library Honoring

### **Ten Year Sponsors**

GREAT Day would not be possible without the dedicated faculty who work with students throughout the year on the projects that are presented annually. As we observe the 12<sup>th</sup> Annual GREAT Day, we would like to acknowledge the following faculty who, as of this year, have served as faculty sponsor for 10 GREAT Days:

BUSINESS Avan Jassawalla

**CENTER FOR COMMUNITY** Tom Matthews

**CHEMISTRY** Wendy Pogozelski

HISTORY Justin Behrend MATHEMATICS Douglas Baldwin Jeff Johannes Gary Towsley

**MUSIC** James Kimball

**THEATER** Randy Kaplan



# THE PROCEEDINGS OF GREAT DAY 2017 IS NOW AVAILABLE!

go.geneseo.edu/greatjournal

Featuring original student research and interviews, including an exclusive interview with Provost and Vice President for Academic Affairs Stacey Robertson!



# Students and Faculty Mentors Published in the Proceedings of GREAT Day 2017:

CAROLINE O'BRIEN JENNIFER KATZ, PSYCHOLOGY

**ZOE MARR, COLLEEN STEWARD** BARNABAS GIKONYO, CHEMISTRY

**SYDNEY KLEIN** JONETTE LANCOS, DANCE

HAERREEM HYUN MELANIE MEDEIROS, ANTHROPOLOGY

**STELLA ODURO** MELANIE MEDEIROS, ANTHROPOLOGY NICOLE PERO MELANIE BLOOD, ENGLISH

**ERICA DOHERTY, DANIEL STERN** MEREDITH HARRIGAN, COMMUNICATION

MARIA GERSHUNI ROBERT GOECKEL, POLITICAL SCIENCE AND INTERNATIONAL RELATIONS

TESSA HORN PAUL PACHECO, ANTHROPOLOGY

STAFF: DANIEL ROSS, ALISON BROWN, SHERRY LARSON-RHODES INTERNS: MARLEY DEROSIA, ISABEL KEANE

# The Jack '76 and Carol '76 Kramer Endowed Lectureship KEYNOTE ADDRESS

Wadsworth Auditorium • 1:00 – 2:15 PM

Introduction by Dr. Thomas E. Matthews, Associate Dean of Leadership and Service

# Dr. Barbara Kellerman – "How to Make a Leader"

About Dr. Barbara Kellerman

James MacGregor Burns Lecturer in Public Leadership at the Harvard Kennedy School



Barbara Kellerman is the Founding Executive Director of the Harvard Kennedy School's Center for Public Leadership. From 2003 to 2006 she served as the Center's Research Director. Kellerman has held professorships at Fordham, Tufts, Fairleigh Dickinson, George Washington, Uppsala, and at both Dartmouth and the Tuck School of Business at Dartmouth. She also served as Dean of Graduate Studies and Research at Fairleigh Dickinson, and as Director of the Center for the Advanced Study of Leadership at the University of Maryland.

Kellerman received her B.A. from Sarah Lawrence College, and her M.A. (in Russian and East European Studies), M.Phil., and Ph.D. (in Political Science) degrees from Yale University. She was awarded a Danforth Fellowship and three Fulbright fellowships. At Uppsala (1996-97), she held the Fulbright Chair in American Studies. Kellerman was cofounder of the International Leadership Association (ILA), and is author and editor of many books including *Leadership: Multidisciplinary Perspectives; The Political Presidency: Practice of Leadership; Bad Leadership; Followership; Women and Leadership (co-edited with Deborah Rhode); Essential Selections on Power, Authority, and Influence* (2010); *The End of Leadership* (2012); and *Hard Times: Leadership in America* (2014).*The End of Leadership* was long listed by the *Financial Times* as among the Best Business Books of 2012, and selected by *Choice* as "essential" reading. It was also named by *Choice* as an "Outstanding Academic Title for 2013." In 2015 *Hard Times: Leadership in America* received an Honorable Mention Award for its "significant contribution to the field of leadership" from the University of San Diego. And, in 2016 it too was selected by *Choice* as an "Outstanding Academic Title." Kellerman has appeared often on media outlets such as CBS, NBC, PBS, CNN, NPR, MSNBC, Reuters and BBC, and has contributed articles and reviews to *the New York Times*, the *Washington Post*, the *Boston Globe*, the *Los Angeles Times*, and the *Harvard Business Review*.

Barbara Kellerman speaks to audiences all over the world, including, in recent years, Berlin, London, Moscow, Rome, Sao Paolo, Shanghai, Zurich, St. Gallen, Jerusalem, Turin, Toronto, Montreal, Mumbai, New Delhi, Amsterdam, Kyoto, Munich and Sydney. She has served on, among many others, the Advisory Board of Leadership, the Advisory Board of the AAUW project on Women and Leadership, the Advisory Board of the Brookings Institution Leadership Initiative, and the Academic Committee of the Women Leadership Academy (China). She was ranked by *Forbes.com* as among "Top 50 Business Thinkers" (2009) and by *Leadership Excellence* in top 15 of "thought leaders in management and leadership" (2008-09 and again in 2010-2011). In 2010, she was given the Wilbur M. McFeeley award by the National Management Association for her pioneering work on leadership and followership. In 2015, 2016, and 2017 she was ranked by Global Gurus as # 13 on the list of "World's Top 30 Management Professionals." And in 2016, she was given the Lifetime Achievement Award by the International Leadership Association. Her next book, *Professionalizing Leadership*, as published in March, 2018 by Oxford University Press and will be on sale at the College Bookstore during the book signing. She blogs regularly at barbarakellerman.com.

There will be a book signing and reception in conjunction with the poster session in the College Union Ballroom at 5:15 pm. The bookstore will have copies of several books for sale. All are welcome.

### **CONCURRENT PRESENTATIONS 1 • 8:30 - 9:45AM**

#### 1A • BIOLOGY MATHEMATICS MODELING 1 ISC 115

FACULTY SPONSOR AND SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY

### R<sub>0</sub>, Latency Period, Infectious Period, and Coexistence of Two

#### Strains Affect Influenza Prevalence ERIN KESEL, CHRISTOPHER KUBOW, ALEXANDER WEBBER

Current methods for selecting and producing influenza vaccines takes about six months and. therefore, may not be effective against circulating strains. Difference equation, small world network, and SEIR models were constructed, and varying combinations of R<sub>o</sub>, latency period, and infectious period were simulated on these models. Additional simulations involved testing the coexistence of two strains. Intermediate R<sub>0</sub> values and short infectious periods resulted in higher peak numbers of infected individuals. Coexistence of highly infective and less infective strains led to fewer number of individuals infected with the more infective strain. Coexistence of two different but equally infective strains led to a lower number of individuals infected by both strains. These results suggest that if a highly infective strain of influenza is recognized in a population, introducing a less infective strain will result in fewer people infected by the more infective strain at one time. Additionally, the results indicate that strains known to have intermediate R<sub>o</sub> values and short infectious periods should be preferentially chosen to be included in the annual influenza vaccine.

#### Modeling the Spread of the Measles Virus in the Democratic Republic of the Congo

DEVIN EDDY, MATTHEW MATTERA, GABRIEL JAY Measles is a viral disease that has become prevalent in the Congo recently, and with our research in understanding the disease and the effect of vaccines the proper strategy for vaccination can be determined. We developed a model using a system of differential equations. Individuals are classified as susceptible, infectious or recovered. We also vaccinated individuals at different rates to test its effectiveness at reducing disease prevalence. We ran the model five times and saw that with increased vaccination rates, the infectious class decreased. Running the model a few more times with varying vaccination rates resulted in similar changes in the infectious class. We also saw that the model ran with rates represented in the Democratic Republic of the Congo accurately represented the real-life population. Our results show the change in the infectious class over time with different rates of vaccination. As expected, an increase in the vaccination rate leads to an overall decrease in the number of people infected.

#### Influenza Vaccine Effectiveness in Differently Styled College Dormitory Buildings

#### JACK MCALEVEY, JACK MCALEVEY, HANNAH SHEEHAN, SPENCER SUGDEN

College dormitories are environments with a high density of individuals that interact frequently in a manner affected by the structure of the building (corridor or suite). Therefore, the spread of influenza is a serious concern. We developed a network model for hypothetical corridor and suitestyle dormitories using weighted edges to reflect connections between residents. In descending order by weight, these connections represent roommates, suitemates, friends, and neighbors. To reflect the differences in interactions in the two styles of dormitories, we randomly generated more friendships and higher neighbor interaction in corridor-style. Each resident is classified as either susceptible, infected, recovered, or vaccinated. By varying the percentage of residents in the hall who are vaccinated we can examine how vaccination affects corridor and suite-style dorms differently. We then compare the network model to a difference equation model. From the SIRV model, we observe that influenza spreads more quickly in corridor-style dormitories. We also observe that increasing the percent vaccinated in both dorm styles results in a greater reduction of influenza transmission in the suite-style dorm. This suggests that in corridor-style dorms influenza spreads more effectively and higher levels of vaccination are necessary to limit its spread.

#### Modeling the Epidemic Dynamics of Severe Acute Respiratory Syndrome JASON LANG, JASON LANG, SERHIY POMAYDA, JULIA TELLERMAN

Severe acute respiratory syndrome (SARS) is a fatal respiratory illness that spreads through droplets in the air after an infectious person sneezes or coughs. In 2002, a SARS outbreak began in China and, within a few months, had spread worldwide. Placing every individual in guarantine during an outbreak is impossible, therefore it is important to find the ideal number of infectious individuals to isolate. We are interested in modeling this epidemic to determine the ideal guarantine rate that is also the most cost effective. In order to determine the ideal guarantine rate, we constructed a network model that included a super-spreader. A super-spreader is a person that infects others with a disease at a disproportionately higher rate than others with the same disease. We used an SIQR model in which infectious individuals are moved into a quarantine class at a specific rate to avoid further spread of SARS. From our SIQR model, we observe that it is not necessary to quarantine every infected individual. The ideal quarantine rate is cost effective and decreases the length of the epidemic. With this knowledge, we can use this rate to prevent a future worldwide SARS epidemic.

#### 1B • BUSINESS SOUTH 340 DISMAL DILEMMAS: TAXES, TARIFFS, AND INEQUALITY 2018, WITH THE FED CHALLENGE TEAM S FACULTY SPONSOR AND SESSION CHAIR: LEONIE STONE, BUSINESS

AMMAN WEAVER, BEN SWISHER, BRANDON LEE, BRENDAN MAHONEY, CONOR KIRBY, CHRISTIAN WHEATLEY, DESTINY PARSONS, DILLON MEDD, EMMA HOLTZMAN, JAMES HAMILTON, LUKAIS SCIANDRA, PAVLO HUDA, SARAH COMERFORD, WILSON TAN

The Fed Challenge Team presents the macroeconomic outlook for the U.S. economy, with emphasis on some of the most important current economic issues, taxes and fiscal policy, tariffs and international trade, and income inequality.

#### 1C • COMMUNICATION BAILEY 105 VISUAL COMMUNICATION PERSONAL BRAND PROJECT

FACULTY SPONSOR: LEE PIERCE, COMMUNICATION SESSION CHAIR: ERIK BUCKINGHAM

#### Caught Between Two Words JARED CALDERON

This visual brand incorporates a Photoshopcreated image and blurb to send a strong message to the world about my personal-professional identity, including my values and belief structures. Overall I want to communicate visually in this brand that I am a person torn between a love of leisure and a desire for success that I am learning to navigate as a student. The brand will make use of juxtaposition to communicate that message.

#### 90s Kid

TYLER WHITE

This visual brand incorporates an In-Designcreated image and blurb to send a strong message to the world about my personal-professional identity, including my values and belief structures. Overall I want to communicate visually in this brand that I have been inspired by the media that others often consider superficial because they have given me a sense of the possibilities in the absurd. Also, I wish to communicate that because of this influence I am a creator looking forward to shaping the next generation. The brand will make use of pastiche and foregrounding to communicate that message.

#### A Kind of Magic CESAR NUNEZ

This visual brand incorporates a Photoshopcreated image and blurb to send a strong message to the world about my personal-professional identity, including my values and belief structures. Overall I want to communicate visually in this brand that I am a visionary who uses art and design as creative structures through which I can interrogate the world as it is and re-make it as I wish for it to be. The brand will make use of graphic overlay and foregrounding to communicate that message.

One Woman in Her Time Plays Many Parts SOPHIE YEOMANS This visual brand incorporates a Photoshopcreated image and blurb to send a strong message to the world about my personal-professional identity, including my values and belief structures. Overall I want to communicate visually in this brand that I am a performer who enjoys riding the uncertain line between the roles I play and the person others believe me to be. The brand will make use of abstraction and repetition to communicate that message.

# 1D • EDGAR FELLOWS PANEL 1

BAILEY 202

SESSION CHAIR: LISA MEYER, EDGAR FELLOWS

#### Sexual Assault and Education on College Campuses ELIZABETH VERRASTRO

FACULTY SPONSOR: ALICE RUTKOWSKI, ENGLISH Every two minutes, a sexual assault occurs in the United States. For my capstone, I undertook an internship with RESTORE, a program of Planned Parenthood of Central and Western New York, which serves as a five county rape crisis program that provides crisis intervention and support to survivors of sexual assault and their loved ones. I've met on campus with our RESTORE counselor. This past year, I have shadowed RESTORE staff as they worked with clients, facilitated consent and sexual assault workshops, and planned events and activities for Sexual Assault Awareness Month. Based on my experiences, I've developed a presentation to augment the college curriculum on sexual assault that can be used in classrooms, residence halls, and club meetings.

# Student Movements in South Africa g

#### ISABELLA VICENTINI

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS In 2015, students at universities across South Africa began protesting the oppressive systems at work in their educational institutions and the country as a whole. From the Fees must Fall movement, tackling the ever-rising cost of receiving tertiary education, to Rhodes must Fall, a movement aimed at decolonizing South African education, the students have continued to organize themselves and become political actors. The students must navigate their available political opportunity, which has been recently complicated by the changes in the national government. With the resignation of former President Jacob Zuma, a new executive government could come with meaningful changes to the South African government's budget and the education system. By researching how the student movements have occurred in recent years under the former administration, I will look ahead to see whether the introduction of a new administration will bring success to the student movements.

### Apocynin as an NADPH Oxidase Inhibitor

#### TORY WELSCH

FACULTY SPONSOR: DAVID JOHNSON, CHEMISTRY Apocynin is a naturally occurring compound that is known for its anti-oxidative and anti-inflammatory effects within the human body. The enzyme NADPH oxidase has been confirmed as the predominant source of excess reactive oxygen species (ROS) within endothelial cells. Recent studies have shown that the apocynin dimer, diapocynin, directly inhibits NADPH oxidase by preventing the translocation and binding of the p47<sup>phox</sup> subunit. Apocynin therefore shows potential to prevent inflammatory diseases such as atherosclerosis and diabetic retinopathy. This study aims to investigate the inhibition mechanism of apocynin by studying the interactions between apocynin and L-cysteine. These species each form dimers in the presence of myeloperoxidase (MPO) in vivo. To mimic this oxidizing environment in vitro, apocynin and L-cysteine are treated with a hydrogen peroxide and horseradish peroxidase system. The dimer product formation is then monitored through LC-MS and NMR spectroscopy. Understanding the effect of diapocynin on the dimerization of L-cysteine could help elucidate the mechanism by which apocynin inhibits NADPH oxidase. Selected for presentation at 255th American Chemical Society National Meeting, New Orleans, LA.

#### 1E • EDGAR FELLOWS PANEL 2 BAILEY 102

SESSION CHAIR: MICHAEL MILLS, NATIONAL FELLOWSHIPS AND SCHOLARSHIPS

#### Dynamics of a Measles Epidemic in a Population of Susceptible Elementary School Students RACHEL KNAPP

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Although measles has been officially declared eradicated in the United States, small, concentrated regions that fail to achieve sufficient vaccination coverage present the opportunity for an epidemic should the disease be introduced into the population. Thus, healthcare workers must understand the dynamics of a measles epidemic in susceptible population to а make recommendations for vaccination strategies and levels of classroom connectivity that minimize disease spread. I developed a network model of a school to test the dynamics of a measles epidemic. I used different network structures, vaccination strategies, vaccination efforts, and timing of removal of infected students. Results indicated that classroom connectivity impacts the ability of measles to spread. At high levels of connectivity, varying vaccination effort and strategy does not have a significant effect on the number of students that become infected. At low levels of connectivity, the preferential vaccination of highly connected students results in the greatest reduction in the total number of students that become infected. Additionally, having systems in place to identify and remove infected students from school quickly can lead to a reduction in the total number of students that become infected.

#### Laugh to Keep from Crying: Implications of African American Humor as a Cultural Shaper in the Jim Crow and Civil Rights Era South JENNA LAWSON

FACULTY SPONSOR: EMILYE CROSBY, HISTORY

This presentation examines humor from and about African Americans as a method of building communal identity and defining racial boundaries and stereotypes after the end of the Civil War. The research presented seeks to show how humor was used to cement the social construct of race and inform white and black communal identity. The source material for these considerations comes from popular culture as well as personal narratives with emphases on minstrelsy and the development of black comedy circuits. This presentation will also reckon with opinions within the African American community regarding respectability and selfrepresentation. It demonstrates the multifaceted reality of humor's effects on a culture, including building solidarity within a community and deconstructing or reinforcing stereotypical perceptions of outside communities. Humor was used against African Americans by whites as well, abstracting the humanity of black life in favor of ridiculous performances of blackness by white creators that encouraged whites to see African Americans as primitive, simple, or animalistic. These two main uses of humor were constantly in conflict with each other and primed the cultural backdrop against which the contentious battles of the Civil Rights Era took place. Selected for presentation at New York Phi Alpha Theta (Historical National Honor Society), Nazareth College and SUNY Undergraduate Research Conference, Monroe Community College.

#### The Geneseo Experience: As Told By WOC SAMIRA SAHLA

FACULTY SPONSOR: MICHAEL MILLS, OTHER This project gathers quantitative data on the collegiate experience of the project's focus group: students of color who identify as women and nonbinary ranging from freshmen to senior year. Through surveys and group interviews, the research compiles the reflections of over 50 women. The project is not meant to simply summarize their college years but rather to provide personal accounts and sentiments reflecting the Geneseo experience by women of color from many backgrounds and demographics. The compilation of stories will be formalized into an essay which will illustrate these stories through individual narratives, explore trends or patterns in the data collected, and set expectations and suggestions for the Geneseo community.

### 1F • EDGAR FELLOWS PANEL 3

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BAILEY 203
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SESSION CHAIR: MICHAEL MASCI, MUSIC

#### Closing the Gap: An Argument for Increased Representation of Women Composers in Concert Programs and Music History Courses

#### JENNIFER BENDER

FACULTY SPONSOR: BROOKE MCCORKLE, MUSIC The composers associated with the Western Music Canon are almost all male. The glaring lack of women in the canon should not be confused with a lack of proficiency – the gender imbalance is a matter of bias, not skill. Historically, cultural attitudes towards women have discouraged them

#### Session 1 • 8:30 – 9:45 AM

from pursuing careers and skills that are typically associated with masculinity, composition included. In my paper, I question the lack of female representation in modern music history courses and in current concert programs in the United States. At an intersection of Sociology and History, I examine attitudes and cultural currents in the Western world that have contributed to the unequal representation we are presented with today. I speak to several female composers and composition majors about their experiences and the ways in which gendered biases may have affected their work and their motivation. I will ultimately argue that it is both beneficial and necessary to represent female composers in music history courses and concert programs so as to inspire and encourage the next generation of women to pursue composition, essentially working to close the gender gap that has plagued classical composition for centuries.

#### **Fictional Portrayals of Therapy Affect Attitudes Toward Mental** Health Treatment JULIA CAMFRON

FACULTY SPONSOR: STEVEN KIRSH, PSYCHOLOGY This study assessed the influence of fictional portrayals of psychotherapy on attitudes about seeking mental health treatment. Participants answered questionnaires about stigma and helpseeking attitudes and were exposed to either ethical or unethical television portrayals of a therapist and a patient speaking with each other. Results indicated that participants who viewed ethical depictions of psychotherapy expressed more favorable attitudes towards mental health treatment than those viewing unethical portrayals. limitations Methodological and clinical implications are discussed. Selected for presentation at Association for Psychological Science, San Francisco, CA.

#### What is History Even Good For?: An **Analysis of World History Textbooks**

#### **DEANNA PALMA**

FACULTY SPONSOR: MEGAN ABBAS, HISTORY Teaching history has always been an area of public contention. The debate over how to teach history has often taken shape as a critique over history textbooks, the arbitrators of "objective truth" in the Social Studies classroom. This thesis will examine the history of textbook debates by paying close attention to the common themes that arise and how these themes play out in contemporary discussions. This thesis will analyze the portraval of the non-West to ascertain the popular narrative propagated to the classroom. After the attacks on 9/11, Islam in the classroom has been a subject followed by controversy. I will therefore look in depth at the portrayal of Islam and the Middle East, tracing how the textbook characterization manifests itself in popular attitudes.

#### **1G • EDGAR FELLOWS PANEL 4**

#### BAILEY 103

SESSION CHAIR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

#### Money Attitudes and Behavior

#### GABRIELLE JUERS

FACULTY SPONSOR: JOAN ZOOK, PSYCHOLOGY

The purpose of this study is to examine the effects of materialism and financial literacy on irresponsible money behaviors. The was conducted using a questionnaire posted one the psychology subject pool website. The study surveys the students level of materialism, asks the student to assess their level of financial prowess in addition to asking some basic questions on financial knowledge, and surveys the students responsible and irresponsible behaviors. Once all of the results have been compiled, statistical tests will be performed to determine if there is a significant relationship between the factors.

#### **Exploring the Efficacy of Vaccination Strategies to Reduce** the Spread of HPV MARY PYATT

FACULTY SPONSOR: GREGG HARTVIGSEN, **BIOLOGY** 

Although a vaccine has been available for more than 10 years, vaccination rates against HPV have remained much lower than other recommended vaccinations. Despite public health campaigns to increase coverage, some barriers to vaccination include the stigma associated with a sexually transmitted disease and a lack of awareness that both males and females benefit from vaccination coverage. In order to investigate how vaccination strategy affects the spread of HPV, I constructed a cohort-style bipartite network model. Based on recommendations from the CDC, sex-based (vaccination of females compared to males and females) and age-based (vaccination over time compared to all at once) vaccination strategies were implemented at different vaccination efforts. I found that vaccinating only females is most effective at limiting the spread of HPV. This finding suggests a potential implementation strategy when developing vaccination recommendations for naïve communities. Initial focus should be on reaching a sufficient vaccination level of females, with vaccination of males only implemented after this level has been reached and sustained. In communities where female vaccination rates are already high, extra vaccines can be utilized to include males for increased community protection.

#### The Evolutionary Heyday of the **Apes: The Miocene Epoch** CLAIRE SHEEN

FACULTY SPONSOR: BARBARA WELKER, ANTHROPOLOGY

When new discoveries about possible human ancestors, like Ardi and Lucy, are made they almost always make the news, whereas the incredible discoveries relating to the ancestors to other apes are often never mentioned. Paleoprimatology, the study of these ape ancestors, is a continuously expanding field, with the constant discovery of new and interesting species. However, there is little up-to-date, comprehensive literature on the subject, outside of primary research. This project aimed to create an edited volume with genera chapters containing encyclopedic information on the phylogeny, biogeography, and ecology of each species, with limited jargon and the ability to be used as an undergraduate or graduate textbook. This presentation will highlight some of these ancient ape genera ranging from the interesting to the unbelievable.

#### 1H • ENGLISH & HISTORY WELLES 119 ADVANCING THE DIGITAL **HUMANITIES @ GENESEO PANEL 1**

SESSION CHAIR: PAUL SCHACHT, ENGLISH

#### What Women Wrote: Text Analysis of 19th Century American Women's Writing

#### HOLLY GILBERT

FACULTY SPONSOR: PAUL SCHACHT, ENGLISH This digital humanities project (published as a WordPress site) performs a text analysis of works by early American women writers, focused on their relationships to and treatment of prominent social issues of their time -- slavery, education, economic empowerment, and gender roles. Voyant Tools is used to visualize keywords, contexts, and trends in individual texts to pinpoint what eight specific authors were writing about. Meanwhile, Python programming adds scope to the project by visualizing word frequencies and sentiment analysis in a larger cross-section of women's works from this period. The data pulled from these women's texts challenges the perception that early American women were confined to domestic or even frivolous issues by demonstrating the extent to which they tackled pervasive social concerns.

#### **Black Politicians in the Post-Civil** War Natchez Region ALLISON MAIER

FACULTY SPONSOR: JUSTIN BEHREND. HISTORY After the Civil War, there was a surge of African-Americans into politics. This wave lasted until the late 19th century, when racist practices and legislature forced many African-Americans out of the political sphere. Using data collected by Professor Behrend of the History Department, this digital humanities project focuses on expanding information about African-American politicians from the Natchez region (straddling Mississippi and Louisiana) into a website with a map, timeline, searchable database, and analytical sections.

#### The MTA as a Model for **Ecologically Beneficial Advertising** and Bringing a Humanities Project Into the Digital Realm 🔊 JACOB SNYDER

FACULTY SPONSOR: PAUL SCHACHT, ENGLISH Advertisements typically aim for the lowest common denominator to sell a product or service; however, the Metropolitan Transportation Authority's (MTA's) subway advertisements have different goals: to build riders' trust in and loyalty to the MTA, to create a sense of community between the two parties, and to promote environmentally friendly and efficient practices. Through analyzing several MTA advertisements, I will break down how this is achieved in a way that is mutually beneficial for both the MTA and its riders, and consider how such a style of advertising can be emulated. This project takes advantage of digital platforms to analyze these advertisements and publicly broadcast my analysis over the internet, so as my project took many forms over

WELLES 123

two years, I find it is worth a metacommentary on the path this project has taken to find its full form as a digital humanities project.

#### 1I • ENGLISH

FACULTY SPONSOR AND SESSION CHAIR: LYTTON SMITH, ENGLISH FACULTY SPONSOR OLYMPIA NICODEMI, MATHEMATICS

#### NeuWrite/edu: Creative Science Writing

#### MADISON WAYLAND, ELIZABETH PELLEGRINO, LILY CODERA, JAMES CANNING, MELANIE TRAN, PATRICK BUCKLEY, ROBERT TUMASIAN, JENNIFER GALVO

NeuWrite/edu is an interdisciplinary, year-long collaboration between writers and scientists that seeks out ways to communicate cutting edge undergraduate scientific inquiry and discovery through engaging, informed essays and other written projects. SUNY Geneseo this year launched the first undergraduate chapter of the nationally recognized NeuWrite organization which has placed science writing in venues such as *Wired*, *The Atlantic*, and *The New York Times Magazine*. In this presentation, students will present science research and creative writing that responds to that research, and discuss the opportunities and challenges of collaborating on science writing.

#### 1J • ENGLISH WELLES 117 SPEECH BUDD(ESE) : HOW TO TEACH ENGLISH TO INTERNATIONAL PEERS

FACULTY SPONSOR AND SESSION CHAIR: IRENE BELYAKOV-GOODMAN, ENGLISH

# SYDNEY SCHMIDT, KEVIN PIERCE, KATHERINE MCCORMACK, JENELLE PIATT

As the service learning component for our course, "Methods of Teaching English to Speakers of Other Languages," we have been paired with international student "speech buddies" to tutor English. From cultural references to consonants, we help our buddies improve both their written and oral communication in an effort to boost their confidence and proficiency in speaking English, and most importantly, help them immerse themselves in American culture. At this session, we will present the approaches, methods, resources and activities we have used so far this semester with our individual buddies. If you're interested in this course or in the process of tutoring English to nonnative speakers, come learn how to speak "speech buddese!"

#### 1K • ENGLISH WELLES 131 RECLAIMING BLACK WOMEN'S REPRESENTATION: FROM "BOTTOM POWER" TO DEE REES' BESSIE (2015)

FACULTY SPONSOR AND SESSION CHAIR: JUN OKADA, ENGLISH

Developed by select students from the course Black Studies 288: Black Cinema in Fall 2017, this panel investigates the ways in which the image and discourse of Black women have circulated in contemporary media. Specifically, Claire Drake problematizes the historical legacy of the hypersexualized Black woman as established in the popular Blaxploitation genre of the 1970s by considering how contemporary Black feminist thought might intervene in this legacy. By contrast, R.T. James considers the contemporary Black American director, Dee Rees, whose work has flown under the radar despite being highly critically acclaimed. James will focus on the representation of Black lesbian identity in her feature film about Blues singer Bessie Smith, *Bessie* (2015), and how it uses narrative and visual style to avoke an engaging but decidedly challenging representation of Black women.

#### Foxy Brown: "Bottom Power" and the Hypersexualization of Black Women in Blaxploitation CLAIRE DRAKE Developed by select students from the course

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#### Dee Rees' *Bessie* (2015): Representing the Black LGBTQ Female Artist RICHARD JAMES

Developed by select students from the course Black Studies 288: Black Cinema in Fall 2017, this panel investigates the ways in which the image and discourse of Black women have circulated in contemporary media. R.T. James considers the contemporary Black American director, Dee Rees, whose work has flown under the radar despite being highly critically acclaimed. James will focus on the representation of Black lesbian identity in Rees's feature film about Blues singer Bessie Smith, *Bessie* (2015) and how it uses narrative and visual style to evoke an engaging but decidedly challenging representation of Black women.

#### **1L • GEOGRAPHY** BAILEY 101 FACULTY SPONSOR AND SESSION CHAIR: DARRELL NORRIS, GEOGRAPHY

#### The Fourth Reich?: An Analysis of Global Neo-Nazism DREW ARNUM

Many in the United States argue that Donald Trump's election has mainstreamed neo-Nazism, normalizing extremely hateful and prejudiced rhetoric. But what is the state of neo-Nazism around the world? Over 40 countries currently have active neo-Nazi groups, with varying degrees of mainstream acceptance, from Golden Dawn holding multiple seats in Greece's parliament to Germany banning swastikas. Through an analysis of historical records, websites and public appearances, this research categorizes hate groups based on their rhetoric. Neo-Nazi organizations often tailor their prejudice based on national and global issues, some more racist, anti-immigrant, Islamophobic, nationalistic, etc. than others are. Some function as political parties, some organize rallies and social media campaigns, and others advocate for violence outright. While neo-Nazi groups remain on the fringes of their societies, it is important to understand their outlook, scope and influence in order to combat this hatred and prejudice effectively.

#### The True Scope of Theocracy MICHAEL CECERE

An examination of the impact of theocracy in the Islamic Republic of Iran and how it impacts not only Iranian citizens but the entire planet.

#### 1M • HISTORY WELLES 133 HONORS PROJECTS - EUROPEAN HISTORY

FACULTY SPONSOR AND SESSION CHAIR: JOE COPE, HISTORY

#### The Damned and the Domina: The Role and Historical Memory of Female Servants in the First Slave Society

#### THERESA GIBBONS

Despite their foundational role in the development of British colonial Barbados, research on the experiences of female indentured servants is limited. As a result, both popular and scholarly press has framed the experience of servants and slaves through a masculine lens, blurring the line between both. This study seeks to analyze the female indentured servant experience as a continuity of pre-existing systems of unfree labor and understand their role in developing and maintaining the first slave society.

#### Collections in the Crossfire: The Lasting Legacy of Imperialism in the British Museum ZACHARY VEITH

Through an examination of the Egyptian mummy, Parthenon sculptures, and Benin bronzes collections in the British Museum, a troubling legacy of imperialism is revealed. Placed in the conflicting dichotomy of nationalist sentiment and world heritage ideals, these pieces demonstrate the complex issues of representation, contextualization, and repatriation facing modern global museums today.

#### 1N • MATHEMATICS WELLES 24 HISTORY OF MATHEMATICS 1

# FACULTY SPONSOR AND SESSION CHAIR: GARY

#### TOWSLEY, MATHEMATICS

#### Ancient Indian Mathematics ERIKA ESQUIVEL

Influences of India in mathematics such as Hindu mathematicians, the concept of zero, and decimal place notation.

#### Connecting the Aztec Number System and the Aztec Calendar ALEXANDRA CASADO

My GREAT day presentation will be on the Aztec calendar system. I will be discussing both calendar systems, the Xiuhpohualli and the Tonalpohualli. I am going to go in depth on the these systems and

#### Session 1 • 8:30 – 9:45 AM

explain how they are used and what they are used for. The Xiuhpohualli is a 365 day calendar while the Tonalpohualli is a 260 day calendar. Each calendar is separated into a different number of months than our known calendar. I will also go into the symbols and numbers of these calendars most importantly.

#### The Mathematics of the Mayans TESSA LIVOTI

The Mayans were one of many Mesoamerican civilizations that made advancements in mathematics. This paper will discuss the Mayan numeral system and what they were able to accomplish with it. One of their many accomplishments was their calendar system. This calendar system included several different calendars that measured time periods of varying lengths. The three main calendars were the Haab. the Tzolk'in, and the Calendar Round. They also developed the Long Calendar to help date historical events and helped in various subjects like predicting eclipses. The Mayans recorded their predictions in what is known as the Dresden Codex. The purpose of this presentation is to discuss the Mayan number system, how it was used in their calendars, their different types of calendars and a brief look at the Dresden Codex, specifically in how it was used to predict eclipses.

#### 10 • MATHEMATICS WELLES 26

FACULTY SPONSOR AND SESSION CHAIR: JEFF JOHANNES, MATHEMATICS

#### How Does Google Trips Create Travel Itineraries? SELIN ERDOGAN

Google Trips, a Google mobile application, uses mathematical concepts to create travel itineraries within tourist cities throughout the world. In particular Google uses Leonhard Euler's Seven Bridges of Köningsberg Problem, the Christofides' algorithm, and the notion of finding the path of least weight. I will demonstrate how these concepts are used, as the application gives you a suggested route that minimizes distance, cost, and time.

#### The Magical Math Behind the Shazam App TIM SCHOFIELD

Have you ever figured out the name of a song that you are listening to by using the Shazam App? Have you ever wondered how the Shazam App is able to make it all happen? The Shazam App uses some magical math, otherwise known as spectrograms, hashes, and landmarks, to quickly identify your favorite song and millions more. But how?

#### Using Probability to Find the Best Location for the First Settlement in *The Settlers of Catan* JAMES CAULFIELD

The *Settlers of Catan* is a competitive, four-player board game. One of the most important aspects of the game is where you place the first settlement. You must place the first settlement on one of the corners of the hexagon board pieces. Each of these pieces has a different number labelled two through twelve (without seven). These numbers have a different probability of being rolled on standard dice. During this talk, I will use the hexagon probabilities to find the best location for the first settlement. I will add and multiply different probabilities to determine the best placement for the first settlement.

#### A Markov Chain Analysis of Overtime in the National Football League

#### KATIE SODARO

Since 1994 there was a clear advantage for the coin toss winner in overtime in the National Football League. The NFL implemented a new overtime system in 2012 to try to make the overtime period more fair. We can use absorbing Markov chains to model and predict the chances of winning for each team. After comparing both overtime systems, we will compute the reduction of the advantage for the coin toss winner after the rule change.

#### 1P • LANGUAGES AND LITERATURES WELLES 121

EDUCATION, SOCIAL MOVEMENTS, CRITICAL PERCEPTIONS OF AMERICAN CORPORATIONS: GENESEO STUDENTS' FIRST-HAND STUDIES IN SENEGAL.

#### FACULTY SPONSOR: KODJO ADABRA, LANGUAGES AND LITERATURES

SESSION CHAIR: REBA SCHNYDER

#### The Importance of Social Movements in Transitions of Power in Senegal MADELINE FLAMIK

In 2011, Senegalese former president Abdoulaye Wade used the Wolof language "Ma waxoon waxeet" ("I said it, I can take it back") to explain his decision to go back on his 2007 pledge not to run for a third term, making many Senegalese discontent. As a result, the activist group Y'en a Marre, meaning "We're Fed Up," was established to promote what they have coined the "Nouveau Type de Sénégalais" ("New Type of Senegalese") which encourages Senegalese youth to protest their government. Due to Y'en a Marre's success. similar movements have transpired in countries like Burkina Faso and Togo. Dr. Janette Yarwood critically stated that the current wave of political activism and protests across sub-Saharan Africa has focused on engaging people at the grassroots level and on holding politicians accountable. My research paper will fpresent a deconstruction of the tactics that activist groups in Senegal such as Y'en a Marre use and will analyze their culturally contextualized effectiveness during the 2012 transition of power. In view of the upcoming presidential election in 2019, this paper will also attempt to explore some contemporary new parameters to substantially impact the influence of these groups. Selected for presentation at National Conference on Undergraduate Research, University of Central Oklahoma.

#### NGOs' Influence Leading to Educational Strides in Senegal: A

# Possible Solution to Financial Success and Independence? S

#### EMILY HAYES

Education is seen by many as key to any sustainable development. The United Nations, at its historical summit in September 2015, published seventeen Sustainable Development Goals to guide the role of public, non-profit, for-profit, and voluntary sectors in global development. One of these major goals is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Senegal is a western African developing nation where the advancement and accessibility of education has produced noticeable economic and social development for its people. The role of non-governmental organizations, since the 1970s, has been substantial in sustaining the many ongoing and encouraging results in terms of equality, literacy, and job creation. In this paper, I will critically analyze the tangible effects produced by educational programs implemented by NGOs in Senegal. Moreover, I will present, from the Senegalese cultural framework, a social compatibility assessment of some of the identified successful educational programs that provide viable capitalistic tools to assure many families' financial stability. And to substantiate my analysis, I will also use information that I obtained through interviews with local Senegalese NGOs, such as Nos Sœurs Lisent (Our Sisters Read) and international NGOs based in Senegal, such as Positive Planet. Selected for presentation at National Conference on Undergraduate Research, University of Central Oklahoma.

### The Critical Perceptions of American Transnational Corporations in Dakar, Senegal S

TREVIS LIPNICKY

Currently, major transnational corporations have a commanding presence in international markets. In many cases, a consequence of the global economy is the exploitation of natural resources and human capital. In this paper, I focus my analysis of the political and economic relationships between these corporations and Senegal. I first explore and reveal how the average citizens of Dakar perceive the work of American corporations like Microsoft, IBM, and Coca-Cola in their communities, alongside the many French corporations inherited from their colonial history and post-colonial bilateral ties. Armed with these qualitative data, and in view of the existing literature on transnational corporations in the developing world, this paper then presents a critical analysis of the complex relationship between American transnational corporations and Senegalese consumers. This project was funded by the Gérard Gouvernet Ambassador in French Language and Culture. Selected for presentation at National Conference on Undergraduate Research, University of Central Oklahoma.

#### 1Q • POTPOURRI: ENGLISH & ANTHROPOLOGY

### WELLES 128

SESSION CHAIR: WES KENNISON, STUDY ABROAD

#### The Man in the Machine: Toxic Masculinity and Self-Hatred in Neon Genesis Evangelion

WILLIAM ANTONELLI FACULTY SPONSOR: BETH MCCOY, ENGLISH This paper, originally written for Bath Spa University's Film Studies program, talks about the theme of gender in Neon Genesis Evangelion, a highly influential sci-fi anime that originally aired from 1995 to 1996. While on the surface Evangelion may resemble a mere popcorn action series, in reality, it delves into much deeper themes. As the series goes on, what begins as a show about giant robots becomes a complicated character study touching on the topics of societal alienation, mental illness, and the ways that toxic masculinity contributes to both. However, critical responses to the series have rarely, if ever, focused on the motif of masculinity. This paper seeks to address this omission by focusing on the main character, Shinji Ikari, as a way of showing how themes of toxic masculinity are presented, and how they affect the plot of the series as a whole.

# Patience to Perseverance: A Socioeconomic Breakthrough for the Children of Rochester S

FACULTY SPONSOR: MELANIE MEDEIROS, ANTHROPOLOGY

It is apparent that there is a link between low socioeconomic status and quality of education. Youth living in poverty are at a disadvantage educationally which can lead to several outcomes, including low reading levels. During this presentation I'll discuss the literacy rates of students involved in the Boys & Girls Club in Rochester. With this focus on Boys & Girls Club, the presentation depicts the perceived impact of this program on the students involved. This program helps to address the disparity in education due to socioeconomic status.

#### Real World Geneseo: Introducing Gender Identity to Children's Literature

#### WILLIAM ANTONELLI, WILLIAM ANTONELLI, RAJAE BROWN, FELIX LANERI, LEAH CHIN, AALIYAH JACKSON, TAYLOR GODDARD

FACULTY SPONSOR: WES KENNISON, ENGLISH Children's literature is a deceptively deep genre. Underneath its layers of pastel colors and talking animals, children's literature has historically served as a source for some of our first opinions and ideas about the world around us. Produced under the Real World Geneseo banner, this session will serve two functions: one, as a discussion of how to introduce the idea of gender identity to children through literature, and two, as the premiere of RWG 9's very own children's picture book! This book will define gender in a way that young readers will understand, and feature representational stories from people of various gender identities. Come for the gender politics, stay for the hand-illustrated pictures!

# **1R • THEATRE/DANCE** BRODIE 154 **DANCE**

FACULTY SPONSOR ABD SESSION CHAIR: JONETTE LANCOS, THEATRE/DANCE

#### Inspiration vs. Appropriation: Representation of Indigenous Cultures in Western Dance Companies g SAMANTHA SCHMEER

In modern, Westernized society, we are often fascinated by cultures that differ from our own. The well-meaning interest in other cultures, especially the cultures of indigenous tribes, can become problematic when people unknowingly treat these very real cultures and people as fictional entities. Our words and actions can perpetuate stereotypes harmful to these minority groups, contributing to an idea of "otherness," the idea that these people are separate from us. Artists have a high degree of responsibility when using other cultures as inspiration for their work. A brutal history of genocide, racism, and theft of land and identity makes dealing with indigenous tribes a sensitive and complex matter. Concurrently, it is important that their cultures be shared and appreciated. This presentation will explore how dance choreographers have successfully navigated the terrain between inspiration and appropriation, focusing specifically on Director of the Nederlands Dans Theater Jiří Kylián's use of the Aboriginal cultures for his ballet Stamping Ground, as well as the Limón Dance Company's piece based on Native American tribes. Their works will be compared to pieces performed by the American Indian Dance Theatre. The presentation will also discuss cultural equity, an ideal championed by American ethnomusicologist Alan Lomax.

#### Dance in a New Light: The Art of Personal Expression REBECCA BUCHMAN

The development of modern dance in American society was crucial in changing the way dance was perceived by the public. This newest revelation of dance was brought to light by legendary dancers, Isadora Duncan and Loïe Fuller. Both of these women captivated audiences by creating unique depictions of movement that rebelled against the traditional concepts of dance. My paper seeks to explore not only the contributions these women made to the world of American dance, but how these contributions highlight the power of individuality through movement, as a means of personal expression.

#### A Study of Labanotation and its Applications from 20th Century Europe to 21st Century America LAURA D'AMICO

Many styles of dance notation have existed throughout history, but the form developed by Rudolf von Laban in the 20th century is known as the most widely used language of dance in the Western world. During the late 19th and early 20th, Germany was finally politically united, allowing it to become an industrial superpower. Cities like Berlin expanded rapidly due to the Industrial Revolution. From this, transportation increased, communication ignited, and of course, artistic literacy flourished. American dancers like Loie Fuller and Isadora Duncan graced stages all across Europe with their nouveau take on interpreting the body's natural way of movement. Laban, born in the Austro-Hungarian Empire in 1879, moved to Paris to study architecture in the turn of the century and quickly found his love for the hustle-and-bustle of the Parisian pedestrians around him (Karina, Lillian & Kant, Marion). Under the influence of Heidi Dzinzkowska, he moved to Munich to focus on new studies in Ausdrucktanz (the rejection of the stagnation of dance, especially classical ballet and the adoption of expressionistic dance) (UK Digital Dance Archives-Rudolf Laban). While teaching at his school in Berlin, he published the first version of Labanotation, titled Kinetographie Laban.

### **1S • WOMEN AND GENDER STUDIES** WELLES 132

#### GENRE AND GENDER ANALYSIS OF RECENT FILMS

FACULTY SPONSOR AND SESSION CHAIR: MELANIE BLOOD, WOMEN AND GENDER STUDIES

#### From *Scream* to *Raw*: the 20 Year Evolution of Feminism in Horror Films

#### TANAIRI TAYLOR

Horror films have an intricate history with gender roles, specifically in their portrayals of their female leads and the narratives in which they place them in. A woman is usually the focal point of the story, but this is often through the perverted, obsessive gaze of an unknown and sadistic looker. Scream (1996) was marketed as a parody of the horror and slasher tropes that had come before it, but it more covertly criticized the gender tropes of horror films. I identify the feminist themes and framework of this film and its reception during the '90s. Next I analyze a film released 20 years later, Raw, which was blatantly marketed as a feminist body-horror. By comparing these films and their unique ways of subverting the repressive gender norms of older horror films. I delineate how horror and feminism have evolved over the past two decades.

#### Unlikely Heroines or Stereotypical Tropes: Exploring the Feminist Implications of Romantic Comedies JULIA MORRISON

Morrison will analyze existing works of feminist scholars by providing her own observations of romantic comedies. She will use this background to argue that romantic comedies can, in fact, be read as progressive, postfeminist works -- rather than superfluous, "fluff" films.

#### The "Born Sexy Yesterday" Trope in Fantasy and Sci Fi films CHLOE ROACH

#### Roach will examine the "born sexy yesterday" film trope and draw conclusions about how this trope is perpetuated by similar major plot points. She will analyze three or four contemporary films and create a plot map based on plot devices that these films use to develop the narrative, describe her experience with the "born sexy yesterday" trope, and argue the ways in which it is most dangerous to our understanding of the dynamics of gender, power, and human sexuality.

INFORMATION TECHNOLOGY

#### **1T • POTPOURRI: MUSIC, ART HISTORY, HISTORY** BAILEY 104 SESSION CHAIR: KIRK ANNE, COMPUTING AND

#### Living Locally - a Virtual Reality Art Gallery

#### JULIA TANNENBAUM

FACULTY SPONSOR: LYNETTE BOSCH-BURROUGHS, ART HISTORY

Living Locally is a virtual reality art gallery exhibiting the strides and struggles of sole proprietors in the local Livingston and Wyoming County community. The purpose of this presentation is to show a glimpse of what it takes to run a local business. In addition it will bring awareness and inform students and faculty about what is outside of our small campus. After being involved with Adopt-a-Business for the past four years, this is my thank you to the businesses that I have been so lucky to work with. Our goal at Adopta-Business is to educate the local businesses on the importance of technology and digital media. I have incorporated the advancing technology of our society in my presentation by showing this presentation through projection of the gallery, and also utilizing the expertise of Dr. Kirk Anne to build a virtual reality gallery through Photoshop that is then transferred to Google Cardboard. This will allow the observers to physically be immersed in the gallery.

# Orchard St. Music Hall: A Concert Venue, Nightclub, and Event Space for Geneseo and Beyond

FACULTY SPONSOR: GERARD FLORIANO, MUSIC SUNY Geneseo students need more performing spaces. Music, dance, and performing arts organizations of all kinds are struggling to find times to stage performances amidst competition from the incredible variety of events that Geneseo hosts across campus. Additionally, after The Statesmen shut its doors a year ago, Geneseo lost its only nightclub. Students have been left without a proper dance space and club environment in which to socialize and express themselves. Finally, the college and campus community is in need of an inclusive, off-campus environment to unwind and build connections. The Orchard St. Music Hall would satisfy all of these demands. I propose a renovation of (formerly known as) The Statesmen to provide a for-profit concert hall, nightclub, and event space for SUNY Geneseo and its community members. Geneseo must continue to be a vocal supporter of the arts and a unified community. Ensuring that performers have the means to present their art, students have a safe and inclusive space to dance, and the campus and community have a venue to make connections are the primary objectives of this project.

The Holocaust on Screen KATHRYN FORRESTER

FACULTY SPONSOR: KATHLEEN MAPES, HISTORY Whether it's in a movie, book, or memorial the topic of the Holocaust has become deeply engrained into American history. Despite the fact that the Holocaust is a European historic event. America has emerged as one of the most 'Holocaust conscious" nations in the world. Hollywood has taken a major role in exposing the American consciousness to the carnage of the European Jews. As the twentieth century wore on Films became an important tool in shaping the mindset of the American public. Although we must give credit to such films and television programs for exposing historical topics to the public like never before, we must tread carefully regarding how these films have effected the representation of the Holocaust in the American collective memory. By examining the decades following the Holocaust we can see how popular films shaped the American consciousness. We can also see how the changing times and shifting culture in America lent itself to the narrative behind these films, and consequently the depiction of the Holocaust. By examine scholarly debates and Hollywood's depiction of the Holocaust though the changing American political/cultural atmosphere we can see how current events/political motivations altered the depiction of the Holocaust.

### CONCURRENT PRESENTATIONS 2 • 9:55 AM - 11:10 AM

#### 2A • BIOLOGY MATHEMATICS MODELING 2 IS

MODELING 2 ISC 115 FACULTY SPONSOR AND SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY

#### An Algebraic and Topological Approach to Studying Molecular Pathway Networks of Cancers with Applications to Treatment JUSTEN GEDDES

Cancer patients benefit from precise treatment strategies that result in fewer adverse side effects. One such treatment strategy, protein inhibition therapy, inhibits specific proteins in order to disrupt signaling cascades, resulting in the death of cancerous cells. Expanding previous work, signaling cascades were analyzed using graph theory to determine a metric that correlates network complexity to the 5-year survival rate of different types of cancer. Additionally, a simple algorithm was produced to determine, using this metric on an individual basis, which protein would result in the greatest increase in survivability when inhibited. Using this metric, more precise protein inhibition treatment plans can be made on a patient by patient basis. This metric motivates further exploration to develop more general and widely applicable protein inhibition treatment strategies for each type of cancer.

#### Effect of External Factors on the Prevalence of Ebola During the 2014 Outbreak in West Africa PATRICIO CARRASCO, PATRICIO CARRASCO, JOHNNY CHEN, JENNIFER CONFLITTI

The 2014 West African Ebola Virus Disease (EVD) outbreak was a major epidemic of the 21st century. The purpose of this study is to test the effects of external factors on EVD transmission through West Africa. Our methods include developing a differential equation model (SIR model) parameterized using data available from the 2014 outbreak and a nonlinear least squares analysis to predict the spread of EVD. Because of the rampant nature of Ebola (R<sub>0</sub>=2), the SIR model shows that a large portion of the population will move through the infected class to the recovered class. As this was not the case, the basic SIR model may not be an accurate representation of Ebola. The predictive model for Sierra Leone suggests the outbreak will reach an equilibria at approximately 12,800 cases. An additional application of the same predictive model to data from Guinea and Liberia shows the outbreak stabilizing at approximately 3,800 and 12,700 cases respectively. The reported case count of 14,122 from Sierra Leone was larger than what the model predicts. The addition of parameters representing different cultural and health responses to the differential equation model suggests an increased prevalence of EVD in Sierra Leone.

#### Analysis of Factors Affecting Multi-Drug-Resistant Tuberculosis in Susceptible Populations ADAM WEAVER, ADAM WEAVER, BETHANNA JONES, LARA FINNERTY-HAGGERTY

Tuberculosis (TB) is a disease caused by Mycobacterium tuberculosis bacteria. Today, many people are infected with multi-drug-resistant TB (MDR-TB), a strain resistant to at least two first-line anti-TB drugs. We utilize an SIR differential equation model to study the rate that individuals develop resistance, parameterized with data from several countries to compare these dynamics to a real system. Additionally, we use a difference equation model incorporating a vaccinated class to model the effectiveness of Bacillus Calmette-Guerin (BCG) vaccination on disease prevalence. We find as the rate  $\sigma$  that infected individuals acquire MDR-TB increases, the exposed, infected, and recovered classes decrease in population, Additionally, the populations of resistant and deceased classes have optimal sizes. According to our difference equation model, vaccination lessens TB death , however the BCG vaccine only lasts 15 years, causing the vaccination class to plateau. Hence, more rigorous vaccination is needed after 15 years to extend its effectiveness. Additionally, our differential model indicates that there exists a rate of first-line resistance development that causes populations to have maximum deaths as the disease progresses. If a country approaches a  $\sigma$ value of 1.175\*10-5, the country is at risk.

#### 2B • BUSINESS SOUTH 340 HONORS RESEARCH IN ECONOMICS

FACULTY SPONSOR AND SESSION CHAIR: LEONIE STONE, BUSINESS

#### Effects of Federal Reserve Asset-Backed Securities on Related Financial Markets

#### EMILY HURLBUTT

During the financial crisis, the Federal Reserve pursued unconventional monetary policies including large-scale asset purchases (LSAP). These unconventional LSAPs included agency mortgagebacked securities (MBS). The MBS market is much smaller than the Treasury market, much less liquid, and more difficult to price. There is also a component of credit risk, as opposed to the safety of Treasuries. Besides the clear effect of upward price pressure and more liquidity in this market, the Fed MBS purchases also had implications for the broader credit market. Before the crisis, the popularity of MBS created a demand for corporate bonds to hedge the associated convexity risk. The Fed does not use such hedging procedures. As much as 50% of certain MBS tranches have been purchased by the System Open Markets Account (SOMA), which created price and volatility distortion in both the MBS market and in the bond and credit default swap (CDS) markets. This paper uses data from the SOMA to evaluate credit spreads, liquidity, and volatility conditions both prior to and following the LSAP actions of the Fed for agency MBS, bonds and CDS.

#### The Impact of Tourism on Rural Economic Development in the Finger Lakes: Letchworth Gateway Villages

#### SARAH COMERFORD

With its vast wineries, booming culinary industry, and diverse nature and leisure choices, including the number one state park in the nation, Letchworth State Park, the Finger Lakes Region is a top tourist destination in New York. Recently, a economic development related project. Letchworth Gateway Villages, has been funded by a USDA grant, with the goal of catalyzing economic development in Letchworth State Park's surrounding communities, many of which have been characterized by slow or negative economic growth in recent decades. This paper explores the impact of the tourism industry on rural economic development in the Finger Lakes, and assesses the challenges that the region faces. I examine the targets of the Letchworth Gateway Villages project and evaluate both the impact of the program to date and prospects for success in achieving the broader goals of this development activity.

#### Mother Knows Best: Parental Mediation in Dating Decisions and Millennial Attitudes on Marriage SYDNEY LEVINE

Millennials have been cited to prioritize marriage differently than previous generations and tend to marry slower than their parents in general. There is plenty of speculation about how online dating

dating, and very little talk of how parental relationships might play into all of this. This paper seeks to determine a number of things about the way that millennials think about marriage and dating. First, I examine if millennials do value marriage and how their valuation might influence how soon they are trying to marry. Then, I examine how parental mediation might influence attitudes about marriage and what they look for in a partner. Finally, I look at how different qualities surrounding their relationship with their parents, their valuation of marriage, and other factors might influence a millennial's openness to allowing their parents to mediate in dating decisions by setting them up with a potential partner. This paper also seeks to understand how online dating apps might be influencing attitudes and how usage could predict behaviors.

apps are affecting millennial's attitudes about

#### The Linkage Between Wage and Productivity Growth: Evidence from International Data GRAHAM HARRISON

Since 1973, U.S. wage growth has lagged behind productivity growth, a pattern that has also been observed in other economies. Bivens and Mishel (2015) and others have claimed that this divergence of wage and productivity growth is evidence that the link between productivity and wages is broken and thus that increases in productivity growth would not result in an increases in wage growth for the average American. This is particularly important because breaking the wage-productivity link would tend to further perpetuate income inequality as only the top earners would reap the benefits of productivity gains. However, recent research, including that of Stansbury and Summers (2017), supports the existence of a continued relationship between productivity and wages and suggests wage growth is being dampened by other factors. This paper considers the relationship between productivity growth and wage growth for major economies, exploring the dampening effects of technological change and its effect on labor share of income, globalization, and other factors.

#### 2C • CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT DISCOVERY CAFÉ BAILEY 101 FACULTY SPONSOR: JOSEPH COPE, CENTER FOR

INQUIRY, DISCOVERY & DEVELOPMENT FACULTY SPONSOR AND SESSION CHAIR DAVID PARFITT, CENTER FOR COMMUNITY WELL-BEING

#### Promoting Trust Between Scientists and the Public PATRICK BUCKLEY

Stop by whenever you can for the first Discovery Cafe event on the SUNY Geneseo campus! This casual event is open to all GREAT Day attendees and the public. Attendees of this event will be introduced to the current state of public trust in science and why they should care about it, all while learning how they can work to improve this critical relationship. The event will encourage audience participation and will be a fun, informal break from a day full of lectures, presentations, and posters. This project was funded by the James Houston '80 Ambassadorship in Innovation.

### 2D • CHEMISTRY ISC 131

#### CHEMISTRY HONORS PRESENTATIONS

SESSION CHAIR: KAZU YOKOYAMA, CHEMISTRY

#### Salt Formation vs. Cocrystallization: An Exploration of the $\Delta p K_a$ Rule for a Series of Aromatic Acids and Bases KYLE POWERS

FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY The  $\Delta p K_a$  rule is used in determining whether hydrogen bonded molecules form a salt or cocrystal. If the difference in the  $pK_a$ 's of the acid and protonated base is greater than 3, proton transfer results in a salt forming. If the  $\Delta p K_a$  is less than 1, the acid and base remain unionized and form a cocrystal. 1,2-diaminobenzene (pKa = 4.57) or 4,5dimethyl-1,2-diaminobenzene ( $pK_a = 5.12$ ) were mixed with 2-picolinic acid ( $pK_a = 1.01$ ) or benzoic acid ( $pK_a = 4.20$ ), and the resulting compounds were studied by <sup>1</sup>H NMR spectroscopy, X-ray crystallography, and Hirshfeld surface analysis. Consistent with the  $\Delta p K_a$  rule, a combination of 1,2-diaminobenzene and benzoic acid results in a co-crystal. Hydrogen bonds between molecules resulted in a paddlewheel structure along the caxis of the unit cell, while hydrogen bonds and C-H $\cdots$  $\pi$  interactions between molecules contributed to non-linear chains of benzoic acid.  $\pi \cdots \pi$  stacking between benzoic acid chains is also observed. When mixed with 2-picolinic acid, 1,2diaminobenzene and 4,5-dimethyl-1,2diaminobenzene form isostructural salts, which is consistent with the  $\Delta p K_a$  rule. Linear chains of 2picolinate ions resulting from alternating hydrogen bonds and  $\text{CH}{\cdots}\pi$  interactions with cations are observed. The chains of anions are joined as well due to  $\pi \cdots \pi$  stacking.

#### Effect of Chain Length on Gelation Ability of Several Biphenyl Longchain Diesters SHAWN MOORE

FACULTY SPONSOR: H. CRISTINA GEIGER, CHEMISTRY

Two biphenyl methyl and ethyl diester derivatives of six carbon chain length (BBO6R) were synthesized and the gelation properties of the compounds were studied. The structures of these molecules were confirmed using <sup>1</sup>H NMR spectroscopy. BBO6Me forms stable gels at 1.5% w/w in a variety of alcohol solvents while BBO6Et does not. The modes of stacking and the nature of attractions between the gelator molecules were investigated using circular dichroism (CD), UV-Vis, and fluorescence spectroscopies. Gelation was found to be dependent upon temperature of formation, physical disruptions, rate of formation, and structure of the gelator. The solid-state structures of BBO6Et and BBO6Me were determined by X-Ray crystallography. The strengths of the intermolecular interactions in these isostructural compounds were explored in an effort to understand why the methyl ester is a gelator, but the ethyl ester is not under the conditions explored. An examination of the

supramolecular structure and differences in intermolecular interaction energies provide a possible reason for the difference in gelation ability. In addition, a metal-organic framework (MOF) has been synthesized from a bisphenol derivative of benzimidazole and zinc acetate. Its structure was determined using X-Ray crystallography. MOFs have promising applications in small molecule storage. *Selected for presentation at American Chemical Society National Meeting, New Orleans, LA.* 

### Discovering Unseen Blinking Behavior in Core-Only 0D, 1D, and 2D CdSe Nano-Materials Using an

### Air-Free Approach

BRANDON MEHLENBACHER

FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

The blinking statistics of CdSe nanoparticles (NPs) of various shapes were investigated utilizing a novel, air-free approach. Blinking traces from spherical quantum dots (QDs), cylindrical quantum -rods (QRs), and planar quantum platelets (QPs) were obtained and used to generate "power law" plots of ON and OFF event durations. by varying the confining dimension between 2 and 6nm. Other dimensions were also varied (eg, QR length, QP lateral dimension), producing NPs with surface areas that ranged from 10-3000 nm<sup>2</sup>. We found that the mon values from the probability distributions decreased with size but did not relate to the shapes of the NPs. As each NPs' confined dimension was increased, time spent in the "grey" states and "OFF" states linearly increased and decreased respectively. In contrast, there was a weak trend as surface area increased: time spent in "grey" states and "OFF" states insignificantly increased and decreased respectively. Blinking mechanisms are discussed and compared to the results

#### 2E • COMMUNICATION BAILEY 105 SPEECH & MEDIA RESEARCH PODCASTS

FACULTY SPONSOR: LEE PIERCE, COMMUNICATION SESSION CHAIR: ERIK BUCKINGHAM

### That Paradox of Dialogue and Dissemination in Celebrity Social Media Culture

KATIE JOYCE

This podcast investigates the way that relationships are formed virtually among strangers on social media. Specifically, the research project argues that social media is paradoxical, in that it expects many relationships to be formed but for each relationship to somehow remain deep. This desire for the impossible – depth and breadth--is especially problematic for celebrities who depend on social media to build their brand and support themselves. One of the implications is that the pressure can exacerbate self-destructive tendencies among social media celebrities.

#### Nix the Niche: The Ringer, Geeking Out, and the Future of Branding

#### CAL HOAG

Many media outlets have carved out audiences by creating content that just covers one specific subject. According to ESPNfounder.com the company was founded by Bill Rasmussen in 1979 and was just meant to cover all the sports in the state of Connecticut. Flash forward to today and ESPN now bills itself as "the worldwide leader in sports" and is trusted by millions of people worldwide to provide any type of sports content imaginable. Carving out a niche audience like that and targeting a specific demographic is a tried and true business strategy for media companies, think about E! News or Mashable, but is it the only one? In this podcast, I argue that if a media outlet's content is interesting enough, they will be able to carve out an audience by writing about whatever they want. As illustrated by a case study of theringer.com, "geeking out" is emerging as a new marketing strategy worthy of serious consideration by aspiring brands and content creators.

#### Guys We F\*&#@d: Podcasting, Social Media, and the Shifting Sands of Public Trust RACHEL KATZ

Who is an expert? What makes a person credible? How does the public know whom to believe? Traditionally these questions have stemmed from positions in authority and faith in a system of expertise. The rise of social media and crosscultural socialization has challenged these systems and led to a crisis of public trust. This research podcast explores the issue of public trust and, analyzing a case study from the popular podcast, Guys We F'd, argues that Guys' popularity signals a shift from effective to affective trust as the measure of public confidence in experts.

#### The Tyranny of Face-to-Face Communication for People with Disabilities DANAH SPINK

We often hear that online communication is ruining how we speak face-to-face, that you can't create strong relationships online, or that face-toface communication leads to fewer misinterpretations or misunderstandings. But fewer misinterpretations for whom? Someone who is deaf? Someone with social anxiety? Someone on the autism spectrum? This research podcast argues that glorifying face-to-face communication couches ableist expectations and norms that disenfranchise sub-cultures and populations already facing considerable communication challenges.

#### Hookup Culture, Message Ambiguity, and the Importance of Clear Expectations SHANNON KEENAN

Hookup culture has become rampant on college campuses and yet students report widespread dissatisfaction with this emergent trend. In itself neither good nor bad, hookup culture is problematic, I argue in this research podcast, because the culture thrives on suppresses the explicit expression of expectations--a fundamental part of ethical communication--as anathema to an ethos of casual pleasure. This research podcast explores the rise of hookup culture and the roots of dissatisfaction stemming from ambiguity, implicit expectation-setting, and misattribution.

#### Playlists, Self-Presentation, and Personal Branding DENZEL FLOWERS

Music plays a fundamental role in the discovery, cultivation, and presentation of self. Yet, social media platforms such as Spotify and SoundCloud have not been part of the Social Media revolution of the last decade to the same degree as discoursedependent social media such as Instagram and Facebook. This research podcast argues that playlists are, ultimately, a form of social media and explores how playlist creation and sharing might serve as a valuable tool for personal branding.

#### 2F • EDUCATION NEWTON 204 THE L.I.V.E.S. PROGRAM PRESENTS...

FACULTY SPONSOR AND SESSION CHAIR: LEIGH O'BRIEN, EDUCATION

#### Our Strengths and Our Struggles as We All Adjust to College Life

LAURA NEWTON, CHELSI WATERS, SHAYNE COLLINS, ARIANA LEE, CHRISTINA LUONGO, ALICIA TAUSCHER

The first-year students in the LIVES program surveyed SUNY Geneseo students regarding their strengths and struggles. The LIVES students then compared and contrasted the survey responses with their own strengths and struggles. Survey results showed that the two groups of students had many strengths and struggles in common, suggesting that college students have quite similar experiences, regardless of "ability."

# Where We are and Where We are Going...

#### ELIZA COX, KATRINA FINCH, VIRGINIA ELEY, ALEXIS HERMAN, JULIE JOHNSTON, DYLAN MCCLURG, JORDON MCKINSEY, LEAH RHOADS, THOMAS COBURN

The second- and third-year students in the LIVES Program will share their experiences in their audit classes and internships, and the strategies they have employed to be successful in their endeavors at SUNY Geneseo. These will build on their individual "road maps," which show where they began, where they are now, and where they hope to go in the future.

#### How the LIVES Program Prepared Me for Life After College

#### RICHARD JOHANNES, JENNIFER PEARL, JAMES SNYDER, SUZI LOMBARDO, CODY BROCK-SCHLAGETER

This presentation will summarize the students' time in the LIVES program (3-4 years) by addressing where they are headed and how the LIVES Program has helped them to reach their dreams. Each student will share the knowledge, skills, and dispositions she or he has learned in their LIVES classes, audit classes, internships, and/or social activities, and show how s/he has grown from their first year to their last.

#### 2G • EDGAR FELLOWS PANEL 5

BAILEY 102 SESSION CHAIR: LISA MEYER, EDGAR FELLOWS

#### The Effect of Social Acceptance on the Development of Trait Hope in Same-Gender Attracted Students GIANNA CIMINELLI

FACULTY SPONSOR: JOAN ZOOK, PSYCHOLOGY This study sets out to examine the effect different forms of social acceptance and rejection on college students who are gay, lesbian, bisexual, or pansexual. It surveys same-gender attracted Geneseo students on their experiences of belonging, ostracism, and harassment, both currently and retrospectively. The study primarily evaluates the development of hope as a character trait. The body of research on psychological adjustment in same-gender attracted students suggests better outcomes for youth who consolidate their identities at a young age, even when this leads to peer victimization. Therefore, I expect to find that high school experiences of social acceptance or rejection better predict hope in college students than do college experiences. In particular. I anticipate a correlation between high school harassment and trait hope in college. I also expect that ostracism at both the high school and college level will correlate with lower trait hope than both acceptance and harassment. I further evaluate whether the relationship between social experiences and hope manifests differently in multiple-gender attracted students as opposed to exclusively same-gender attracted students.

#### Yemen: Power, Discourse, War S RACHEL GDULA

FACULTY SPONSOR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In order to truly address problems related to the Yemeni Civil War in a way that is best for all actors involved, strategies should not be focused on balance of power politics or sectarianism, but should prioritize a stable Yemen. However, the policies and discourse of the main foreign actors involved in Yemen run directly contrary to this ideal. The intersection of balance of power politics and sectarian media discourse seems to trap these actors into a losing cycle of bad policies. To develop my argument, I will begin with an examination of the discourse and policies of the U.S., Saudi Arabia, and Iran on Yemen, to show how an unstable Yemen has allowed balance of power politics to emerge and intensify. Then I will analyze coverage of the Yemeni Civil War in The New York Times, Asharq al-Awsat, and Tehran Times to show how the media pushes a narrative of sectarianism. I will then appeal to constructivist theories of framing and normative threats to illustrate how the combination of balance of power politics and media sectarianism traps actors in the losing cycle. Finally, I will suggest better ways for these actors to address the crisis that prioritize Yemen's stability.

#### Analysis of Geneseo Fire Department's EMS Data to Improve Scheduling Efficiency and Member Preparedness

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Geneseo Fire Department is a volunteer-run agency that serves both the SUNY Geneseo campus and the surrounding community. With limited volunteers, it is of great interest to the department to schedule its members during periods with the highest frequency of calls to best serve the public and earn revenue to sustain department operations. I arranged data gathered by the department after each EMS call to determine when the department receives the most calls as well as how the distribution of calls changes throughout the year. Additionally, I predicted the number of each specific call type (abdominal pain, allergic reaction, etc.) the department can expect to receive in the future by utilizing past monthly frequencies of each call type along with several time series forecasting methods. Results indicate that overall call frequencies and certain call types are unevenly distributed throughout the day, week, and year, necessitating a schedule that advises members on how to prioritize shifts. With this analysis, members can also recognize which types of calls they are likely to encounter during a particular two-hour period, allowing for increased preparedness and more focused training for newer members.

#### 2H • EDGAR FELLOWS PANEL 6 BAILEY 203

SESSION CHAIR: DAVID LEVY, PHILOSOPHY

#### Ni Una Menos: A New Movement Against Gender Violence in Latin America S SAMANTHA MARTIN

FACULTY SPONSOR: JENNIFER GUZMAN, ANTHROPOLOGY

In this presentation I discuss my analysis of ethnographic research conducted in Valparaíso, Chile and Buenos Aires, Argentina during June and July of 2017. The study seeks to capture the goals, methods, and effectiveness of Ni Una Menos, a new movement against gender violence in Latin America. Gender violence is abuse in any form, from catcalls on one end of the spectrum to the more extreme manifestation of femicide. Participant observation during a protest march in Argentina supplements interviews with feminist activists and representatives of organizations against sexual violence in Chile. Because Chile and Argentina have considerable youth involvement in protests concerning social justice issues, this project also investigates students' perspectives on the movement's efficacy and shortcomings. Research into the Argentine Ni Una Menos Facebook group complements my fieldwork as I examine the sociolinguistic negotiation of gender in the online community of practice. A key objective is to understand the obstacles facing the movement in the sociocultural context of a traditionally machista society. Specifically, my research addresses the issue of inclusivity: to what degree does the movement's broad scope gain supporters or ostracize potential allies? This project was funded by the Frank Vafier '74 Ambassadorship in Leadership. Selected for presentation at Rochester Academy of Science 44th Annual Fall Scientific Paper Session, Pittsford, NY; 78th Annual Meeting of the Society for Applied Anthropology, Philadelphia, PA; and SUNY Undergraduate Research Conference at Monroe Community College.

#### The Collateral Damage of Unemployment Amongst Exconvicts LAUREN SALZANO FACULTY SPONSOR: CHRISTOPHER ANNALA,

BUSINESS

Ex-convicts experience more difficulty in obtaining steady employment than minorities, undocumented immigrants, or any other disadvantaged group. Despite the fact that many ex-offenders hold low-paying jobs, the ex-offender population represents significant lost economic output. On the micro-level, an ex-offender and his or her family have statistically low odds of becoming a productive and successful member of society. This paper examines the collateral damage of unemployment on ex-offenders, their families, and society. By running multiple regression analyses, this paper tests the significance of numerous variables as a function of collateral damage amongst ex-convicts.

#### Public Service Advertising for Foster and Adoptive Family Resources HUNTER SIMMS

FACULTY SPONSOR: ELAINE CLEETON, SOCIOLOGY The purpose of my project is to raise awareness for resources that are available to Foster and Adoptive children and parents. Children in the child welfare system often have lasting behavioral, emotional and social problems due to the trauma they experienced before being taken into the system. These children often require different parenting strategies than a child who has not experienced early childhood trauma. The Adoptive and Foster Family Coalition of New York (AFFCNY) provides support, information and advocacy for these children and their foster or adoptive parents. To raise awareness of these resources, I developed a radio Public Service Advertising (PSA) campaign for AFFCNY. Beginning with a PSA on a reframing parenting class they offered, we then developed a less specific PSA campaign to raise awareness for the organization as a whole. These PSAs received a lot of valuable airtime for free, and several families who reached out to the organization over the course of the campaign said that they heard about AFFCNY from radio PSAs.

#### 2I • EDGAR FELLOWS PANEL 7

BAILEY 103

SESSION CHAIR: AARON STEINHAUER, PHYSICS & ASTRONOMY

#### Bitcoin's Little Brother: Blockchain Accounting and the Future of Epistemic Authority BENJAMIN JUCHNIEWICZ

FACULTY SPONSOR: HARRY HOWE, BUSINESS We've all heard of blockchain, but how many of us really know what it is? More importantly, what it can do? In this presentation I will succinctly address the former question and discuss a solution to the latter which, though quite specific to the accounting industry, will have a significant impact

on financial markets around the globe. The blockchain is an immutable record of transactions, and this immutability will provide incalculable benefit to preparers and auditors of financial statements while providing resolute epistemic assurance to users of these statements. This breakthrough technology may usher in an era of financial interconnectedness in which auditors can provide definitive and immediate attestation regarding the accuracy of accounting records across entire financial sectors. I will begin by discussing some of the technical components of blockchain and its relationship to cryptocurrencies, and will then describe current issues in the auditing industry and how blockchain may alleviate them. To conclude, I will briefly discuss the ethical dilemma surrounding proactive legislation and some of the other benefits the blockchain may offer.

#### A Meta-analysis of Literary Criticism on Shakespeare's Sonnets CASEY VINCELETTE

FACULTY SPONSOR: RON HERZMAN, ENGLISH During the course of this project, I reviewed the body of criticism about Shakespeare's sonnets for the past 500 years, attending to voices that have been the most influential and how they have shaped one another. I applied communication perspectives both interpersonally and intrapersonally among the scholarly communities I examined. I interviewed several sources on literary-based communities. As a product, I developed a website to exhibit and physically link my (sometimes tangential) findings.

# Eds, Meds, and their Role in the Gentrification of Rust Belt Cities LYNN MYERS

FACULTY SPONSOR: SETH CAVELLO, GEOGRAPHY Cities in America's industrial heartland are struggling. Once shining beacons of opportunity, Pittsburgh, Philadelphia, Buffalo, and Baltimore now constitute part of the "Rust Belt" - an unfortunate moniker popularized in the 1970s for its description of the failure of the industrial city. Steel cities gave way to La-La lands, and politicians were forced to confront the idea that, even in an age of rapid urbanization, cities still had to compete for residents, and the Rust Belt was losing. To combat this decline, many of these politicians are embracing what is essentially the opposite of the industrial formula – a dependence on universities and hospitals (eds and meds). Unfortunately, however, the economies inspired by eds and meds support a different population than the economies supported by blue-collar industries. As seen in Pittsburgh, Philadelphia, Buffalo, and Baltimore, an increased investment in eds and meds has resulted in the gentrification of thousands of low-income residents who are overlooked in this post-industrial transformation, thereby raising the following questions: How do eds and meds cause gentrification?, How does gentrification harm the benefits that eds and meds have to offer?, and How can eds and meds break out of gentrifying tendencies and promote sustainable, equitable growth?

#### 2J • EDGAR FELLOWS PANEL 8

BAILEY 202

SESSION CHAIR: SHUO CHEN, BUSINESS

#### Developing a Bird Song Recognition System Using Wavelet Components and Simple Machine Learning Techniques

#### JEFFREY DOSER

FACULTY SPONSOR: DAVID MEISEL, PHYSICS & ASTRONOMY

Climate change is perhaps the most pressing issue in the biological sciences. Thus, researchers must devise novel and inexpensive ways to monitor the impact human-induced climate change is having on the natural world. The presence or absence of certain bird species can provide valuable information about the environment in which they live, and thus it is logical to use them as indicators of environmental health. We developed a prototype of an inexpensive acoustic recorder using a Raspberry Pi that identifies individual bird species in soundscape recordings. This automated recorder allows researchers to obtain accurate information about an environment without the constant monitoring of the recorder by a human. We utilized wavelet components of the songs in conjunction with simple machine learning techniques in the Wolfram language to obtain the identification of any common bird species in a soundscape recording of western New York.

#### String Algorithms with Computational Biology Applications JULIA WITKOWSKI

FACULTY SPONSOR: ANTHONY MACULA, MATHEMATICS

Finding similarities between genes from different species can elucidate structural and functional similarities between them. When comparing two strands of DNA, one might look at the longest sequence of consecutive base pairs that the two strands share, or the longest common substring. However, due to insertions, substitutions, and deletions in DNA over time, a shared sequence may not be of consecutive base pairs, which motivates the search for the longest common subsequence between the two strands. Longest common subsequence is also desirable in finding a thermodynamically favorable sequence alignment of two strands of DNA. These alignments have multiple algorithms which will be discussed.

#### Building Fiction out of Inspiration MARISSA CANARELLI

FACULTY SPONSOR: KRISTEN GENTRY, ENGLISH Every piece of short fiction began as something simple: a vague spark of interest or a half-baked idea. But how does a writer take those early inspirations and build a story? After spending nearly a year working on a collection of short stories, I have gone through this process many times. Here, I aim to break down the inspirations for specific works in my collection and provide a description of how that inspiration shaped the work, from plot to character to setting. Through this. I hope to demonstrate the great variety of initial ideas, both specific and frustratingly vague, that can picked up when least expected and how a writer can use them to their advantage when crafting a piece of short fiction.

#### 2K • ENGLISH WELLES 216 INSPECTING THE ROUND TABLE: ASPECTS OF MALORY'S LE MORTE D'ARTHUR

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH SESSION CHAIR: CODY AUSTIN

#### Name, Identity, and Reputation in Arthurian Romance ALICE LEE

This paper looks at the connection between name, identity, and reputation in Arthurian Romance, primarily in Sir Thomas Malory's *Le Morte d'Arthur*, and specifically at effects of revealing a previously hidden name for a knight and how that then plays a major role in the reputation or worship of said knights, which is very much linked to personal action. This is mostly examined through actions in connection to name, identity, and reputation, of different characters within *Le Morte d'Arthur* but also draws on previous published research scholars have done on this or similar subjects in Arthurian Romance.

#### Christianity, Chivalry, and Palomides's Example ERIN LIEBERMAN

Palomides is the Saracen knight who finds himself interacting with many of the famed knights of the Round Table. His presence with Le Morte d'Arthur prompts questions in regards to the principles of chivalry and the Christian ideology surrounding this code of conduct. By understanding the character of Palomides and his role within the narrative, a better understanding of Malory and how he viewed people other than himself can be seen. As a non-Christian actor in the story who converts to a Christian in the midst of the tales, Palomides's example is one that can be expanded into a greater understanding beyond the character. In Le Morte d'Arthur, Palomides is frequently seen as an "other," but it is not just how other characters who interact with him see him, but also how Palomides sees himself which provides context to Malory's world. The Christian ideology that Malory has when writing Le Morte d'Arthur can be better examined and understood by having an understanding of the frequently forgotten Palomides.

#### Blood is Not as Thick as the Water of the Court: How the Devaluing of Family in Malory's *Le Morte d'Arthur* Heralds the End of Arthurian Society

#### MARGARET PIGLIACELLI

This paper discusses the many complex and interconnecting relationships within Sir Thomas Malory's *Le Morte d'Arthur*. These relationships inevitably cause conflicts as the responsibilities of each relationship forces the individual to prioritize certain relationships over others. As the Knights of the Round Table are groomed to value their friendships with their fellow knights over their relationships with their fathers, sons, and brothers, entire dynasties, as well as Arthurian society as a whole, crumbles.

### 2L • HISTORY WELLES 119 ADVANCING THE DIGITAL

# HUMANITIES @ GENESEO PANEL 2

FACULTY SPONSOR: JOE COPE, HISTORY SESSION CHAIR: YVONNE SEALE, HISTORY

#### Digital Story-Mapping and the Legacy of Cornelia Adair S VERONICA TAGLIA

My project draws from archival research to create a website mapping the transatlantic narrative of Cornelia Wadsworth Adair (1837-1921). I collected information from the personal letters. political/legal documents and diaries of Wadsworth Adair available at Geneseo, the University of Texas, Glenveagh Castle in Donegal, Ireland, and the National Library of Ireland in Dublin. Ultimately, I examine the way that Cornelia Wadsworth Adair's history intersects with the legacies of the land establishments she helped to create, including Glenveagh Castle and the JA Ranch, a large cattle ranch that still operates in Southwestern Texas. Thematically, my research approaches larger questions of transnational identity, gendered legacies, land ownership, and early environmentalist practices at the turn of the 20th century. This project culminates in a website operated by Omeka that includes a map, short biography, and catalog of source material to create a publicly accessible overview of Wadsworth Adair's life and posthumous legacy.

### Between a Discipline and a Hard Place: Navigating the Academic Valley between Economics and the Humanities

#### BRENDAN MAHONEY

FACULTY SPONSOR: LEONIE STONE, BUSINESS KIRK ANNE, COMPUTING AND INFORMATION TECHNOLGY

Whether it's driving, cooking, or studying, everyone has their own way of doing things. Performing research is no exception, and the academic community is currently home to a diverse array of methods for investigating frequently-similar questions. These methods, though, are a double-edged sword. They allow researchers to carve out distinct perspectives on a number of issues, but the disciplines that form around them impose barriers to academic thought and action, not to mention barriers to conversation with other disciplines. This project emerged in part as an effort to break down some of the barriers currently separating economic theory and cultural studies, and it ultimately found a home in the interdisciplinary field of digital humanities. Using computational and network science methods, I investigated the impact that changes in the production and content of popular movies had on American political thought — and vice versa. This involved the construction of several indices to measure these phenomena, since there is no standard measure of ideology in movie production or in movies themselves. Ideally, these research questions and methods can be utilized for future scholarly inquiries.

#### 2M • HISTORY

WELLES 133

#### HISTORY HONORS PROJECTS - US HISTORY

SESSION CHAIR: JOE COPE, HISTORY

#### The Poles of Buffalo: The Social and Cultural Evolution of an Eastern European Other DEREK KACZOROWSKI FACULTY SPONSOR: RYAN JONES, HISTORY

This paper examines the gradual evolution of the Poles' social and cultural integration into the community of Buffalo from the 1870s through 1920. The research focuses on all three levels of social interaction and cultural engagement: micro, meso, and macro. The paper argues that the Poles were required to formulate ethnic intragroup relations prior to developing intergroup relations among other members of the Buffalo community. The Poles' intragroup religious based conflicts and the greater community's rejection of the ethnic community stimulated the formation of a dual ethnic and class consciousness among the Poles. The working class interactions and relationships were disregarded by the upper level members of Buffalo's community, but the masculinized Poles gained a social status through intergroup class relations. However, a national strive for nationalism contributed to the eventual Americanization, and social acceptance of the Polish ethnic Other into Buffalo. The paper illustrates the transformation from an immigrant identity to an American identity by focusing on the accounts of non-members of the Polish community.

#### Gender and Venereal Disease in Early Twentieth Century Rochester, NY

#### ALLISON MAIER

FACULTY SPONSOR: RYAN JONES, HISTORY

Due to the sexual nature of venereal disease (VD), historical dialogue surrounding the topic often involves gendered or moral components. Four common attitudes permeate the discussion about and control of VD during the first half of the twentieth century. The immoral prostitute vs. the innocent wife, an emphasis on male willpower to resist temptation, the introduction of redemption for those who contracted the diseases, and the association of uncontrolled VD with societal degradation are familiar rhetoric for Western and Western-influenced countries during this time period. The unique method of venereal disease control practiced in Rochester, New York during the early twentieth century-which relied heavily on the threat of police involvement-underscores the prevalence of those four attitudes in this otherwise average American city.

#### Redefining Rebellion: Riots, "Reverse Riots," and the Rise of the Carceral State TAYLOR MCPHERSON

#### FACULTY SPONSOR: EMILYE CROSBY, HISTORY The victories of the Civil Rights Movement through the passage of the Civil Rights Act of 1964 promised a change in American society and also challenged State authority. In response, the State refortified its carceral capacity to combat the newly affirmed

legitimacy of African American protesters. This carceral capacity, re-imagined after President Nixon's declaration of a War on Drugs in 1971, needed publicized incidents of African American criminality to justify expansion. The year 1971 also saw a national investment and involvement of para-militarized police at rebellion sites, most infamously documented in the Attica prison riot where 38 people were killed in the retaking one bloody Monday morning. By analyzing riots both leading up to and after the carnage at Attica, African Americans in prisons and in public felt the increasing and controlling presence of the State as never before. In the creation of a veritable police state, para-militarized police forces developed into a legitimized arm of brutality, or what might be referred to as a "Reverse riot strategem" of the State to block Civil Rights challenges to its power. "Reverse Riots" ultimately played a decisive role in forming our modern Carceral State and nationwide spread of mass incarceration.

#### 2N • MATHEMATICS WELLES 24 TOPICS IN THE HISTORY OF MATHEMATICS 2

FACULTY SPONSOR AND SESSION CHAIR: GARY TOWSLEY, MATHEMATICS

#### Pythagoras and His Society's Lasting Influence on Mathematics AMANDA WILLIAMS

FACULTY SPONSOR: GARY TOWSLEY, MATHEMATICS

I am researching Pythagoras and his society's lasting influence on mathematics. First I will start by explaining who Pythagoras was, what era he lived in, and what kind of a society he created. I will explain his follower's beliefs and the core values of that society under Pythagoras concerning how mathematics relates to everything around us. Then I will go further into detail about specific number theories the Pythagoreans observed, such as figurate and perfect numbers. Geometrical observations will also be explained. Finally, I will describe what mathematical findings led to Pythagoras's proof of the Pythagorean theorem, and the other proofs that have come about since the first one.

#### **Ancient Greek Astronomical**

#### Mechanisms

#### BRETT HARLING

FACULTY SPONSOR: GARY TOWSLEY, MATHEMATICS

An in depth study of ancient Greek mechanisms such as the Antikythera model and Archimedes sphere and how they were used to predict celestial events.

#### Zero in Ancient Indian Mathematics CHRIS MONCLOVA

I will explore the use of zero within ancient Indian mathematics. Many civilizations had concepts of zero but the ancient Indians were the first to use an actual '0' to hold places. This led to easier computations as well as more clarity when computing. Nonetheless, the use of zero made it over to America and we discovered how to use zero in our own ways.

#### 20 • MATHEMATICS SOUTH 338 MATH RESEARCH WEEKEND WITH DR. PAMELA HARRIS, GOING DEEPER THAN INVISIBLE LATTICE POINTS

FACULTY SPONSOR AND SESSION CHAIR: CAROLINE HADDAD, MATHEMATICS

#### Weak b-Visibility (Part 1 of 3) ALLIE AIRD, BARBARA SCHWEITZER

Part 1 of 3: You're playing frisbee with a group of friends. You're throwing the frisbee back and forth between you and another person, when someone stands directly between you two. Because you can no longer throw the frisbee straight to your friend, they are now "invisible." We can solve this problem in three ways; you could move yourself so that no person is standing in your way, you could throw the frisbee along a curved line, or you could do both. In this talk, we will explore weak b-visibility, which would help find different solutions to the frisbee problem. Research done during Math Research Weekend with Dr. Pamela Harris, Williams College.

#### Weak b-visibility (Part 2 of 3) ALBERTO ALONSO, ERIC PIATO

Part 2 of 3: Recall the frisbee problem: where we are trying to throw the frisbee to a person located on an integer lattice point in a rectangular region, but an opponent is standing on the straight line between us and out teammate. Since the disk cannot be thrown in a straight line our team member is said to be invisible. Thus, the disk must be thrown with a curved trajectory. Using the definitions given by Goins, Harris, et. al, we give necessary and sufficient conditions for determining if a point in a rectangular array is weakly b-visible by an external point. We also show that for any point P outside of the array, there exists a  $b \ge 1$  such that every point in the array is weakly b-visible from P. Research done during Math Research Weekend with Dr. Pamela Harris, Williams College.

#### Weak b-visibility (Part 3 of 3) PATRICK CROSSLEY, GEORGE KULINER

Part 3 of 3: Consider now that the curved trajectory you throw the frisbee with is fixed. We show that given any curved trajectory there will always be a place for you to stand so that you may throw the frisbee to any of your friends without someone being in the way. We note that said point may be quite far from your friends and give sufficient conditions for which to find the closest such point. Research done during Math Research Weekend with Dr. Pamela Harris, Williams College.

# 2P • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 26

#### HONORS THESES

SESSION CHAIR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Policy Towards Sustainability: Uganda's Refugee Management System within the Framework of East Africa S JAMIE MCCORMICK FACULTY SPONSOR: REVERIEN MFIZI, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Since 1950, Uganda has hosted an average of 161,000 individuals per year. The first official refugee settlement was established before independence from British Colonial rule, but it set a precedent for continued support of refugees into the twenty-first century. In stark contrast to its East-African neighbors, Uganda has adopted a policy towards sustainable refugee management systems, which have enabled the growing refugee population to become self-reliant within the context of national economic and social systems that are already in place. This study looks into the institutions that lend themselves directly to the success of the refugee regime; economic stability, health care services, and educational opportunities all work in conjunction to increase the prospect for self-sustaining refugee communities. Compared to other states in the region, Uganda has set itself apart as a long-term solution for refugees, as opposed to a short-term sanctuary.

#### Environmental Policy Effectiveness: A Historical Institutional Approach to the Political Institutions of Rwanda and Burundi S KRISTEN HOMEYER

FACULTY SPONSOR: REVERIEN MFIZI, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

By using a historical institutional analysis approach, Rwanda and Burundi are compared in a case study analysis because of their similar historical, cultural, and ethnic makeup. However, despite Rwanda and Burundi's similar political institutions and experiences, Rwanda can implement and enforce effective policy at higher levels of state capacity than Burundi because of internal and exogenous variables. Therefore, an examination of the strength and flexibility of political institutions between Rwanda and Burundi is necessary to understand why Rwanda has a more effective environmental policy than Burundi.

#### Sin Tetas no Hay Narrativo: An Exploration of the Relation Between Women, Drug Trafficking, and International Policy Making S SARAH PHILLIPS

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In popular media, men are often portraved at the center of the action when it comes to narcotráfico, or narco-trafficking, in machismo culture. These acclaimed "macho men" yield the drugs, guns, and most importantly-the agency of the narrative. And while it is important to acknowledge that it is mostly men who are lured into the drug trade, and who account for the most deaths, there is an important piece missing: the women. Where are they? And why have their experiences been relegated to a dusty back corner on the shelf of history? In this essay, I will explore the economic, political, and social effects that narco-activities have on women in Mexico, and argue that including women in such a narrative leads to more effective international policy making.

### 2Q • POTPOURRI: ENGLISH & LANGUAGES AND LITERATURES

WELLES 121

SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

# When Life Gives You Exile, Make a Pilgrimage: Dante's Lessons on Work and Truth

FACULTY SPONSOR: RON HERZMAN, ENGLISH Writing from exile, Dante Poet constructed the Divine Comedy as a framework for examining the productive and incorrect responses to exile in a condition of opposites: while Pier delle Vigne, an inhabitant of Inferno, responds to his fall from grace by committing suicide, Romeo, who those in Paradise laud, exemplifies the virtue and strength required to turn exile into a pilgrimage. As a conversion story written amid exile, the Comedy lends itself to meta interpretation, presenting an allegorical pilgrimage, wherein Dante's journey from the dark woods to Paradise indicates a spiritual reorientation from wrong desire to natural love. Thus, as the Poet endures exile, the Pilgrim prepares for exile — referenced throughout the progression toward true knowledge - by learning both how to repent and how to avoid the temptation of arrogance. Writing in imitation of the Bible, Dante Poet's allegorical presentation distinguishes this form of enlightenment as significant and worth pursuing because, within an allegorical framework, the value a work carries lies in the truths to which it points.

#### English-to-Spanish Literary Translation

#### MARISSA HARRINGTON-VERB

FACULTY SPONSOR: ROSEMARY MCEWEN, LANGUAGES AND LITERATURES

Student presenter Marissa Harrington-Verb will provide an overview of the theories of literary translation she has studied this semester, with a focus on the specific challenges posed by the increased translation of drama. Ms. Harrington-Verb will also share an excerpt of her Spanish translation of *Instant Harmony*, an Englishlanguage one-act play written by Joe Starzyk, and discuss her own experience with the translation process.

# Poetic Response in the Time of Turmoil g

#### DAVINA WARD

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

This presentation will focus on poetry as an art during these times of tragedy and mass turmoil. It will explore poetic response to current social issues including but not limited to racial tension, LGBTQ+ rights/issues, gun violence, and politics. The question of reconciliation is at the core of the presentation. How does a poet reconcile their art and emotions to create of piece of work that conveys them, while at the same time finding the whole process therapeutic? The presentation will function primarily through performance/ the process of poetry, in particular demonstrating the process of poetic response, whether directly imbedded in the poem or through introduction. WELLES 123

#### 2R • POTPOURRI: ENGLISH &

#### HISTORY

SESSION CHAIR: SUZANNA RUBRIGHT, SPONSORED RESEARCH

#### **Beyond Ekphrasis RACHEL BRITTON**

FACULTY SPONSOR: KRISTEN GENTRY, ENGLISH Ekphrasis, according to the Oxford English Dictionary is "the use of detailed description of a work of visual art as a literary device," but in the Ekphrasis Project, students transcend mere description and find new narratives and inspiration in each other's work. Over the past year, Geneseo artists and writers have collaborated on this project with MiNT magazine. They were paired up to produce art and inspire one another, creating an evolving thread of creative work. The Ekphrasis Project continues to move beyond traditional ekphrasis, by inviting students from disciplines outside of the arts to participate and discuss the connection between fields of study and the importance of interdisciplinarity. In this presentation, MiNT magazine will launch its special issue, lead an interdisciplinary workshop in ekphrasis, and cultivate the arts community both on and off campus.

### **Historic Homosociality and The** Medieval Literary Tradition: Same-Sex Intimacy in the Arthurian

#### Canon

#### MATTHEW BURLEY

FACULTY SPONSOR: YVONNE SEALE, HISTORY The Arthurian literary canon is dominated by hereronormative love. Captive damsels are saved by knights in shining armor, who are rewarded for their bravery with accolades and affection. Such images have inspired a cultural phenomenon that continues to influence modern society in art, film, and television. However, the celebration of Arthurian knighthood is not limited to heteronormative interactions. Historian Richard E. Zeikowitz analyzes various discourses of male same-sex desire in a series of 14th century chivalric texts, including chivalric treatises by Geffroi de Charny, Sir Gawain and the Green Knight, and testimony from the trials of the Knights Templar. He draws attention to what he labels as culturally normative same-sex desire, attempting to articulate instances of homoerotic interactions in both historical and literary texts. By applying his methodology to the work of French author Chrétien de Troyes, Sir Gawain and the Green Knight, and Sir Thomas Malory's A Noble Tale of Sir Launcelot du Lake, it becomes possible to identify erotic undertones that would otherwise be ignored by the modern reader. Using early Arthurian literature as a litmus for societal values in the Middle Ages, this paper explores homosociality and the celebration of masculinity in medieval society.

#### **2S • WOMEN AND GENDER STUDIES** WELLES 128

FEMINIST ACTIVISM AT WORK IN PRISONS, ON IMMIGRATION, AND

#### AT THE DIVISION OF HUMAN RIGHTS

SESSION CHAIR: AMANDA ROTH, WOMEN AND GENDER STUDIES

#### Identity Behind Bars: Being LGBTQ+ in a Carceral State S ALYSSA FORBES

FACULTY SPONSOR: AMANDA ROTH, WOMEN AND GENDER STUDIES

Forbes will analyze the treatment of members of the LGBTQ+ community while mass incarcerated. In addition, she will present a call for activism and engagement on this feminist issue.

#### **Refugee Experience in America: Refugee Women and Their** Children 💋 **KELSEY VANETTEN**

FACULTY SPONSOR: JOANNA KIRK, SOCIOLOGY This project examines the experience of refugee women, their hardships throughout their journeys, and the experiences of their children. Particularly VanEtten will be looking at the assimilation process for both the refugee women and their children, and their integration of two cultures.

#### Internship at the New York State Division of Human Rights S JAMIE KEEL

#### FACULTY SPONSOR: MELANIE BLOOD, WOMEN AND GENDER STUDIES

The presentation will discuss Keel's internship at the New York State Division of Human Rights (DHR) in Rochester as an Intake Specialist. She will analyze different cases she has worked on with Human Rights Investigators pertaining to gender inequality, sexism, and sexual harassment, using aliases for the cases. She will also discuss the different behaviors she has observed between men and women during conferences with Complainants and Respondents.

#### **2T • THEATRE/DANCE**

ALICE AUSTIN THEATRE

#### **DANCE COMPOSITION:** CHOREOGRAPHIC PROJECTS

SESSION CHAIR: JONETTE LANCOS. THEATRE/DANCE

#### The Overcoming TERESA BECKMAN

FACULTY SPONSOR: JONETTE LANCOS, THEATRE/DANCE

Internal struggles may control and take over every aspect of one's life. This dance is based on a personal struggle with anxiety. The piece is meant to show the internal conflict through the use of physical dancers. The partnering serves to show how mental illness can control a person. However in the end, one may fight to both prevail over any obstacle and find self acceptance. It takes incredible strength and courage to pick oneself up after each fall and this persistence shows both beauty and resilience.

#### Harmony of Self EMILY ELLMANN

#### FACULTY SPONSOR: JONETTE LANCOS, THEATRE/DANCE

Inspired by Napoleon Hill's quote, "If you do not conquer self, you will be conquered by self," this dance aims to expose mental instability resulting from a misalignment between the ideal self -- how one would like to perceived by others -- and one's self image. Individuals are rarely open to discussing what they perceive to be their greatest inadequacies, though these internal thoughts are universally suffered. In this piece, each dancer tells her own story of achieving inner balance through harmony of the ideal and real selves.

#### Prana

#### TAYLOR GERNER

FACULTY SPONSOR: JONETTE LANCOS, THEATRE/DANCE

Prana is a word in the practice of yoga that defines all cosmic life energy. This piece is inspired by this practice and the strength that is required to connect the body, mind and soul. Prana follows five women's journeys of finding their individual differences and collective strengths. This piece explores how our internal energy can be connected to the energy of life around us. Using yoga, this piece incorporates a contemporary style of dance movement with classic yoga poses, including the sun salutation sequence, warrior pose and Utkatasana, or chair pose. While each dancer incorporates their own movement and sequences of yoga poses, there are parts of the piece that highlight and emphasize the strengths of the group as a unified whole as well.

#### For They Existed MINA RAJ

FACULTY SPONSOR: MARK BROOMFIELD. THEATRE/DANCE

Based on the five stages of grief model developed by Elizabeth Kübler-Ross, the dancers in this piece portray the aftereffects of losing a loved one. It is inspired by the beauty of the mind's resilience and natural ability to heal and is meant to show the importance of experiencing the difficult feelings associated with loss. While the movement is mournful as denial, anger, bargaining and depression are represented, the piece ends on a more hopeful note as acceptance is finally found. "When great souls die, after a period peace blooms, slowly and always irregularly...We can be. Be and be better. For they existed," - Maya Angelou.

#### 2U • WOMEN AND GENDER STUDIES WELLES 132

#### **EVOLUTION OF STEREOTYPES IN** MAINSTREAM FILM AND TELEVISION

FACULTY SPONSOR AND SESSION CHAIR: MELANIE BLOOD, WOMEN AND GENDER STUDIES

Femmes Fatales : A Forever Fault in Film? A Sociological Analysis of the **Proliferation of Fatphobia through** the Capitalistic Popular Media Culture 🔊 **TERESE CAIAZZA** 

This research project examines both the on-screen portrayals of fat women characters and life in the film industry for fat women actors. Despite the growing presence of body positivity movements within mainstream feminist activism and in the media, fat characters - and therefore the fat actors playing these roles - still remain confined to social and cultural perceptions. These views are what construct "fatness" as something to be vilified, commiserated, or even compensated for. These existing confines for fat women are evident through an examination of roles played by both Melissa McCarthy and Rebel Wilson. Known for their comedic portrayals of the one-dimensional "funny fat girl" trope, this analysis focuses on McCarthy as "Megan" in Bridesmaids (2011) and Wilson as "Fat Amy" in the Pitch Perfect (2012) film series. A sociological analysis of this particular proliferation of fatphobia in film reveals the relationship between Hollywood, film, and media, and their capitalistic motivations -- which together have limited subversive representations of the fat woman's narrative.

#### 

#### EMILY MAY

This presentation will examine the modern history of stereotypes of queer women in mainstream television and how two queer female characters (one bisexual, one lesbian) break these common stereotypes

#### Representation of Black Women in Leading Roles in Film S ASHLEY MONTI

This presentation is an analysis of the roles black women plays as lead actresses in film. It defines the evolution of black women's representation in film with research and analysis, with focus on *Waiting* to *Exhale* and *Hidden Figures* to examine how black women are portrayed in film when they are not filling a subordinate role.

# Representation of Native Americans on Screen 3

#### SHANNON WALSH

The representation of Native peoples on film and television, throughout history and today, is astoundingly low. When Native Americans are visible on screen they are often given stereotypical roles, are not played by Native actors, and their history is not presented accurately or even respectfully toward living Native people. I will explore what happens with Native storylines on screen in terms of cultural appropriation, sexualization and subjugation of Native women, and the parts available for Native actors.

#### **2V • ACADEMIC PLANNING & ADVISING**

#### WELLES 111 DIVERSITY AND VALUES: DISRUPTING ORIENTATION THROUGH FORUM THEATER AND EDUCATIONAL CHALLENGES

FACULTY SPONSOR: CELIA EASTON, OTHER SESSION CHAIR: BRENDA BOTA, PSYCHOLOGY

#### BRENDA BOTA, SAMANTHA DORN, JOSEPH BLASIOLI, BRADEN MILES, COURTNEY KLEIMAN, KARINA CORNIER, NANAKO IKEMOTO, MIRANDA STEINBERG

The spring 2018 leadership course, INTD 288, has worked to understand the creative and community benefits of institutions that value diversity and inclusion, especially educational institutions. Class members have read, reflected on, and written about diversity topics that affect college students. This group continues a project begun by students in 2017 (under Melanie Blood's direction) to interpret these issues through Forum Theater, using theater as pedagogy to challenge and disrupt the comfortable places people tend to retreat into rather than working on difficult questions and conflict. The class will invite audience members to participate in their theater pieces – not to solve problems but to explore answers.

#### 2W • WOMEN AND GENDER STUDIES BAILEY 104

#### THE SAFE ZONE LEADERSHIP PROGRAM: BUILDING A COMMUNITY OF EXPERTS AND A MORE INCLUSIVE COMMUNITY

FACULTY SPONSOR AND SESSION CHAIR: ALICE RUTKOWSKI, WOMEN AND GENDER STUDIES

#### TROY KEITH, MADELINE REICHLER, HANNAH FAHY, STEPH ADAMS, ISABELLE ORTIZ, VICTORIA ALLEN, LESLIE TETTEH, FELIX LANERI, MARY RUTGLIANO, JESSICA BANSBACH, SARAH LILLEY, DIMITRI WING-PAUL

This panel will consist of six short presentations from the first set of students to participate in the Safe Zone Leadership Internship Program. Geneseo's Safe Zone Progam - which offers a 3hour workshop during which participants learn the basics of LGBTQ identities and strategies to become a better ally - has a unique hybrid structure in that our pool of facilitators is drawn from students, faculty and staff. Building students into the administration of the program vastly expanded its reach and given student leaders ownership of key parts of Safe Zone. Students will: reflect on the importance of Safe Zone to their intellectual and personal growth; demonstrate skills learned around collaborative decision-making and developing a visual identity for the program; present student contributions to the revision of curriculum for the academic course; speak about curriculum development in a broader sense as the Geneseo program begins work on its own training materials; offer a case-study of a residence-livingspecific program that went from theoretical to actual in three months; suggest strategies and assessment of our public-facing presence online; and finally a data analysis of our success as well as what the program can do to improve.

### CONCURRENT PRESENTATIONS 3 ROUND ROBIN • 2:25 - 3:40 PM

This session will have three varied presentations in each room, with ample time to move from room to room between presentations.

#### SESSION 3 ROUND ROBIN BLOCK 1 • 2:25 - 2:40 PM

#### **3A • 1 EDGAR FELLOWS PANEL 9**

WELLES 121 SESSION CHAIR: LISA MEYER, EDGAR FELLOWS

#### Feminism and Popular Music MADISON MURPHY

FACULTY SPONSOR: MELANIE BLOOD, WOMEN AND GENDER STUDIES

In this presentation, I discuss how feminism is represented in contemporary popular music. I explore how artists such as Beyonce, Kesha, Taylor Swift, Hailee Steinfeld, and Charlene Kaye express feminist ideas through their music. My research takes into account the intersections between gender, race, and class. In addition, I consider how the lyrics of many artists, even artists who consider themselves to be feminists, can be problematic for women. My findings will draw on academic research, as well as my lived experience exploring feminism through activism. In addition to my research, I will present several songs that I have written that reflect feminist ideas. The goal of writing these songs is to show that popular music does not have to rely on themes that objectify women. Instead, popular music can expose women's issues and help spread awareness about the tenets of feminism. Through my research, I hope to raise awareness about how the media can shape how people view social issues. Through my music, I hope to set an example of how artists can hold themselves accountable and support beliefs that are important to them through their music, without bending to patriarchal norms. Selected for presentation at SUNY Undergraduate Research Conference at Monroe Community College, Brighton, NY.

#### **3B • 1** WELLES 115 SESSION CHAIR: KEN KALLIO, OFFICE OF THE PROVOST

# Black Women Be Knowing: Tears, Consciousness & Affect in *Get*

### Out 🖠

ERIK BUCKINGHAM FACULTY SPONSOR: LEE PIERCE, COMMUNICATION

This project, intended for publication in Critical Studies in Media Communication, reads against the laudatory mainstream reviews of the popular 2017 horror film *Get Out* to argue that the film is not an emancipatory narrative for the #blacklivesmatter era, but rather an ambiguous aesthetic performance of double consciousness that refuses to resolve the mixed positionality of living as a black American and a woman. To advance this argument, the project juxtaposes a discourse analysis of mainstream critical reviews of the film with a close textual analysis of tears and blood in key scenes from the film. Ultimately, the essay argues that American popular-political culture needs to pay closer attention to form in media,

rather than content, because it is through form that counter-narratives of identity emerge, challenging hegemonic narratives of white privilege rather than just meaning that someone is sad. Selected for presentation at SUNY Undergraduate Research Conference, Rochester, NY.

**3C • 1** WELLES 140 SESSION CHAIR: BILL HARRISON, OFFICE OF THE PROVOST

#### Chromosome Spatial Distribution in the Large Bacterium *Epulopiscium* sp. type B BAYLEY ZUBLER

FACULTY SPONSOR: ANNE PELLERIN, PHYSICS & ASTRONOMY

ELIZABETH HUTCHISON BIOLOGY

The large bacterium Epulopiscium sp. type B is unique because it is very large and extremely polyploid, i.e. containing multiple chromosomes. Bacteria are usually small in size because they are limited by diffusion rates and the need for a large surface area to volume ratio. Most bacteria contain 1-2 chromosomes whereas the Epulopiscium sp. type B bacterium has thousands of chromosomes. The goal of our research is to understand the unusual cell structure of Epulopiscium sp. type B and the biology that allows it to exist with a large cell size and its extreme polyploidy. Specifically, we have created a 3D chromosome spatial distribution map. This map will be used to study the distribution, size, and the orientation of the chromosomes. More generally, we are interested in how it organizes and structures its chromosomes, and how this relates to the cell. An important element to this research is using astronomical imaging techniques and analysis to analysis to retrieve the 3D location of each chromosome markers in microscope images of the cell. This study could help gain important insights into other polyploidy bacteria.

**3D • 1** WELLES 119 SESSION CHAIR: JENNIFER KENYON, INTERNATIONAL STUDENT SERVICES

#### A Short Film on Credo Kitchen Destination Dinners S SOFIA VILLALÓN

#### FACULTY SPONSOR: JOSEPH DOLCE, OTHER JOSEPH COPE CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

As the Ambassador in Leadership and founder of Credo Kitchen Destination Dinners, I will be taking you on the journey behind Credo Kitchen through a self-directed short film. I will let you in on the lessons I've learned through the ambassadorship, the story behind Credo Kitchen and most importantly, my passion for food. I'll also bring you along with me on my travels to Buffalo, Rochester, and Washington D.C as I put together my most recent event Credo Kitchen Destination Dinners: From Farm to Fork. This latest event will change the table conversation towards food waste in our lives and how to live a nutrition rich, healthful lifestyle on a tight budget, all while contributing to the local food system. I will also introduce you to CAS chef llana Stevenson and chef Wilson Castillo on their experiences with Credo Kitchen, and guest speaker to the Farm to Fork event, Phil Bianchi from Headwater Food Hub. Credo Kitchen Destination Dinners is a project generously funded by the Frank Vafier '74 Ambassador in Leadership, CIDD, and the Geneseo Foundation.

3E • 1	WELLES 123
SESSION CHAIR: ALYSSSA STEFA	NESE,
INTERNATIONAL STUDENT SERV	ICES

#### From Mentors to Main Street: The Freshman Integration Initiative SARAH JANE PHILLIPS

FACULTY SPONSOR: JOSEPH COPE, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

During this presentation I am going to talk about my experience as a Community Advocates Ambassador in Community Engagement through the Center for Inquiry, Discovery and Development. I was an ambassador in the fall of 2017 and my presentation will talk about the two events that I organized, the Main Street Bash and the New Student Mentor Program. Through this presentation I want to show where the ideas for these two programs came from and the steps required to execute these events. I also want to talk about the community connection through this ambassadorship and how these programs brought students and community members closer together.

#### **3F • 1** WELLES 128

SESSION CHAIR: SAM CARDAMONE, STUDY ABROAD

#### Visualization of 5-HT2 Serotonin Receptors in the *Lymnaea* Central Nervous System

CAMILLE CHIN

FACULTY SPONSOR: DUANE MCPHERSON, BIOLOGY

This presentation will present the findings of my two year research project with Dr. McPherson. Lymnaea are a type of sea snail. This project focuses on serotonin and serotonin receptors in the Lymnaea brain. First, we dissected Lymnaea brains and used immunofluorescence to view where serotonin is present in the brain. Then, we extracted and isolated 5-HT<sub>2</sub> RNA from Lymnaea and converted it into DNA. The 5-HT<sub>2</sub> receptor is a specific serotonin receptor that has not been visualized before in the central nervous system of Lymnaea. Using the DNA, we engineered plasmids to contain the 5-HT<sub>2</sub> gene and incorporated these plasmids into bacteria cultures. Then, we extracted the plasmids and confirmed via gel electrophoresis that the plasmids could be cut with restriction enzymes. Restriction enzymes cleave DNA and we used specific restriction enzymes in order to cut the 5-HT<sub>2</sub> gene out of the plasmid. Then, we engineered mRNA probes that are bound to a substrate, DIG, that will fluoresce in the presence of alkaline phosphatase during visualization. The in situ hybridization was performed in order to visualize where the 5-HT<sub>2</sub> receptors are present in the brain.

3G•1

WELLES 131 SESSION CHAIR: EMILY COLE, STUDY ABROAD

#### An Analysis of Music and Dance as **Essential to the Plot in Jane** Austen's Emma and Persuasion ELIZABETH VERRASTRO

FACULTY SPONSOR: CELIA EASTON, ENGLISH Music and dance are quite noteworthy in Jane Austen's novels, particularly in Persuasion and Emma, because they provide outlets for intimacy among the young characters that would otherwise not be appropriate. As Cheryl Wilson, in her article "Dance, Physicality, and Social Mobility in Jane Austen's Persuasion," remarks, "balls and dances are significant occasions because they provide opportunities for socialization and courtship" (57). The ability to play music and to dance is closely tied to attracting the opposite sex, as we can see with the characters of Emma Woodhouse, Anne Elliot, and Jane Fairfax. The subsequent jealously that evolves from characters interacting during balls and musical events emphasizes the importance of dance and music as ways to get closer to characters of romantic interest. Jane's superior musical abilities get her attention that Emma's superior status affords her. Similarly, Anne keeps a close eye on who Captain Wentworth dances and interacts with, while keeping herself secluded from the same festivities. Music and dance play critical roles in the lives of Emma, Anne, and Jane, as they often act as facilitators for the development and advancement of intimacies between characters of the opposite sex.

#### 3H • 1

SESSION CHAIR: EMILY FROOME, STUDY ABROAD

WELLES 133

#### The Effect of Ballot Proposals on Voter Turnout 🔊 WESLEY EBERSOLE

#### FACULTY SPONSOR: AARON HEROLD, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

During this past year's elections across New York State for various local and municipal positions there were many areas that reported higher than average voter turnout to the polls. This just so happened to coincide with the implementation of three proposals put forth by the state on all election ballots, including the Constitutional Convention. I conjecture that these two events are causally related with ballot initiatives, leading to higher average voter turnout. Additionally I would like to view the effect this has on voter turnout for certain demographics, including but not limited to: parties, race, and age. Through my research I hope to find several statistically significant correlations between one or more of these variables.

31 • 1 WELLES 132 SESSION CHAIR: KATIE BUCKLEY, NEW STUDENT PROGRAMS

#### **Malnutrition and Educational** Setbacks in School-aged Children in **Nicaragua: Does Family Connectedness Foster Resilience Toward Effects of Malnourishment?** Ø

#### ARLENIS SANTANA

FACULTY SPONSOR: JOSEPH COPE, HISTORY Discussion will be focused on Jiquelite, a rural village of about 100 people in the hills just outside of El Sauce, Nicaragua. Presentation will focus on topics of developmental psychology and issues of malnutrition in Jiquelite. This presentation will discuss preliminary data that was collected in Nicaragua and discuss the W.E.I.R.D phenomenon. This project was funded by The Eddie Lee '76 First Generation Ambassadorship.

3J • 1 WELLES 134 SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

#### **Robusticity and Size Comparison of Theropod Humerii Using Geometric Morphometrics to Indicate Prey** Size Preference SAMANTHA GAGE

FACULTY SPONSOR: SARA BURCH. BIOLOGY

There are many hypotheses regarding the function of the forelimbs of nonavian theropod dinosaurs, including that they functioned in prey capture. Previously, we performed phylogenetic principle component analyses on a set of functionally relevant forelimb indices and compared the results from theropods to those of extant felids. Although the results showed congruence between the felids and theropods, we were severely limited by the number of taxa available using this method. To expand this study, we used geometric morphometrics to better capture variations in the shape of the bones and allow for the inclusion of more taxa than with linear rations. The analysis showed gradation in morphotypes from more gracile to more robust, with the robust morphotypes typically showing more development in the processes related to muscle attachment sites. A plot of the allometric trends shows that shape scores of the individual elements demonstrated only very weak correlation with the size of the bone itself, indicating that overall robusticity is not a function of element size. Given our previous work in comparing the types of shape change associated with prey specialization in cats, we hypothesize these functional differences are related to prey specialization. Selected for presentation at Society of Vertebrate Paleontology (August 2017), Calgary, Alberta.

3K • 1 WELLES 138 SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

#### Hymn to the Liberated: A **Comparative Analysis of French and British Decolonized Nations in** Africa through National Anthem Lyrics

#### DEMETRIOS GIANNIOS

FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

My topic was comparing the national anthems of former colonies of France and Great Britain. My goal was for the national anthem lyrics to illustrate the contrasting imperial influences and liberation practices of the decolonized French and the British nations in Africa. My research design involved looking at the national anthems of fourteen current African nations that gained independence during the period of mass decolonization after World War II - seven formerly under British rule and the other seven formerly under French rule. I then counted and compared the frequency of specific words, i.e. "free(dom)," "unity/ted," and "just(ice)," between the decolonized British nations and the French nations. After conducting my research and analysis, the word frequencies of both the decolonized French and British African national anthems correlate with the principles of their colonizers as well as in reaction to how they were decolonized.

#### 3L•1

WELLES 24 SESSION CHAIR: JULIE RAO, INSTITUTIONAL RESEARCH

#### The Maya: Landscape Innovation and Urban Ecology S **BRENNA CHAMBERLAIN**

FACULTY SPONSOR: JAMES AIMERS, ANTHROPOLOGY

The capabilities and knowledge of the ancient Maya are often presented as arcane and cryptic. Their worldview and reasoning may become more transparent to the contemporary observer through an examination of their landscape modifications and urban-agrarian techniques. When considering the significance of their surroundings, the Maya appear less esoteric to the modern viewer and transform into masters of their environment. Sites examined include Tikal, a massive urban center in the Maya Lowlands known for intensive water management methods, and Xuch, a settlement in the Puuc region of the Yucatan Peninsula with evidence of horticulture and silviculture based within city limits.

3M • 1 WELLES 26 SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

### **MOVED TO POSTER 416 Detection** of Pesticides in Locally Produced Honey 🔊

#### VICTORIA KOMPANIJEC

FACULTY SPONSOR: JAY CHARLEBOIS, CHEMISTRY Colony collapse disorder and other diseases have caused the honey bee population to plummet in past years. Many people believe that pesticide use is a contributing factor to this decrease. This experiment aims to develop a simple and efficient method of detecting trace amounts of pesticide in honey samples. Currently, samples are prepared using the QuEChERS (quick, easy, cheap, efficient, rugged and safe) method and run through an HPLC to obtain a mass spectrum. Several calibration curves have been created by spiking small amounts of pesticide into honey, and plotting the concentration of pesticide against the area of the resulting peak. Currently, glyphosate (the main ingredient in RoundUp) is being investigated as a contaminant in honey. These honey samples are obtained from local sources around New York State. Any results that show the presence of pesticides in honey could contribute to the hypothesis that the declining bee population is linked to the use of pesticides.

#### SESSION 3 • ROUND ROBIN BLOCK 2 • 2:50 - 3:05 PM

### 3A • 2 EDGAR FELLOWS PANEL 9

WELLES 121 SESSION CHAIR: LISA MEYER, EDGAR FELLOWS

#### Emergency Medical Services in the Developing World: The Political, Social, and Economic Barriers to Pre-hospital Medical Care S SEAN MCLEAN

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In this presentation, I am looking to analyze the current state of emergency medicine in the developing world, especially focusing on the political, social, and economic factors leading to shortcomings in effective care. Many of the resources we take for granted in the United States, such as access to quick emergency medical care or even a universal emergency telephone number, are still not implemented in some nations or regions. Many of the factors impacting the development of emergency medical services spread far beyond the medical field into social, political, and economic spheres. Factors such as government instability, socioeconomic inequality, poverty, and war and conflict present just a few of many major roadblocks to implementing effective emergency medical systems. Utilizing a case study of present-day Nicaragua, I hope to analyze the current state of emergency medical services in the developing world. I will compare this case study to a number of existing studies in order to analyze how it relates to the regional and global average. Then, I will explore possible ways in which both international organizations and domestic actors can promote the growth of emergency medicine in the developing world to reach an international standard of care.

#### 3B • 2

WELLES 115

SESSION CHAIR: KEN KALLIO, OFFICE OF THE PROVOST

# American Sign Language as an Independent Language *S*

STEPHANIE PEARL

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

American Sign Language (ASL) is used by deaf people in the United States and Canada. For most who are native signers, it is their primary form of communication. ASL is an important part of deaf culture and is something that the deaf community takes pride in. Contrary to popular belief, ASL is separate from English, or any other spoken language, and is not universal. It has its own grammar and syntax, making it an independent language. Traditionally, many colleges and universities, including SUNY Geneseo, have failed to recognize ASL as a legitimate foreign language for all majors, except for those seeking teacher certification. Research conducted for this presentation aims to demonstrate why ASL should be fully recognized as a language and why institutes of higher education should allow it to be used to fulfill foreign language requirements. ASL can be used in any career path and promotes inclusiveness by breaking down barriers between geaf and hearing people. Historically, deaf people have been isolated and oppressed by the majority of society that hears and speaks. Teaching ASL in schools can prevent this and make deaf people a more equitable part of society, while at the same time promoting cultural diversity.

**3C • 2** WELLES 140 SESSION CHAIR: BILL HARRISON, OFFICE OF THE PROVOST

#### GIS Analysis of Early to Middle Woodland Mounds and Earthworks in the Licking Valley, Ohio NOAH HABER

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

Studies regarding the spatial configuration of ceremonial mounds and earthworks within Southern Ohio during the early- late middle woodland era have provided that: 1) site-specific socioenvironmental qualities are tied to the construction of these landscapes, in which dispersed sedentary settlements cluster proximal to mounds and earthworks, 2) clustering of mounds occurs at multiple-scales and, 3) a higher intensity of clustering exists among Hopewellian mounds as compared to Adena. Through the incorporation of Geographic Information Systems (GIS) locations of earthworks and mounds were digitized into a spatial databank from archaeological sources and a multitude of spatial and statistical analyses were employed such as: Kernel Density Estimations (KDE), Predictive Modeling, and Viewshed Analysis to facilitate a sophisticated understanding of the considerations and utilizations related to ceremonial mounds and earthworks within this region. Identifying these aspects of mound/earthwork construction within the Licking Valley allows for a comparison with research involving mound distributions within Southern Ohio, such as the Scioto Valley. Results from these analyses support a continuance of mound-building traditions throughout generations, statistically significant associations between mound placement and topographic qualities that would enhance regional cohesion within a widely dispersed and egalitarian society. Selected for presentation at SUNY Undergraduate Research Conference (SURC) 2018, Monroe Community College.

3D • 2

WELLES 119

SESSION CHAIR: JENNIFER KENYON, INTERNATIONAL STUDENT SERVICES

#### Growing Fast Plants in Different Soil Conditions, as Well as in a Simulated Zero-g Environment

#### SHELDON LIPSCHUTZ, VICENTE PAGAN

FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY Based on studies from the Mars Rover explorations, it is now possible to purchase Mars regolith simulant, which simulates the physical and chemical properties of the soil found on Mars. The objective of the study was to compare the growth the Wisconsin fast plant (Brassica rapa) in three different soil types: commercial potting mix, a coarse textured Mars soil simulant and a finetextured Mars soil simulant. A secondary study compared growth on these soils utilizing a clinostat, a device that simulates a zero-g environment for plant growth. Once fully grown, measurements of stem length, leaf area, and fresh weight to dry weight ratio were recorded. Preliminary data shows Brassica rapa having the most growth in regular soil, with substantial decreases in growth in the simulant soils. An explanation for this result might be nutrient deficiency of the simulant soils or a decrease in water holding ability.

#### **3E • 2** WELLES 123

SESSION CHAIR: ALYSSSA STEFANES, INTERNATIONAL STUDENT SERVICES

#### Prolivio: The Startup Journey from Ideation to Product Creation SAMUEL RANDALL

FACULTY SPONSOR: JOSEPH COPE, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

Prolivio is a migraine relief headband developed in a partnership between Geneseo students in the Entrepreneurship: IdeatoVenture class, and a Rochester Industrial Design company called BZDesign. The Prolivio headband uses provisional patent technology including thermoelectric plates that allow a user to decrease the temperature of the headband at the touch of a button. Throughout the past year, Prolivio has evolved from an idea scribbled on a napkin, to a working prototype product with a complete business plan and potential investors. During my presentation, I will describe the process of market research, prototyping, idea refinement, and the overall opportunities and difficulties I faced when developing this product. This project was supported by the Edward Pettinella '73 Endowed Ambassadorship in Business.

#### 3F • 2

WELLES 128 SESSION CHAIR: SAM CARDAMONE, STUDY ABROAD

#### The ToKnight Show: 2017

#### Ambassadorship for Diversity JENNA LAWSON

FACULTY SPONSOR: JOSEPH COPE, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

My project, "The ToKnight Show," was a late night comedy and talk show that focused on the issues and perspectives shared by marginalized students on campus. From its inception, my project's main focus was to explore the important conversations that were already happening on campus but weren't necessarily being given the importance they deserved. While SUNY Geneseo has expressed its interest in diversifying the racial and economic makeup of its students, its Statement on Diversity and Community has been left unchanged for over 14 years. Additionally, there have been a variety of instances of overt racism and transphobia on our campus during my time here. Once I learned about the Ambassadorship Program, I was compelled to see if and how I could use my skills in public speaking and performance to amplify marginalized voices in a way that educated white, straight, and/or neurotypical people on our campus and created a much-needed outlet for students who felt that their experiences were being ignored. Through four performances for over 250 students, The ToKnight Show explored these issues in a new way and opened up channels of communication within the student body.

#### 3G • 2

WELLES 131

SESSION CHAIR: EMILY COLE, STUDY ABROAD

# A Search for Extragalactic Planetary Nebulae with the Hubble Space

#### Telescope

**KRISTEN CHURNETSKI** 

FACULTY SPONSOR: ANNE PELLERIN, PHYSICS & ASTRONOMY

When a 0.8 to 8 solar mass star reaches the end of its life it becomes a planetary nebula (PN). As part of the Legacy Extragalactic UV Survey (LEGUS), a visual search was performed to find PN in nearby galaxies using images from the Hubble Space Telescope. The candidates appeared green with the set of wide image filters because they strongly emit at 4959 and 5007 angstroms, well-known nebular transitions of doubly ionized oxygen. When a candidate was found, narrow band filter images were examined for H-alpha and [O III] emissions. Sources were considered as outliers if they did not contain both characteristic emissions. Among the 32 galaxies examined, a total of 166 planetary nebula candidates were found. Preliminary color-color and color-magnitude diagrams were created to further eliminate outliers. A more complete photometric study of the PN candidates is now underway using the latest LEGUS stellar catalogs. A detailed photometric characterization of the PN candidates will allow us to get rid of additional outliers and obtain the most complete luminosity function of extragalactic PN. The final list of PN candidates will be used for further spectroscopic studies such as nebular and metallicity environments. Selected for presentation at SUNY Undergraduate Research Conference (SURC), Monroe Community College.

3H • 2 WELLES 133 SESSION CHAIR: EMILY FROOME, STUDY ABROAD

#### Impact of Organizational Politics on **Employee Burnout** WILLIAM MCLELLAN, HANNAH WIDERCRANTZ.

**TESSA CORBISHLEY, CHRISTOPHER RUDIN** FACULTY SPONSOR: AVAN JASSAWALLA,

BUSINESS

This topic focuses on the various ways in which organizational politics (namely ingratiation, exchange, favoritism, and nepotism) induce competition and resentment among employees. We reviewed existing literature and found that (a) organizational politics lead to employee burnout via increased exhaustion and job disengagement, (b) this burnout can lead to decreased productivity and problems with employee retention in an organization, and (c) employees in a politicized workplace will themselves feel more pressured to partake in organizational politics. Our presentation will provide more details on our findings as well as suggestions for managers regarding this important topic.

31 • 2 WELLES 132 SESSION CHAIR: KATIE BUCKLEY, NEW STUDENT PROGRAMS

#### Visualizing the Trends of Non-**Communicable Disease Growth in Countries Undergoing an Epidemiological Transition Using** World Health Organization Data 🔊 **CLARK DAVIS**

FACULTY SPONSOR: SUSAN BANDONI-MUENCH, BIOLOGY

Non-communicable diseases (NCDs) have often been thought of as a problem that afflict high income countries (HICs). While HICs suffer from diseases associated with overweight and obesity, it is often thought that low income countries (LICs) suffer from diseases that arise from poverty. However, there is a growing understanding that overweight and obesity are no longer issues exclusive to HICs. As globalism expands, their economies grow, and their populations urbanize, LICs become middle income countries, which become afflicted with both diseases of poverty and wealth. It seems this double disease burden causes both classes of disease to worsen more than they would alone. In this project, World Health Organization data were used to depict how the growth rates of NCDs differs between World Bank income groups. The rate of mortality due to NCDs in upper middle-income countries (UMICs) is 6.88 times faster than that of HICs from 2000 to 2015. In lower middle-income countries (LMICs), is rate is 3.35 times faster than that of HICs from 2000 to 2015. Further questions on the operation of the growth of NCDs include their relationship with neglected tropical diseases, rates of urbanization, and Millennium Development Goal Regions.

#### 3J•2 WELLES 134 SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

Test Dummy 💋 SANG WOOK NAM FACULTY SPONSOR: LEE PIERCE,

COMMUNICATION

Living in another country with different skin color is difficult sometimes. Either it is a positive experience or a negative experience, many international students or immigrants at SUNY Geneseo had an experience of micro-aggression at least once. Are students nowadays complaining too much about little things or they represent a new type of discrimination? This short film looks into the life of international students and immigrants who came over to the United States for either to live or just to study.

3K • 2 WELLES 138 SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

#### **Effects of Hessian Soldiers on** Morale in the American Revolution: How Mercenaries Skewed the War **Toward the Colonists** JULIANA THOMPSON

FACULTY SPONSOR: CATHERINE ADAMS, HISTORY This paper discusses the effect of the Hessian mercenary soldiers on the outcome of the American Revolution. These soldiers were often participants in the war only for the money it provided them, and knew and cared very little about the British cause. While they made the British forces larger, their lack of knowledge and investment in their goals ended up hurting the British side of the war. There were some desertions and even mutinies among the Hessians. Though some Hessians helped by being talented fighters, most did not have their hearts in it. The colonist fighters, though they had fewer resources, were almost all passionate about their cause, and they were able to overpower the British.

3L • 2

WELLES 24 SESSION CHAIR: JULIE RAO. INSTITUTIONAL RESEARCH

#### The Impact of Psychological **Contracts on Employee Retention** and Turnover

ALEXANDER ANDREOLI, TABISH KHAN, NICK NOE, **OLIVIA HORBATIUK, AIESHA WILLIAMS** 

FACULTY SPONSOR: AVAN JASSAWALLA, BUSINESS

We studied the effect of psychological contracts on retention and turnover within an organization and found that psychological contracts occur within every organization and that they have a strong relationship with retention and turnover rates. We found that within a psychological contract there are several variables that affect the strength of the contract and that impact employees' feelings towards their job. We also observed that psychological contracts have the power to influence employees' work performance. motivation, and trust within an organization. After understanding what impacts and strengthens a psychological contract, we were able to recommend steps to managers to help retain employees and keep them motivated to work. By focusing on employees' workplace values, an employer will have a better chance of keeping employees at their company and motivated to complete their work.

**3M • 2** WELLES 26 SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

The Urban Chrysalis: Analysis of Euro-American Land Surveys and Their Imprint on Modern Geography in Western New York State PETER SCILLA FACULTY SPONSOR: DAVID ROBERTSON, GEOGRAPHY

Anthropogenic spatial boundaries imprint upon a landscape the physical decisions made by societies of bygone eras — they are the ultimate geographic recordkeepers. Prior to Euro-American settlement, original land surveys conducted by private and government-controlled entities were one of the first activities pertinent to modern development in North America. Previous research has analyzed the degree to which these original land surveys persist or are 'embedded' within modern geography in the form of civil boundaries, streets, and other visible and non-visible features. By analyzing the shifts, or lack thereof, in these artificial spatial phenomena throughout western New York State (WNY), this research can provide a deeper understanding of patterns of land development and urban form. Contemporary satellite imagery was compared to corresponding late-eighteenth centurv cartography in the Phelps & Gorham Purchase region of WNY. First, original land surveys were digitized in a geographic information system (GIS) using historical maps from the mid-to-late nineteenth century. Second, these lines were compared to modern orthoimagery. Third, results were mapped to qualitatively interpret causes of persistence or disappearance of survey lines in the present landscape. Results suggest that lines disappear in mountainous sparsely populated areas and persist in flatter suburban areas. Selected for presentation at Annual Meeting of the American Association of Geographers, New Orleans, LA.

#### SESSION 3 • ROUND ROBIN BLOCK 3 • 3:15 - 3:30 PM

#### **3A • 3 EDGAR FELLOWS PANEL 9**

WELLES 121 SESSION CHAIR: LISA MEYER, EDGAR FELLOWS

# Global Mamas: Development in Ghana 🖋

#### NINA SANTACESARIA

FACULTY SPONSOR: JOANNA KIRK, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This project involves research into Global Mamas, a Fair Trade company in Ghana providing economic empowerment to women, and seeks to create useful materials to raise support for the organization's mission. The organization's founders discovered that its products sell best in personal, sincere atmospheres that allow for discussion of the brand's impact, rather than in more anonymous commercialized spaces. Therefore, this project seeks to develop Global Mamas' Prosperity Party program, which is an excellent way to facilitate the direct sale of merchandise and educate a multiplying client base about the brand's mission. The first phase of this project involves hosting experimental Prosperity Party events and subsequently providing constructive evaluations and recommendations to the organization regarding each step of the current process. The second phase focuses on creating new materials and procedures to be implemented by Global Mamas for use by its staff, and future hosts and hostesses of Prosperity Party events, to create the most efficient, simple, and user-friendly experience. Finally, this project prioritizes promoting Global Mamas in western New York by attempting to build new professional relationships, and earn the loyalty of student groups at both the high school and college level.

**3B • 3** WELLES 115 SESSION CHAIR: KEN KALLIO, OFFICE OF THE PROVOST

# Lithium Abundances of Gap Stars in Open Star Cluster M48

ALEXANDER BELLES

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

Understanding the elemental abundance of lithium is an important problem in astronomy. In addition to being used to understand the Big Bang, Li can be used to probe stellar evolution. Starting around 100 Myr after forming, stars in a certain temperature range begin to show depleted amounts of lithium. By the time the stars are 700 Myr. almost all of the Li has been depleted. This observed "Li gap" hints at physics that is not included in the standard stellar models. By measuring elemental abundances and physical properties of these stars, we can try to understand this Li gap. Presented here is a spectroscopic elemental abundance analysis of the open star cluster M48, aged (420 <plus/minus> 30) Myr which places it at an intermediate age during the formation of the Li gap. We compare the Li depletion in M48 to younger and older star clusters to understand the gap's evolution.

**3C • 3** WELLES 140 SESSION CHAIR: BILL HARRISON, OFFICE OF THE PROVOST

#### How State Sponsored Social Spending Has an Effect on the Financial Development of Developing Nations & DANIEL JAYSON

FACULTY SPONSOR: MANSOKKU LEE, BUSINESS I am examining government spending, specifically spending on social programs, and how it affects the financial development of developing nations. These two issues will be connected through an intermediary factor of public trust in financial systems. I am measuring financial development in the following four ways: financial depth, accessibility to financial systems, financial efficiency, and financial stability by using the World Bank's "Global Finance Development Dataset" and various other political databases for government spending and public trust. Then I will apply empirical analysis on the data collected to test whether in developing nations, it is worth it for governments to invest in state sponsored social programs with the hopeful result of encouraging financial development. I believe that this study will contribute to the growing literature on financial development by furthering our understanding of government involvement in financial systems, and how public perception plays an important role in dictating the effectiveness of state sponsored social programs.

# **3D • 3** WELLES 119 SESSION CHAIR: JENNIFER KENYON,

INTERNATIONAL STUDENT SERVICES

#### Cooking Confrontations in the Francophone Novel SOPHIE BOKA

FACULTY SPONSOR: MARIA LIMA, ENGLISH In this presentation, I bring together two novels, Calixthe Beyala's Comment cuisiner son mari à l'africaine and Maryse Condé's Victoire, les saveurs et les mots: récit, to explore how, when in conversation, they seem to offer a cookbook for self-empowerment to francophone societies still struggling with the internalized cultural norms of their former colonizer. Such lingering norms are impossible to satisfy, especially for the novels' black female protagonists who, inherently, can never become the colonizer's ideal of beauty (white, thin, attractive by western convention). Thus, these characters are cast away into a cultural in-between: although literally visible within their countries, they are denied full visibility and, by extension, full subjectivity. Yet, I argue that by channeling additional senses, such as taste and smell, the characters manage to push back against oppressive colonial ideals. Varying in form and generation, each character utilizes their relationships with food and body as a means to assert an otherwise unseen presence in their countries. With the help of these tools, the women begin to challenge the dominant zeitgeist, nourishing the bellies of history, and, in doing so, too, realize into society the power of their own stories.

#### **3E • 3** WELLES 123 SESSION CHAIR: ALYSSSA STEFANES, INTERNATIONAL STUDENT SERVICES

Flight Traffic Regularities in Latin American Cities SCOTT WILLIAMS

# FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

Latin America's airports are its gateway to the global economy and international society. Determining what factors influence the passenger volume of an airport furthers the understanding of the functions a city fulfills in its constituent region. The factors that influence domestic passenger values are inherently different than those that influence international passenger values. The purpose of this study is to find the predominant areas of air traffic in the region and compare travel to different regions of the world connecting to Latin America. Data were collected from the open source website openflights.org. Regression analyses assessed relationships between flight traffic and city characteristics. In developing predictive models for these passenger values, it was found that domestic passenger volumes in a given metropolitan area are most positively influenced by its wealth, relative to its nation, and negatively influenced by its level of urban primacy. International passenger volumes are determined by urban scale factors, namely population size, positively at a metropolitan and negatively at a national scale. An examination of Latin America's intraregional and international air connection further explains cities' roles in a global context. Selected for presentation at State University of New York Undergraduate Research Conference (SURC), Monroe Community College.

#### 3F • 3

WELLES 128

SESSION CHAIR: SAM CARDAMONE, STUDY ABROAD

#### Frontier Central's School Shooting Drill and Why it Matters to Gun Control Debate CECELIA GONZALES

FACULTY SPONSOR: JANE MORSE, EDUCATION In high school, my school was selected to participate in an active school shooter drill. Like others. I have experienced many drills. But, this one was different. It was more realistic and showcased an actual "shooter" entering the school. There were different aspects incorporated, including student actors portraying the victims, and numerous emergency services responding to the scene. While I knew it was fake, there were times where it still felt real. In the end, it taught everybody involved tangible and intangible things. Most importantly, it made me realize that this could happen to any school. Seen as recently as the shooting at Marjory Stoneman Douglas High School, it's evident this is still a problem that needs fixing. While I am not an expert on gun control, I do know what it feels like to sit in a classroom as you listen to screams and gunshots, and I know that nobody should have to experience that. Additionally, as someone who is studying to be a teacher, I understand the importance of maintaining every student's safety at their educational facility. Ultimately, I feel that the takeaways from my own experience can be included into the overall issue at hand.

**3G • 3** WELLES 131 SESSION CHAIR: EMILY COLE, STUDY ABROAD

# Supporting Transgender Students in Schools S

#### AMELIA STACHOWIAK

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

The purpose of this paper is to use available empirical data to determine which high schools and colleges best support transgender students. Methods included will be surveying transgender students via social media as well as examining their school ranking comparatively. Factors considered that determine the accessibility of a school to transgender students will be quantified by determining availability of gender-inclusive facilities, pride clubs, Gay-Straight Alliances, safe zone stickers and training, and visible transgender teachers or administration. Inspiration for this research comes from the current national climate surrounding transgender individuals including the lack of protections in place for such individuals.

#### WELLES 133

SESSION CHAIR: EMILY FROOME, STUDY ABROAD

#### Maya Infant Feeding Practices and Change in Quintana Roo, Mexico JESSICA FRIEDMAN

FACULTY SPONSOR: KRISTI KRUMRINE, ANTHROPOLOGY

Globalization, which often results in the switch from traditional subsistence practices to a cash economy, has many implications for the well-being of many marginalized communities. In this study, I investigate the effects of this transition on infant feeding practices within the Maya population. I examine how and why Maya parents decide to feed their babies and how this has been affected by an increase in tourism and the abandonment of Milpa farming and kitchen gardens. I explore a community of Maya people in the rural village of Cobá, Quintana Roo, Mexico to examine how adapting to a cash economy has influenced their infant feeding decisions.

#### 3| • 3

3H • 3

WELLES 132

SESSION CHAIR: KATIE BUCKLEY, NEW STUDENT PROGRAMS

### The Impact of Trust on Affective Commitment and Turnover/Retention in an

#### Organization

ALEXANDRA MAJKA, JULIE HOLMES FACULTY SPONSOR: AVAN JASSAWALLA, BUSINESS

Trust is a vital part of any relationship. In the workplace, it is important to have a trusting relationship between employees and employers without which employees may leave (turnover), costing the organization time and money to replace them. With many negative repercussions associated with turnover, organizations should take steps to prevent it. One method involves the relationship between employee trust of the supervisor and the affective or emotional commitment they feel towards the organization. This presentation will discuss the research on this topic and recommend steps companies and their human resource (HR) departments should take to increase their employees' trust in their supervisor and their affective/emotional commitment to the firm.

**3J • 3** WELLES 134 SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

#### Eigenvalue Bounds of Regular Graphs

#### BETHANNA JONES

FACULTY SPONSOR: CESAR AGUILAR, MATHEMATICS

As the number of vertices *n* in a graph can quickly grow to be quite large and consequently grow in complexity, we turn to the eigenvalues of a graph in order to analyze the graph; patterns in the values and distribution of these eigenvalues reflect patterns in the structure of the graph. The eigenvalue of a graph with the greatest magnitude, or dominant eigenvalue  $\lambda_1$ , may reveal the graph's density, diameter, connectivity, and number of components-all of which help to understand a complex system. Since it is known that for any kregular graph  $\lambda_1 = k$ , we investigated the two possibilities for the second dominant eigenvalue in regular graphs,  $\lambda_{\min}$  and  $\lambda_2$ . Specifically, we looked at numerically establishing bounds on these eigenvalues for given n and k and obtained data to better understand the minimum eigenvalue gap  $\lambda_1$ -  $\lambda_2$  for regular graphs. Selected for presentation at Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE.

**3K • 3** WELLES 138 SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

The Ultrapotent Corticosteroid, Clobetasol, Promotes Quiescence in the Vulvar Carcinoma Cell Line UMSCV-4 COURTNEY KING

FACULTY SPONSOR: JANI LEWIS, BIOLOGY

Vulvar cancer is rare, mostly afflicting women aged 60 and older. The cancer is often preceded by a common vulvar rash, Lichen sclerosis, that is treated with the ultra-potent corticosteroid, clobetasol. There is some concern that clobetasol can promote carcinogenesis in vulvar tissue. We have found that treatment of the vulvar carcinoma cell line. UMSCV-4. results in cellular quiescence. Removal of clobetasol allows a subpopulation of the UMSCV-4 cells to reenter the cell cycle. This subpopulation continues to grow even when clobetasol is replaced in the medium. This highlights the potential for vulvar cancer cells to evade cancer treatments in the presence of clobetasol and may lead to selection for more aggressive subpopulations.

**3L • 3** WELLES 24 SESSION CHAIR: JULIE RAO, INSTITUTIONAL RESEARCH

Searches, Rescues and Recoveries in Hamilton County, New York State from 2014-2016 KIRSTEN LOMNITZER

# FACULTY SPONSOR: STEPHEN TULOWIECKI, GEOGRAPHY

Hamilton County is located in the heart of the Adirondack Park, and is the most rural county in all of New York State. The county's natural scenery and remote areas attract outdoor recreation, which leads to accidents that require emergency response in remote areas. The purpose of this research is to study spatial and temporal patterns in search, rescue, and recovery (SAR) incidents in Hamilton County. For this study, "searches" are defined as incidents where the the subject(s) are lost, missing or overdue; "rescues" are defined as incidents where the subject(s) location is known but subject(s) required assistance due to injury or illness; and "recoveries" are defined as retrieval of a deceased. Data was collected from Wildland Search and Rescue Incident Reports (WSRIRs), NYS GIS Clearinghouse and the Adirondack Park Agency website. Point locations and data on searches, rescues, and recoveries were were obtained from WSRIRs and then mapped using GIS software. Numerous aspects of these events were studied, such as time of incident, gender of the subjects, age of subjects, activity of subjects and last known location. This research has the potential to assist future SAR efforts by highlighting various trends in such incidents.

**3M • 3** WELLES 26 SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

#### CAS Ambassadorship in Entrepreneurship: StandUp Leadership COLLEEN STEWARD

FACULTY SPONSOR: JOSEPH COPE, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

Around the country, overshadowed high school students, which may include introverts or lowincome students, are not given as many leadership opportunities. StandUp Leadership is a not-forprofit organization dedicated to facilitating leadership events on college campuses for these qualified, but overlooked high school students. The original goal for my Ambassadorship was to move forward with a project plan that I helped develop during an entrepreneurial course. I was interested in designing a business model that could effectively market StandUp Leadership to other institutions as a bridge program that connected a unique population of high school students to their campus. However, the focus of my Ambassadorship soon evolved into incorporating entrepreneurial components into the Geneseo StandUp Leadership conference. At our November 17th event, I was able to present three workshops on entrepreneurship and table during our networking hour. My curriculum was focused on establishing a basic awareness of entrepreneurship and allowed students the opportunity to design their own business ideas about topics they cared about. Innovation and creativity in leadership was the unifying theme. Additionally, sustainability measures have been taken to incorporate elements of entrepreneurship into future events. This project was funded by the CAS Ambassadorship in Entrepreneurship.

#### CONCURRENT PRESENTATIONS 4 • 3:50 - 5:05PM

#### 4A • ANTHROPOLOGY BAILEY 104 GREAT APES: PAST AND PRESENT

FACULTY SPONSOR AND SESSION CHAIR: BARBARA WELKER, ANTHROPOLOGY

#### Bite Force Analysis of the Human Mandible: Assessing Jaw Capabilities of Human Ancestors HARRISON MOSES

Describing the capabilities and limitations of jaw morphology throughout evolutionary history provides a clear picture of what human ancestors were capable of eating, and how they processed their food. The chewing and maximum biting capabilities of 10 individuals were assessed with a bite force pressure gauge. Known skeletal correlates of bite force, including length of the ramus and body of the mandible, the magnitude of the gonial angle, and occlusal surface area of the lower dentition were also measured. These data were compared with corresponding skeletal measurements taken from casts of A. afarensis, Homo neanderthalensis, and Homo heidelbergensis to approximate their maximum bite force and chewing capabilities. The correlations found between maximum bite force, the gonial angle, and occlusal surface area were significantly stronger than those found for the chewing force. This study evaluates the usefulness of considering both maximal bite force and chewing force in dietary research methods. Further, implications of the data are considered in terms of food choice throughout evolutionary history.

#### Miocene Fossil Apes: *Equatorius, Morotopithecus*, and *Rudapithecus* BRYAN HARRISON

Seven students conducted research over the past year that will culminate in an edited volume on Miocene fossil ape genera from Africa, Europe, and Asia. I will be presenting my research on three of the genera, *Equatorius, Morotopithecus*, and *Rudapithecus*. I will discuss sites and people involved in their discovery, the hypodigm, physical characteristics and locomotion, and environment and ecology. In addition, comparisons among the genera will emphasize similarities and differences between them, taking into consideration geographic distribution and temporal distance. Equatorius africanus was a large-bodied, semiterrestrial ape from wooded forests in the areas of Kipsaramon and Maboko Island in Kenya. Morotopithecus bishopi was a large-bodied frugivorous quadruped from the Moroto sites in Northeastern Uganda. Rudapithecus hungaricus was an arboreal ape that used its suspensory and climbing capabilities to move through its subtropical, seasonal forest habitat in search of fruit. It is known from multiple sites in Rudabánya, Hungary.

#### Miocene Fossil Apes: Dryopithecus, Hispanopithecus, and Sivapithecus KATIE ALLEN

Over the last year extensive research on Miocene fossil apes was conducted to create an edited volume on the various genera that lived during that epoch. The research includes information on people involved in the discovery, sites and fossils, phylogeny and taxonomy, physical characteristics, and environment/way of life. Three genera will be presented, Dryopithecus, Hispanopithecus, and Sivapithecus. Dryopithecus was a Eurasian ape that is most well known for being the first Miocene fossil ape ever discovered. There are numerous species attributed to Dryopithecus, many of which are contested by different researchers. Hispanopithecus was a European ape consisting of two species: H. laietanus, which was previously assigned to Dryopithecus, and H. crusafonti. They were believed to have been above branch quadrupeds with a high intermembral index (IMI), i.e. a ratio to compare limb proportions. Sivapithecus was an Asian ape consisting of three species: S. indicus, S. sivalensis, and S. parvada. There are also many hypotheses surrounding the phylogeny of Sivapithecus, however, a popular

belief is that they are a basal hominid, or the earliest and most primitive ancestor of modern day orangutans.

4B • BIOLOGY & MATHEMATICS MODELING 3 ISC 136 FACULTY SPONSOR AND SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY

#### Determining Optimal Antimicrobial Treatments based on a Two-Dimensional Model of Biofilm-

#### Inferred Resistance Mechanisms MATTHEW COTRONEO, ANGELA KUBIK, JANE FENG

Eighty percent of bacterial pathogenesis in humans result from biofilm forming microorganisms. Biofilms confer greater resistance to antimicrobials than planktonic bacteria. Through understanding the mechanisms of resistance and the effect of antimicrobial treatments on biofilms exhibiting these behaviors, an optimal treatment in regards to each mechanism is determined. First, this study models three proposed mechanisms of resistance: (1) slowed antimicrobial agent penetration, (2) adaptive stress responses, and (3) persistors. These models are incorporated into a Cellular Automata (N2c) model for a generic biofilm population which accounts for substrate diffusion and reaction and biomass growth, decay, and spreading of particulate bacteria in discrete time steps. The model runs for a biofilm with no resistance mechanism (control) receiving antimicrobials in a short dose (90 mg/kg patient mass daily for four days), a standard dose (40 mg/kg daily for ten days), and an extended dose (40 mg/kg daily for fourteen days). The model also runs under each of these conditions, implementing the resistance mechanisms. For mechanism (1), an extended dose results in shortest time to total biofilm death. For mechanism (2), a short dose is optimal. For mechanism (3), no regiment is statistically most effective.

#### Determining the Most Effective Approach to Reduce the Spread of Brucellosis in the Greater Yellowstone Ecosystem Using a System of Difference Equations BRIANA KUBIK, CLARK DAVIS, EMILY MARTIN

The spread of brucellosis, a bacterial disease, from elk and bison populations in the Greater Yellowstone Ecosystem to surrounding cattle ranches has the potential to inflict major economic damage on the cattle industry. The consumption of meat contaminated with the Brucella abortus bacteria can cause human illness and, if detected in a herd, can result in an extensive guarantine until the disease has been eradicated from the herd. Finding the most effective way to reduce the spread of brucellosis will help prevent human illness and economic loss. Using a system of difference equations, we created a model that depicts the dynamics of the susceptible, infectious, recovered, and vaccinated classes of bison and elk over time. We manipulate the rate of vaccination in both the elk and bison populations to determine the extent of disease spread in the population. Results show that a 12% annual vaccination rate of the susceptible class would be the threshold vaccination rate to produce a suitable decrease in disease spread. Vaccinating at a rate of 12% per year is a viable method to reduce the spread of brucellosis in the region, and could help to protect cattle ranches from economic loss and prevent illness in humans.

#### Dynamics of Hepatitis C Infection in and Preventative Care for People Who Inject Drugs

ARIC HUBER, MELANIE KIRK, CHRISTINE SCHULTZ Hepatitis C is a +ssRNA virus that has infected a substantial number of individuals worldwide, and is notably prevalent among populations of PWID (People Who Inject Drugs). Our model is based on the population of PWID in Newark, NJ, which is approximately 6,000 individuals. We investigate the effect of antiviral treatments on a varving percentage of infected individuals, and the injection-related risk of infection connected to drug use. A differential equation model and a small world network model test the potential spread of hepatitis C, based on an SIS compartment model. The differential equation model explores the effect of treating infected individuals at random throughout the population, finding that there is a distinct effect when treating relatively small percentages of the population. The network model finds that introducing clean needles into the population has a large potential to prevent infection. A clean needle program, therefore, would be a viable and worthwhile preventative measure in controlling the spread of hepatitis C.

#### Effectiveness of Vaccination in Limiting the Spread of Influenza MEGAN PIERPOINT, RACHEL HAMBERGER, MARY PYATT

Influenza is a virus that is constantly changing and evolving through antigenic drift and antigenic shift. It is essential that the vaccination administered targets the newly evolved virus in order to protect the population. To investigate the effectiveness of the vaccine on the spread of influenza, we constructed a network model and a differential equation model. We used data from a 2005 hospital outbreak to parameterize the models. We determined an average vaccination frequency within the population with data from the CDC for the last five flu seasons. The differential equation model shows a linear decrease in the number of people infected as the vaccination effectiveness increased to 100%. The stochastic network model displays a decrease in the number of people infected. Additionally, we measured the effect on the peak number infected. This represents the burden of the disease on healthcare systems. Our results highlight the importance of the vaccine effectiveness in minimizing seasonal influenza epidemics.

#### 4C • BUSINESS BIG TREE INN

#### VentureWorks Student Investor Presentations

FACULTY SPONSOR AND SESSION CHAIR: JUDY ALBERS, BUSINESS

DAVID AGADZHANYAN, RYAN ANDREWS, LYDIA BAILEY, JACOB COLE, LAUREN CROWE, IVANA GABRIELE, ISAAC GARCIA CASSANI, JACOB HAMILTON, GRAHAM HARRISON. JACOB HOROWITZ, JUAN JIMENEZ, MEGAN JONES, NICHOLAS LAURITANO, ANH MAI. ADAM MALACHOWSKI, JAYESH PATIL, PILAR PILAR PIEDRAHITA, CHARLES PUGLISI, ZACHARY RESNICK, JOHN ROBINSON, ANGELA RODRIGUEZ, ABIGAYLE SCHMITZ, JASON YOUNG, RAFAEL ZIOTTO

Students in the VentureWorks entrepreneurship program will be competing in the ninth annual New York Business Plan Competition (NYBPC). The competition begins with regional semi-final rounds in each of New York's 10 Regional Economic Development Council zones. These regional competitions are generally held in early April. The top twelve teams from each of the 10 regions will then advance to the final round of the statewide competition, where they will go head-to-head for monetary prizes in Albany on April 27. Geneseo is in the Finger Lakes region and our student teams will be competing in the semi-final rounds on April 11. We expect that some of our teams will be selected to advance to Albany. Those teams will be delivering their investor presentations at GREAT Day. Selected for presentation at New York Business Plan Competition, Rochester, NY and Albany, NY.

### 4D • COMMUNICATION BAILEY 103 Students Teaching Students: A Different Approach to Flipped

#### Classroom Pedagogy

FACULTY SPONSOR AND SESSION CHAIR: LEE PIERCE, COMMUNICATION

#### Engaging Students in Friendship Communication JESUS HERNANDEZ

This series of videos were designed for use in an introductory Interpersonal Communication class to increase engagement and preparation for a flipped classroom mode. Specifically, this series of videos will draw on foundational literature regarding

communication and friendship while making that material more engaging by introducing newer popular perspectives likely to meet the experiences of traditional-aged college students of diverse backgrounds.

#### Romantic Communication for a Flipped Classroom KATIE JOYCE

This series of videos were designed for use in an introductory Interpersonal Communication class to increase engagement and preparation for a flipped classroom mode. Specifically, this series of videos will draw on foundational literature regarding communication and romantic relationships while making that material more engaging by introducing newer popular perspectives likely to meet the experiences of traditional-aged college students of diverse backgrounds.

#### 4F • ENGLISH WELLES 216 Undemocratic Athens and Dangerous Denmark: Problems of Democracy and Justice

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH SESSION CHAIR: HANNAH MADDEN

#### Plato's Views Indicate that the Problems of United States are Due to Democracy

#### STEPHANIE MELLIN

This paper explains the difference between the opinion of Adam Littlestone-Luria's article "What the Founding Fathers got Wrong about Democracy" and Plato, who argues that democracy is ineffective and actually closely related to tyranny. Both the article and Plato discuss the flaws of democracy. However, the article explains that in order to fix the current issues in America the government should model itself on the direct democratic system of Athens, whereas Plato thinks that democracy should not be practiced at all. Over the course of the last two years, it is common and unsurprising to find the news covering the blunders of our government, and many criticize democracy because of it. Plato would attribute America's flaws to how and why leaders are elected and how Americans have "unnecessary appetites" for immediate desires rather than thinking long term. Overall, this paper examines Plato's main points about how democracy is degenerative and how this compares to Littlestone-Luria's comments in his article.

#### The Atrocities of Athenian Democracy JESSICA FLETCHER

This essay details Athenian aggression its impact on the world as described by Thucydides in the *History* of the Peloponnesian War. Thucydides, the first true historical writer, relays the atrocities committed by Athenians in a surprisingly relevant work. His commentary remains timeless, especially in today's political climate. In this essay, I look at Thucydides' piece with 21st century eyes, as he describes in length the true intentions of the democratic Athens. The piece unveils the monstrosities committed during the Peloponnesian War that are oft-forgotten, but still have a powerful impact on the reader. The essay provides a look at the bravery behind Thucydides' work, and his groundbreaking movement towards unbiased historical retelling, regardless of his own nationality. His courageous literary achievement led to accurate documentation of past events and helped shape the world as we know it. Without Thucydides, the pursuit of impartial knowledge would be impacted, severely altering the course of history.

#### Hamlet's Reckoning: A Look at Hamlet as a Symbol for Victims of Sexual Harrassment and Assault EMMA MEDINA

This paper focuses on sexual harassment/assault and how Hamlet, the character, can be a symbol for victims of sexual harassment/assault. Specifically, it focuses on how victims are finally getting a platform to voice their concerns and how Hamlet can also be seen as a failed victim - failed in the sense that he could possibly have gotten justice sooner if not for doubt. For Hamlet, it is doubt that is his downfall; however, as a symbol for sexual assault victims, the doubt translates into internalized misogyny and gas-lighting. Internalized misogyny and gas-lighting are tools used to keep victims from speaking out, but there are also many arguments for how victims should take their "reckoning" as Nellie Bowles points out in the article that informs this paper. This paper examines how Hamlet's failure to get swift justice without collateral is the answer to Nellie Bowles' question and article, "Reckoning on Sexual Misconduct? Absolutely. But How Harsh, Women Ask."

#### 4G • ENGLISH WELLES 133 ESOL CULTURAL EXPERIENCES

FACULTY SPONSOR AND SESSION CHAIR: IRENE BELYAKOV-GOODMAN, ENGLISH

# Auxiliary Verbs in the Russian Language

#### **KATHERINE KASHA**

Through a vigorous study of the Russian language and its history, multiple scholars have found that the Russian language exists without the verb "to be" or "byt," and has survived as a language. Although this verb is important in many other languages, such as English and Romance languages, the Russian language does not require this verb to be either spoken or written in the present tense and the language is understood completely without its use. As a Slavic language, Russian has developed vastly since the development of the Old-Russian language. There is not one right answer as to why the Russian language does not use the verb "to be" in the present tense. It has not been abolished, however, such as the xu ending from the 11th century. Furthermore, Russian allows for a variety of differences in communication, both written and verbal, such as changing the SVO form and giving more structural freedom to Russian speakers. As a language, Russian has evolved tremendously and is widely spoken by over 144 million people. Even without the infamous "to be" auxiliary verb, the Russian language is phenomenal.

#### 🔊 Promotes sustainability

# The Dutch Education System MATTY MEIJER

In this presentation I will take you through the Dutch education system. In only fifteen minutes I will show you how we go from kindergarten to university, and the many sidetracks we might take along the way.

#### **Reforming French Education** ELISABETH NAIDITCH

This work is about how I have been taught English in France since elementary school, when I was eight years old. I look at my past experiences with a reflective eye, pinpointing the advantages of all the methods that have been used throughout my education, but also underlining the negative parts of those same methods. Furthermore, I present two teachers that have radically changed my interest in English and explain their methods of teaching. Eventually, I give some ideas about how to reform education in general. My reflection is based on the example of French education, but I would like to open my mind and everyone else's by broadening our horizons through some ideas for reforming the education system.

#### Tip of the Tongue Moments as Man Bites Dog NEHA MAROLIA

This presentation will highlight some of the techniques and activities I have had the chance to work on with my International Speech Buddy as an ESL tutor. With this PowerPoint presentation, I will be introducing my Speech Buddy, discussing the informal assessments, language difficulties, meeting objectives, and how the tutoring became an impactful learning experience for both of us. By drawing attention to the importance of TESOL, the significance of learning, speaking, and writing English for bilingual students will be discussed. Along with English, the significance of American current events is an important aspect to consider when assimilating and learning about a new culture and its language. ENGL 277: Methods of Teaching English to Speakers of Other Languages is

#### 4H • GEOGRAPHY GEOGRAPHY

on diversity for all students.

FACULTY SPONSOR AND SESSION CHAIR: DARRELL NORRIS, GEOGRAPHY

BAILEY 102

a life changing course, as it broadens perspectives

# Oil Insurgency in the Niger Delta SHANNON CURLEY

Environmental issues collide with social and economic problems in Southern Nigeria's Niger Delta. For decades oil has been spilled and left to destroy the ecosystem and the livelihoods of the Deltan people. Anger over decades of injustice has led to several insurgent movements in the last 20 years, most notably 2006-2009's Movement for the Emancipation of the Niger Delta (MEND) and 2015's Niger Delta Avengers (NDA). To retaliate against the multinational corporations and federal government, these groups have focused on crippling oil output by attacking pipelines. For the time period of 2014-2017, a quadrat system and chi-squared analysis were used to uncover patterns related to time, location, and type of attacks. The attacks occurred more often with nonexplosives, on smaller branch pipelines, and in the summer months. News reports, NDA blog posts, and academic writings were also used to provide context for the data. This qualitative information detailed some government decisions regarding the Delta's oil as well as local perceptions of oil companies and the government. Ultimately, this research seeks to uncover the causes of a deeply rooted insurgent movement and provide insight to future conflict in the region.

#### Predicting African Flight Travel S KRISTEN ARMSTRONG

The number of international flights to Africa varies greatly from country-to-country. Though Africa has relatively less air traffic than most of the world, why do some countries experience so much more flight travel than others? It is possible to explain this diversity through the analysis of economic, political, and geographic factors. This study examines the correlation of multiple variables to international flight volume to Africa. Many variables show trends that can help explain the significance and reasons for air travel or the lack of it. However, it turns out only two variables account for most diversity in flight volume. Using these it is possible to predict the volume of African flights.

#### Poverty in the Developing World: Miscalculation and Misunderstanding S ALEXANDER FINDEIS

The UN Millennium Development goals set out to reduce poverty at \$1.25 per day by 50% between 1990 and 2015 - a goal that was reached. However, is \$1.25 per day an accurate measurement of poverty? In order to fight poverty effectively, it is necessary to have a clear understanding of what it is and how it relates to other socio-economic factors. This research project examines 31 developing countries over the course of 2000-2010 using data from the World Bank. By comparing socio-economic factors such as GDP, exports, HDI, Freedom House Indexes, population, etc., the interactions between key variables can be identified. Through this analysis of key factors and differing measurements of poverty, this paper will show that current understandings of poverty, and proposed solutions for it, are lacking in accuracy and viability. Only by beginning to reimagine the methods of measuring poverty can a constructive conversation be held on how to eradicate it.

#### 4I • GOLD

MCU 114

SESSION CHAIR: THOMAS MATTHEWS, GOLD

#### Reflection on Community Engagement (GOLD) - Using Personal Resources S KEVIN PIERCE

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD NICHOLAS PALUMBO, CENTER FOR COMMUNITY The purpose of this presentation and discussion is to reflect on civic engagement upon the completion of the Diamond Leadership Certificate. The certificate requires participants to engage in community service and civic engagement while taking part in workshops, engaging in dialogues, and reflecting on their experiences. The 2018 Geneseo Recognizing Excellence Achievement and Talent Day • 12th Annual

presentation will ask participants to reflect on their personal journey, their aspirations as young adults and their path of leadership. The experiences will be contextualized in a discussion of the methods of youth leadership development and methods to take the "natural resources" of passionate young minds to create meaningful change and a generation of leaders.

# Give Kids The World Alternative Spring Break 2018

CHRIS CUMMINS, SHEA KINSELLA, OLIVIA KERR, CHRYSTYNA TSUVANYK, STEPHANIE PEARL, MARY PEZZIMENTI, SARA REPPENHAGEN, ANGELA NORRIS, DANIELLE SCHULMAN, GUS FORMATO, HANNAH CHASE, TESS ROMANO, CASEY MAE FILIACI, PATRICK BUCKLEY

FACULTY SPONSOR: DAVID PARFITT, CENTER FOR COMMUNITY WELLNESS

Give Kids The World is a nonprofit village located in Kissimmee, Florida where children with lifethreatening illnesses and their families can stay for a weeklong, cost-free vacation. For the past 9 years Dr. David Parfitt has taken a group of 12-13 Geneseo students down to the Village to volunteer for a week. Students work shifts throughout the week and help with various activities including serving meals, entertainment, participating in the evening activities, and doing service projects around the village. They help with weekly Village events such as the Winter Wonderland and Halloween party, scoop ice cream, serve breakfast at the Gingerbread house, and run the carousel. In this presentation, students will discuss the history of the Village, what it means to volunteer there, and their personal experiences. An emphasis will be placed on how the Village has affected each student and what they have gained from the trip, as well as on how others can be involved and help the cause.

# Voting at SUNY Geneseo and Why it Matters g

#### PATRICK BUCKLEY

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD In the 2014 midterm election, only 6.3% of students at SUNY Geneseo voted. In response, the Voter Registration and Engagement Task Force was created to increase the voting rate and to promote the college's value of civic responsibility. Attendees will learn about the current state of the voting culture at SUNY Geneseo and will be introduced to the importance of this hard-won privilege. Also, I will provide a brief overview of my service work as an Andrew Goodman Foundation Vote Everywhere Ambassador. This presentation is to fulfill the final requirement of the GOLD program's Diamond Leadership Through Community Engagement Certificate.

#### 4J • HISTORY WELLES 132 THE MEANING OF EMANCIPATION: LINCOLN, INTERRACIAL MARRIAGE, AND THE COLFAX MASSACRE

FACULTY SPONSOR: JUSTIN BEHREND, HISTORY SESSION CHAIR: JUSTIN BEHREND, HISTORY

#### Liberation through Language: How the Evolution of Lincoln's Rhetoric Led the Nation through Crisis ERIN HERBST

My presentation is an in-depth study of Abraham Lincoln's rhetoric, focusing on his usage of words such as "liberty," "equality," and "liberation." In my research, it became evident that his thoughts on morality, especially concerning racial slavery, changed over time. This presentation is an adaptation of a twenty page research paper for a History of Emancipation class, but is also interdisciplinary in its methodological approaches from both history and English. Lincoln provided the country with a strong voice, steeped in figurative language, to soothe the nation and propel it through a time of rapid change, including war and emancipation. Because we rely on the words of leaders, it is essential that we understand the significance those words hold. Lincoln provides a great example for this. Through looking specifically at key words. I show how Lincoln changed the connotations of traditional "American" concepts, so that the white public would better embrace the humanity of African Americans. I argue that in the Emancipation Proclamation, Lincoln's words take on a more significant moral meaning in their relationship with what constitutes a human life and what people are entitled to as citizens - socially and legally - in the United States. Selected for presentation at Writing Rights, Righting Wrongs: Transatlantic Narratives of Race, Huron University College, London, Ontario.

### The Changing Landscape of Black-White Interracial Relationships: From Slavery to the End of Reconstruction

This paper analyzes the effect emancipation had on interracial relationships. The first part examines American society prior to the end of slavery and the Emancipation Era, discussing anti-abolitionist mob-violence in New York as well as taking a close look at how different people in the antebellum South operated in these relationships and how they were viewed (for example, comparing the position of the white male slaveholder to the black female slave). The second part focuses on interracial relationships and marriages during and after the emancipation era. Black people as a whole were now labelled, at least under the law, as human beings, as opposed to property. This notion alone changed both the legal and social context that interracial relationships took place in. While towards the end of emancipation and at the beginning of Reconstruction segregation of the races was common throughout the country, antimiscegenation laws -- laws that banned interracial relationships/marriages -- were used as a specific tool to ensure that segregation continued and ideals still held from the institution of slavery were enforced. Examining how interracial relationships were thought about before and after emancipation gives a sense of how deeply ingrained both racial and gendered hierarchies were. Selected for presentation at Writing Rights, Righting Wrongs: Transatlantic Narratives of Race, Huron University College, London, Ontario.

#### The Colfax Massacre: A Forgotten Chapter of Violence JAMES HAMILTON

On April 13, 1873, hundreds of armed, white men laid siege to the county courthouse in Colfax, Louisiana. A smaller group of African American men defended the courthouse, asserting their claim that Republicans were the legitimate victors in highly contested 1872 state election. The white paramilitary forces attacked the courthouse on Easter Sunday, slaughtered many of the defendants, and executed dozens of prisoners. Known today as the Colfax Massacre, it is one of the largest mass murders to ever occur on American soil. Although as many as a hundred and no fewer than sixty-two black men were killed at Colfax, it is disregarded in traditional narratives of Reconstruction. My paper attempts to show why the Colfax Massacre, and the violence it inspired, should be at the center of Reconstruction narratives. Understanding Colfax is central to explaining how white southerners were able to so effectively combat African Americans' political power. It also forces us to confront the role that violence played in Reconstruction and the legacy of white supremacy. Selected for presentation at Writing Rights, Righting Wrongs: Transatlantic Narratives of Race, Huron University College, London, Ontario.

#### 4K • MATHEMATICS WELLES 121 MATHEMATICS 1

FACULTY SPONSOR AND SESSION CHAIR: CHI MING TANG, MATHEMATICS

#### Time Series: Quarterly Net Revenue for Amazon

#### ANDREW FLANNERY

Using regression and time series techniques, we will construct a model that predicts the future quarterly net revenue for Amazon. By use of ANOVA tables, R<sup>2</sup> values, standard deviations, and overall significance of a handful of different models, we can choose our best model to perform our time series. As we can see from our output, our best model is determined to be  $E[y_t] = \beta_0 + \beta_1 t +$  $\beta_2 Q_1 t + \beta_3 Q_2 t + \beta_4 Q_3 t + \beta_5 t_2 + R_t$ , where  $R_t$  accounts for the autocorrelation in the residuals of our model. Lastly, using a 95% prediction interval using the MSE of our model, we can determine if our model is in fact useful for predicting the future values of the quarterly net revenue for Amazon. As we can see from our four prediction intervals, using the true value for the future guarterly, our model is accurate for three of the quarters, and our prediction falls just below our interval for the fourth quarter. Therefore, we determine that our model is a useful time series model for the quarterly net revenue of Amazon.

# Option Pricing Using the Taylor Series

#### ZACHARY DORUSHKIN

A problem arises in mathematics when trying to find a finite result for the sum of an infinite series. In 1715, Brook Taylor formally introduced a solution to this problem that had troubled mathematicians for hundreds of years. Taylor theorized that an infinite sum of terms could be approximated by using a finite number of terms. This is known as Taylor's Series. These terms are calculated from the values of the functions derivatives around a single point. Taylor's Series can be applied to many real world concepts. Call and put options are frequently priced using the Black-Scholes pricing model. The model contains many derivatives related to various properties of options. The Delta-gamma Approximation is a manipulation of Taylor's Series that is used to calculate the change in option price. This presentation will discuss how Taylor's Series is manipulated to obtain the Delta-gamma Approximation as well as extensions of the approximation.

#### Predicting America's GDP S CAROLINE RUPP

Have you ever wondered how economists and mathematicians work together to forecast America's GDP? I will be presenting on some methods used to predict quarterly data using a time period of fifteen years. Depending on the trend and seasonality of the time series data. each method will lead to a different forecasted value. I found that using the moving average and double exponential smoothing methods produced accurate predictions for the 2017 guarter one GDP. In addition, I will be testing the data against different regression equations, beginning with the fundamental linear regression and ending with a piecewise linear regression, to try and improve the R<sup>2</sup> value as well as residual fit plot. Finally, I checked the residuals for autocorrelation, which will show how strong the internal association is at a specific point within a time series. Using the ACF value in Minitab. I was able to forecast quarter one of 2017 using the simplest regression and the piecewise equation. While the forecasts from the double exponential method and autoregressive model with piecewise regression were within a hundred units of the actual value, autoregressive model with simple linear regression was the closest prediction.

#### Modeling Crime in the U.S. S KEVIN BRADY, KEVIN BRADY, KEVIN MCGRATH, RYAN KELLY

Regression analysis is the statistical process of estimating the relationships among variables. This project explores this mathematical technique through analyzing the relationship between time and crime. By using data presented by the FBI spanning 20 years, we investigate these two variables and how they interact with each other. We will create multiple regression models, determine which model is best fit to the data, and then use different forecasting techniques to determine what crime totals may look like in the coming years. To expand on this we will then analyze a separate set of data that comes from a smaller area of the nation, Suffolk County. This set of data also stretches over the span of nearly 50 years, allowing us to increase our accuracy with a larger sample size . After creating regression models and testing for this specific area, we will come to a conclusion on the relationship between crime and time, as well as compare the results between the entire nation's data, and Suffolk County's data.

WELLES 123

4L • MATHEMATICS

**MATHEMATICS 2** 

SESSION CHAIR: DOUG BALDWIN, MATHEMATICS

# Parameter Identification in a Mixing Problem

FACULTY SPONSOR: SEDAR NGOMA, MATHEMATICS

In a developed and industrialized world, pollution has become an inexorable threat to the environment. While it has been associated with forms of technological advancement for the good of human beings, it has reached the point of doing more damage than repair to the environment. Traditionally to determine the concentration of a solute at any moment in time in a given vessel, parameters such as initial concentration of the solute, volume of the vessel, rates of inflow and outflow, and the inflow concentration of the solute were used. However, measured data of concentrations of the solute in a vessel at appropriate times could be used to obtain parameters which are determined as solutions to an inverse procedure. In this work we consider a situation where a pollutant with an unknown timedependent concentration leaks at a known rate into a vessel containing a known volume of liquid; and the well-mixed liquid leaves the vessel at the same rate it enters. We develop a finite difference algorithm to approximate the variable inflow concentration for any time in a given interval. Numerical experiments and results obtained show that this technique is a reliable procedure for approximating time-dependent inflow concentrations.

#### Analyzing Sentiment of Biology Class Surveys GABRIELLE ANGELORO, GABRIELLE ANGELORO, TOLULOPE OLATUNBOSUN, JULIA WITKOWSKI FACULTY SPONSOR: DOUG BALDWIN.

MATHEMATICS

Due to an influx of opinion-based data, sentiment analysis has emerged as an exciting subfield of machine learning. We will give an introduction to sentiment analysis and present an application to assign sentiments to Geneseo biology class reviews. Specifically, this research uses random forests to train trigrams and classify reviews. We discuss the implementation of this technique and quantify the accuracy of our resulting classifications as compared to a human expert. Finally, we will analyze the strengths and weaknesses of using machine learning for classifying sentiments of student evaluations.

#### 4M • MUSIC DOTY RECITAL HALL EDGAR FELLOWS 10

FACULTY SPONSOR AND SESSION CHAIR: MICHAEL MASCI, MUSIC

#### Writing a Modern Short Mass

SIMONE LOUIE, SIMONE LOUIE, NOAH CHICHESTER, JENNIFER BENDER, CESAR FLORES, VALERIE SCARANO, JULIA MCGAUGH, HANNAH MCCLOW, AMANDA SALADINO, HANNA FOX, MATTHEW BURLEY, BENJAMIN BERNSTEIN, DANIEL CHICHESTER, CHRISTOPHER RUDIN, MATT CRAWFORD, ELIJAH BUCK, BLAIN SHINKLE, MARIAH MCCARRON, BRIANNA RIGGIO The goal of this project is to compose a Missa Brevis ("brief mass") using the traditional Greek and Latin text of the Missa Brevis and contemporary harmonies, and to have the piece performed. The Missa Brevis is a musical form that has been present since the Renaissance period, and composers from Mozart to Poulenc to Stravinsky have created Missa Breves with their own musical language and styles. The ways that the music interacts with the text in my Missa Brevis echo the ways other Missa Breves express the same text; more specifically, how the themes of supplication, suffering, joy, and glory are expressed, and how different sections of the Missa Brevis speak to one another. After listening to, comparing, and analyzing different composers' Missa Breves and observing different composers' musical choices (concerning key relations, tempo, texture, etc.), I composed my own Missa Brevis for an SATB choir and organized sixteen singers and a conductor to rehearse the piece once a week and perform it. Selected for presentation at Christ Community Church Sunday service, Geneseo, NY.

#### 4N • EDUCATION ISC 115 PHOTOMETRIC STUDIES OF OPEN STAR CLUSTERS: A JOURNEY THROUGH SCIENCE

FACULTY SPONSOR: DENNIS SHOWERS, EDUCATION

FACULTY SPONSOR AND SESSION CHAIR AARON STEINHAUER, PHYSICS & ASTRONOMY

#### Photometry of M34 and M41 CLAIRE PRUNIER, ERIC PIATO, LYNN MYERS, KELSEY KWANDRANS

Students in the HONR 205/215 course performed a photometric study on the M34 and M41 star clusters using advanced astronomical techniques. Working in IRAF in a Unix environment, students performed various analyses on several different clusters of stars, including identifying stars in the images, determining magnitude of stars, and comparing images of stars taken using different filters. Through this analysis, students have identified likely cluster members, and determined cluster parameters such age and distance.

# Photometry of M3, M48, and NGC 2420

# ALEXIS SAUNDERS, DEANNA PALMA, SCOTT WILLIAMS, TIMOTHY SNYDER, KYLE POWERS

Students in the HONR 205/215 course performed a photometric study on the M3, M48, and NGC 2420 star clusters using advanced astronomical techniques. Working in IRAF in a Unix environment, students performed various analyses on several different clusters of stars, including identifying stars in the images, determining magnitude of stars, and comparing images of stars taken using different filters. Through this analysis, students have identified likely cluster members and determined cluster parameters such age and distance.

#### 40 • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

MILNE 105

#### MOCK TRIAL PRESENTS THE COURT CASE OF THE YEAR: MIDLANDS V. HENDRICKS

FACULTY SPONSOR AND SESSION CHAIR: JOANNA KIRK, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

#### ERIN LIEBERMAN, KATRINA TILLAPAUGH, ERIN CARLIN, MATT BROWN, TAYLOR GROSSKOPF, MEGAN METZ, MICHAELA OMENCINSKY, JULIA BATTISTA, RYAN HALLOCK, RYAN MADDEN, AUDREY HOLLICK, RYAN FORTUNA

The State of Midlands has charged Dylan Hendricks with the attempted murder of Kerry Bell-Leon. Dylan is a local soup truck owner, who likes to use the dating app Tinder to meet new people. On Tinder, Dylan meets Carmen, Kerry's spouse, and they begin having an affair. On July 16, 2017, someone snuck into the Bell-Leon condo and attempted to murder Kerry. Was it Dylan? Or is Dylan being wrongly accused? You members of the jury must determine if Dylan is innocent or guilty, after hearing the testimony of a variety of witnesses.

**4P • POTPOURRI** WELLES 131

### EDUCATION &

HISTORY

SESSION CHAIR: ANNE BALDWIN, SPONSORED RESEARCH

#### Gender and Race in Colonial India, 1765-1947 (The Next Episode) CHASE CHIAMULERA

FACULTY SPONSOR: MEGAN ABBAS, HISTORY This paper will discuss the tropes and frames British authors (civil administrators, military officers, civilians, et al.) employed to conceive of Indian men. Some key elements of this discussion will be how the 1857 revolt dramatically changed these perceptions, what perceptions remained constant, and how Indian nationalists in the 20th century reappropriated or pushed back against these perceptions to help effect home rule. I will also discuss how spontaneous rumors can have very long-range effects on public perceptions of ethnic or political groups.

#### **Text Set Trailers: A New Approach to Inspire Literacy Engagement DYLAN FICHERA, TARA MENON MITSUYASU** FACULTY SPONSOR: THEA YURKEWECZ,

EDUCATION

Have you ever seen a movie trailer and thought: "I NEED to see that movie!"? How can we get students this excited to learn about literature? This presentation brings to life a project created in CURR-313 (Classroom Reading and Literature Programs) that blends Text Sets and Book Trailers to create a new didactic approach that inspires learners to explore various texts and themes. A Text Set is a framework that consists of several texts written with various levels of difficulty, modes, and genres that share common themes ("Teaching through Text Sets," 2013). The use of various materials helps students understand texts, which consist of qualitative, quantitative, and content appropriateness factors that are stressed in the Common Core State Standards (CCSS, 2010), promoting diversity and inclusion. In addition, teachers use book trailers to promote reader engagement through technology. We'd like to introduce a new tool to educators to enhance engagement with text by combining the visual excitement of a book trailer with the framework of a text set, ultimately creating a Text Set Trailer. This presentation will provide educators with this new way of enhancing engagement of learners through harmonizing literacy and technology.

# Sturges Hall and the Forgotten S.T.E.M.

JULIAN DAVID-DRORI

FACULTY SPONSOR: KATHLEEN MAPES, HISTORY As it currently stands, the Psychology Department at SUNY Geneseo makes its home in Bailey Hall where it produces terrific research and makes an impact, not only in the field psychology, but other subjects as well. However, it was not always this way, as the department actually used to be housed in Sturges Hall. During its time there, the members of the department had to put up with lackluster conditions, which caused setbacks for the department's research. Then, in 2004, after many years of back and forth between the faculty and administration, the department and its labs moved to Bailey Hall. This paper will use interviews, photos, and original documents to explain how the exodus of the Psychology Department from Sturges Hall to Bailey Hall is an important point in the long history of the department and is relevant in determining the trajectory of the department's future as a producer of important research.

#### 4Q • SOCIOLOGY BAILEY 105 EMOTIONAL HIGHS, EMOTIONAL ACHIEVEMENT, AND EMOTIONAL HEALING: SOCIOLOGICAL STUDIES OF EMOTIONS IN SOCIAL MOVEMENTS, PRISON MEDITATION, HORSEBACK RIDING, AND REGULAR RELIGIOUS PRACTICE

FACULTY SPONSOR AND SESSION CHAIR: STEVE DERNE, SOCIOLOGY

#### Does the Threat of Danger Diminish the Experience of Emotional Achievement in Social Movements? ALIA AEID

I examined the effects of participating in dangerous social movements on an individual's emotional achievement. This work seeks to better understand Guobin Yang's research which claims that social movements are a manifestation of the individual's motivation to self-validate. Following Yang's methodology of analyzing participant acts of storytelling, the direct sources used were written accounts describing the student movements in Tiananmen Square, China and the Egyptian Revolution of 2011. Prior to analyzing the data, I proposed that not all movements led to emotional achievement, specifically in circumstances of violent government repression. Instead, the data showed that danger had no effect on the emotional fulfillment of participants and therefore did not limit an individual's motivation to

self-validate. Further research is needed to examine the actual effect of danger on emotional achievement, but we are able to conclude that it does not act as a deterrent or buffer to reaching achievement.

#### Meditation Causes Emotional Healing to Change Prisoners' Lives EMILY STERNS

Poloma believes that inner and emotional healing can be caused by praying. Prayer will then lead to the resolution of excessive fear, anxiety, and/or depression. Forgiveness is part of emotional healing which leads to peace of mind and the ability to forgive others. Poloma's review of the path to emotional healing neglects to say whether emotional healing can be achieved through other means besides prayer. Therefore, this study examines how meditation leads to the emotional healing of prisoners serving life sentences. This study found that the strict meditation practice of Vipassana led to the emotional healing of these men with the same effects Poloma described from the outcome of praying.

### Mystic Experience: Union with the Grounds of Existence Through Horseback Riding

#### CHRISTINE GRACE

Chaudhuri says that mystic experience is the immediate meeting with the overall reason of existence. For Chaudhuri, yoga is the best method of having a mystic experience because the physical and mental processes involved in yoga can lead to having the same outcomes as mystic experience. These outcomes include positive shift in emotion, acquiring deep knowledge of the self, transience, and a sense of oneness with yourself and the world. If yoga can accomplish those effects for Chaudhuri, perhaps horseback riding can accomplish the same results for me. For my analysis, I relied on sociological introspection. I recorded my feelings before and after riding and whether my experience provided me with the same outcomes of mystic experience. My findings provided evidence that horseback riding can achieve the same outcomes as yoga in connection to mysticism. Through this study, I concluded that the benefits of mystic experience can be attained in any setting by anybody when their mental and physical energy is being focused into a singular, enjoyable endeavor.

#### Experiencing Lasting Emotional High Through Regular Religious Practice MAZARINE DESRUISSEAUX

Mystical experience is a transient experience that gives people an ineffable joy. When having a mystical experience, an ecstatic feeling is present which give people the feeling of having a lifechanging moment in their life. The purpose of this paper is to outline what it takes to make an emotional high of a mystical experience long lasting. Through introspection I use regular religious practice such as prayer and reading the scripture to try to reach a mystical experience. In my study I did not have a mystical experience, but I found out that regular religious practice does lead to lasting joy and a person doesn't have to have a mystical experience to have that ineffable joy.

#### 4R • STUDY ABROAD BAILEY 101 HAITI SERVICE LEARNING STUDY ABROAD

FACULTY SPONSOR: WESTON KENNISON, STUDY ABROAD

SESSION CHAIR: MARIE HENNING

# Economic Development and Mental Health in Borgne, Haiti S

MARIE HENNING, BRIANNA SCHIBLEY-LAIRD Since the earthquake in 2010 there has be an increase in the prevalence of mental health, after many Haitians were left with mental disorders regarding trauma and loss. Our presentation will discuss treatment options for mental health in Haiti and address the perception of the overall field of psychology and mental health by Haitians. During our study abroad course we were able to carry out interviews with the psychologist at the local hospital in Borgne to get a better grasp on how mental health treatment is handled there. One on the consistent issues in developing nations is the lack of economic development. After the earthquake the Haitian economy has had a difficult time. Our presentation will discuss the financial planning habits of households in Borgne, Haiti based on applied research we conducted through my spring break study abroad course to Borgne, Haiti. The goal of our project is to raise awareness of and promote economic growth and development in the town. While in Haiti we interviewed both individuals and businesses on their money spending and saving habits. Our presentation will also share what we gained from our applied learning experience and Haiti and

# A Conversation with the Women of Borgne, Haiti s

#### ANTOINETTE YANNOTTI, SARA FEINLAND

discuss our future plans for our projects.

Women's issues are present worldwide and are being brought to the forefront of policy making in many countries. Haiti has seen a drastic increase in the occurrence of sexual assault since the earthquake in 2010. Our presentation will examine the culturally specific issues Haitian women face related to sexual assault and violence. Through conversations with medical professionals at Alyans Sante Borgne (Borgne Health Alliance) as well as members of the Borgne community, we attempt to gain a better understanding of how sexual assault is viewed in this rural culture. Additionally, comparisons to the attitudes toward sexual assault and women's attitudes in the United States will be made. Implications of our observations and conversations will include an evaluation of the current support systems in place and what these groups need to further their goals.

#### Health Education: Tuberculosis and Nutrition in Borgne, Haiti REESE DZIENDZIEL, EMMA O'CONNELL

Health education is a major component of an effective health care system. In developing nations like Haiti, efforts are consistently made to strengthen health education programs in order to improve health outcomes and prevent disease. Our

projects focuses on two different, specific areas of health: nutrition and tuberculosis. Research for both projects was conducted during a week-long trip to Haiti as part of the INTD: Service Learning in Borgne, Haiti course. Sets of questions were developed and translated into Haitian Creole, aimed at gaining an understanding of the current health and sociocultural issues related to nutrition and tuberculosis. Based on information gathered from Haitian medical professionals, a health education presentation on the topic of tuberculosis was developed to be presented to patients at mobile medical clinics, and a growth chart project was undertaken to design an accessible tool for families to track the healthy growth of their children. The objective of both projects is to increase awareness of issues related to tuberculosis as well as the relationship between growth and nutrition.

#### 4S • WOMEN AND GENDER STUDIES WELLES 119

#### VISUAL REPRESENTATION OF GENDER IN GAMING, DC COMICS, AND ROCK AND ROLL

FACULTY SPONSOR AND SESSION CHAIR: MELANIE BLOOD, WOMEN AND GENDER STUDIES

#### Battles, Basilisks, and Bechdel: Analyzing Gender and Sexuality in Video Game Narrative SHAW SCHIAPPACASSE

Video games are one of the most rapidly expanding media in the world, and over the years there has been a shift to more narrative gameplay. The purpose of this project is to analyze video game narrative through the lens of preexisting gender and sexuality rhetoric originally intended for films, such as the Bechdel test, in order to compare the two forms of media and determine if one is less problematic, more inclusive, and more progressive than the other. Extensive research in both feminist film theory and a number of video games will be utilized to ascertain whether or not video games are the misogynistic, male dominated violent fantasy we sometimes perceive them to be, or if video games might be a new, effective, powerful medium for feminists of the digital age.

#### Playing the Right Note: Stereotypes of Women in Rock and Roll MEGHAN MURPHY

This presentation will explore the different stereotypes that categorized women during the early Rock and Roll era. This paper focuses on Janis Joplin, Joni Mitchell, and Stevie Nicks, all different artists that filled different niches in the Rock genre. Through an analysis of their performances and lyrics, this study will aim to discover how these artists both resist and/or fall into these stereotypes.

Sexual Violence and D.C. Comics: Moving the Plot Forward KYLIE MATHIS Despite the recent renewal of empowering, female-driven storylines, D.C. Comics has a long and troubled past with its treatment of female characters. This presentation will examine some of D.C. Comics most violent issues, including the infamous *Killing Joke* (1988), and discuss the recurrent use of sexual violence as a plot device. This presentation will also attempt to offer ways in which sexual violence can be depicted to empower characters, rather than victimize and fetishize.

#### 4U • BUSINESS SOUTH 340

#### New Research in Economics: Experimental/Behavioral and

#### Cultural Economics

FACULTY SPONSOR AND SESSION CHAIR: LEONIE STONE, BUSINESS

#### Apples and Oranges: Experimental Evidence on Willingness to Pay MADELYN ROSSI, ALLIE WACHTEL

Ariely (2009) and others have found that willingness to pay for different goods can be influenced by arbitrary numbers that create different anchor points for consumers. In a series of classroom experiments, we attempt to ask whether such anchor points can be created by either exposure to foods or to pictures of foods prior to selecting price points. We analyze this data and find significant differences in reference points relating to both experimental treatments and to demographic characteristics.

#### Busting the Blockbuster Code: Testing the Relationship between Political Ideology of Popular American Cinema and the American Public

#### **BRENDAN MAHONEY**

The examination of popular art as a reflection of the society that produced it enjoys a long history in the Western intellectual canon. Since the early nineteenth century, scholars of culture have viewed these artifacts as representations of a moment in time. But is this relationship something that can be quantified? Can the relationship between art and society be observed not only anecdotally but also statistically? Nineteenth century scholars cannot possibly have answered this question, but, with modern information technology, we may be closer than we realize. This paper attempts to examine the influence political ideology and popular cinema have on one another and the role markets play in facilitating that influence, while also attempting to construct empirical measures for future ideological analysis. It does this by building a Political Proximity of Production Index to measure ideology in popular cinema production using data from the Internet Movie Database as well as techniques from computer and network science. Furthermore, it tests the statistical associations of that index with various measures of political support like the net American party affiliations throughout the twentieth century. Selected for presentation at Eastern Economic Association, Boston, MA.

# POSTER SESSION 1 • 11:45 am – 12:45 pm COLLEGE UNION BALLROOM DIAGRAM ON BACK COVER

#### MUSIC

#### 100 • Mozart Might Have Touched It: A Close Up Look at an 18th Century Violin RYAN LEE

FACULTY SPONSOR: ANDREW BERGEVIN, MUSIC We will have a hands on look at the 18th century Neapolitan dynasty of violin making. The violins of the Gagliano family are among the most highly sought after instruments of the Neapolitan school. They are old and pricey, but what makes them so?

#### ANTHROPOLOGY

# 113 • An Education Approach for a Sustainable Outcome S ELISABETH BABLIN, EMMA SMITH

FACULTY SPONSOR: BARBARA WELKER, ANTHROPOLOGY

The objectives of this study are to (1) increase environmental awareness and sustainable practices among students on campus at SUNY Geneseo via tangible reminders, and (2) measure whether or not said increase in environmental awareness impacts electric usage on campus. A series of posters and magnets were purchased with an Undergraduate Research Grant. They were posted throughout five dormitories (Genesee, Onondaga, Monroe, Livingston, Steuben and Erie) during October 2017, reminding students to conserve water and electricity via turning off lights when leaving rooms and taking shorter showers. Data on electric usage was supplied by Campus Facilities. October use was compared with September and both were compared with the previous year. We did not obtain any significant results. Two problems with the project are: (1) we did not take into consideration that days get shorter in October and hence students turn lights on earlier, and (2) a better research design would have allowed for "before", "experimental", and "after" periods while controlling for daylight hours. However, we feel that sustainability education projects are of value for keeping students mindful of their resource consumption, while encouraging them to reduce their environmental footprint.

#### 114 • Differences in Resting Habits and Feeding Preferences between Male and Female Mantled Howler Monkeys (*Alouatta palliata*) KAITLYNN DOBUCKI

FACULTY SPONSOR: BARBARA WELKER, ANTHROPOLOGY

The purpose of this research is to identify key differences between male and female mantled howler monkeys (*Alouatta palliata*) in resting and feeding behavior. My goal was to determine if one sex rested more than the other, and if they differed in their feeding preferences for particular tree species. My hypotheses were as follows: (1) males and females will differ in resting habits, such that

females will rest for a greater proportion of time than males; and (2) males and females will differ in their feeding preferences, such that females will spend more time feeding, eat more fruit and leaves, and use fewer tree species. I believed that females would rest and feed more and demonstrate a more selective diet due to the metabolic costs of gestation and lactation. All data was collected on Ometepe Island in Nicaragua. Data analysis was conducted using Microsoft Excel and R. Results were as follows: (1) females spent more time resting and feeding; (2) males and females ate from five tree species each, although the tree species differed between the sexes; and (3) there were no differences, in terms of percentage of the various plant parts, in the diets of males vs. females.

#### 115 • Out of Site: Identifying the Origin of Artifacts Without Known Contexts

#### ALEXANDRA MASSEY

FACULTY SPONSOR: JAMES AIMERS, ANTHROPOLOGY

This poster represents the collection originally owned by Dr. Spencer Franklin, appointed Medical Director of NYLIC in 1901. While living and working in Central and South America between 1903 and 1916, he and his wife gathered various artifacts. The belongings that have managed to stay within the family were eventually passed to the Franklin's granddaughter, Mrs. Lynda Bailey. Mrs. Bailey reached out to Dr. James Aimers last fall to explore where in Central and South America each piece of the collection came from and the authenticity of each to aid in the eventual donation of the collection to the right circumstance. The authenticating process is very difficult, as there is not much research out there about how to identify fakes, recent objects made to look like prehistoric ones, without the use of highly specialized chemistry techniques. The process of discovering the provenience, or the original location of an artifact, is also challenging since the collection is so diverse. Identification of each requires detailed comparisons with artifacts recovered and documented throughout Central and South America as well as consultation with other experts from each field. This poster is a display of our progress.

#### 116 • Mt. Hope Cemetery: Mother and Children Mortality Data BRIANNA KOPACZ

FACULTY SPONSOR: KRISTI KRUMRINE, ANTHROPOLOGY

The goal of this study is to investigate the mortality rates of mothers and children from 1837-1860 in Rochester, NY. The data will be analyzed from cemetery records from Rochester's Mt. Hope Cemetery and will be compared to statistics in other areas. Some of the major causes of death for infants include stillbirths and diarrhea and for women child bed fever and other complications of child birth. These different causes of death will be evaluated and compared in regards to frequencies in specific years and how they compare over the years. There will also be an investigation of other trends in the data, such as which months were most common for specific causes and why it may be that way. Included is an analysis of mortality rates of women in comparison to men during the childbearing years.

#### 117 • Mortality for Vaccine-Preventable Diseases in 19th and 20th Century Rochester ERICA HORNSTROM

FACULTY SPONSOR: KRISTI KRUMRINE, ANTHROPOLOGY

The purpose of this research is to investigate the rates of infectious diseases that are currently controlled through vaccinations. Considering recent declines in vaccination rates, it is relevant to research the devastation and prevalence of infectious diseases in the past in order to demonstrate the impact that vaccinations have had on mortality rates. For this study, historic sources about public health in Rochester, New York, and other urban areas during the 19th and early 20th centuries provided contemporary accounts of infectious disease concerns. Following this, the mortality rates in Rochester resulting from vaccine-preventable diseases, such as diphtheria, were examined using data from Mt. Hope Cemetery records that are available online. The time periods between 1837 to 1860, as well as 1882 to 1935 were included in in the data set, representing periods before and after the vaccinations were first developed. Information on date of interment, name, sex, age, and cause of death for each individual were recorded in Microsoft Excel and analyzed with R Studio software. Along with mortality rates across time, differences in mortality for both age and sex were also compared.

#### 118 • An Analysis of Accidental Deaths in 19th Century Rochester KELLY BENNETT

FACULTY SPONSOR: KRISTI KRUMRINE, ANTHROPOLOGY

Records from Mt. Hope Cemetery in Rochester, NY, provide an insight into the medical conditions that caused numerous deaths during the 19th century. They report the name, death date, cause of death, and residence of thousands of Rochester residents from that time. Consequently, the records can be further analyzed regarding the prevalence of certain causes of death. A specific topic of interest is the focus on the accidental deaths that took place during that time. In this study, I compare the number of recorded deaths due to accidental causes to determine which have the highest prevalence rates. Then, using background research on the lifestyle of the residents of Rochester during the 19th century, I focus on the correlation between daily practices and the number of particular types of accidental deaths during that time. The goal of this presentation is to determine the prevalence of accidental deaths that occurred in those buried at Mt. Hope Cemetery and to discover if there were daily activities or aspects of the city of Rochester that contributed to the deaths of the residents.

#### 119 • The Transition to Germ Theory in Rochester, NY: Implications for Medicine, Public Health and Infectious Disease Prevalence in the 19th and 20th Centuries

#### MAKAYLA ROSS

FACULTY SPONSOR: KRISTI KRUMRINE, ANTHROPOLOGY

Germ theories of disease evolved following the revolutionary work of people like Louis Pasteur, John Snow and Robert Koch and significantly influenced not only how pathogens were managed, but also how deaths were reported on death records. This study explores how the transition to germ theories of disease during the 19th century in Rochester, NY impacted medical and public health practices as well as the prevalence of deaths from infectious diseases. An extensive literature review provides the context for how physicians and lay people accepted the emergence of germ theories. Death records from Mt. Hope Cemetery, one of the oldest and largest cemeteries in Rochester, were transcribed into Excel and analyzed in R Studio to determine how the prevalence of certain infectious diseases changed over time. In order to gauge the impact of the emergence of germ theories on disease prevalence, deaths from three different time periods were examined (1837-1869, 1882-1892, 1907-1919). The aim is to determine the impact that new ideas about disease transmission, and the resulting changes in clinical and public health interventions, had on the death rates of diseases such as tuberculosis.

#### 120 • The Transgender Experience on the State University of New York at Geneseo's Campus S

CLAIRE DRAKE

FACULTY SPONSOR: MELANIE MEDEIROS, ANTHROPOLOGY

In the United States, there are many young adults that are coming to college and questioning their gender identity. In today's fluctuating political climate, it is important to document the lives of transgender students. My poster will explore the transgender experience of students on the State University of New York at Geneseo campus through participant observation. This data will illuminate the academic and social life of transgender students during an adjusting political time. *Selected for presentation at Society for Applied Anthropology, Philadelphia, PA*.

#### BIOLOGY

#### 150 • Balance of Coral and Algal Cover on Reefs of San Salvador, Bahamas

#### OLIVIA MACALUSO, EMILY CATALDO, SERRANA MATTIAUDA

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY Globally, the balance of algal and coral competition has been shifting reefs into algal dominated ecosystems. Because the algae reproduce and grow quickly, they are able to outcompete the coral and deprive them of light, which is essential to the coral's survival as its symbiotic zooxanthellae provide them with energy. Previous work on San Salvador Island reefs have shown that as recently as 2012 the reefs are overwhelmingly dominated by algae, and coral cover was less than 10%. Since 2012, many of the San Salvador reefs have been designated marine protected areas where fishing and other recreational activities are regulated in an attempt to preserve the integrity of the coral reefs. Using digital imaging and quadrat sampling, algal and coral cover will be documented and later analyzed later with J software. Correlation rank tests and two-way ANOVA tests will be done to compare algal and coral coverage in the San Salvadorian reefs. Coral and algal coverage will be compared as well as the difference in coral coverage between protected reefs and those that are not protected. This study should help us to better understand the effectiveness of marine protected areas in reversing the degradation of reefs worldwide.

#### 151 • T. Dalmanni Genomic Database and Web Framework Construction RACHEL GUINTHER

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

Bioinformatics is an important part of genetic and molecular biology research, as the data resulting from sequencing techniques can be very large and difficult to analyze. The basic goal of my project was to organize data that was obtained from genomic analyses, in order to build a user friendly interface for biology researchers at various institutions working on stalk eyed flies to access genomic data. I'm using the programming language Python, the accessory packages Pandas, Flask, and SeqIO, and Dr. Reinhardt's research data to create a database of genomic information from stalk eyed flies (Teleopsis dalmanni). This database will allow integration of sequence, expression, phylogeny, linkage, and various other types of information about particular genes into a unified interface that is accessible and usable by biologists who are not familiar with any data manipulation techniques. The preliminary database querying tools for the Teleopsis dalmanni genomic data are built, and I will present them in a web interface for easy access by the conclusion of this project.

#### **152** • Presence of the RNA Modifications N<sup>6</sup>-methyladenine and 5-methylcytosine in *T. brucei* JORDAN COFFEY, AMANDA KEPLINGER

FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY *Trypanosoma brucei* is the parasite responsible for Human African Trypanosomiasis, commonly referred to as African Sleeping Sickness. Due to the lack of promoters, posttranscriptional RNA modifications are likely important for the survival of the parasite. Our focus is to understand the biogenesis of these RNA modifications and the role that they play in the survival of T. brucei. ELISA assays were performed and detected the presence of the methylated bases N<sup>6</sup>-methyladenine (N<sup>6</sup>-MeA) and 5-methylcytosine (5-MeC) in total procyclic form and bloodstream form RNA, and a lack of methylation in small RNA for both bases. 5-MeC was further investigated by a robust bisulfite sequencing technique and the positions of the RNA methylations were elucidated. To find the source of 5-MeC RNA methylation, BLAST searches were performed and detected seven putative T. brucei cytosine RNA methyltransferases (TbCRMTs). Two TbCRMTs were expressed in E. coli as fusion proteins via recombinant plasmids. SDS-PAGE and western blotting were used to characterize expression. Protein purification experiments are in progress. In summary, our data indicate that T. brucei RNA contains several modified bases, and we have identified positions and putative enzymes responsible. Selected for presentation at American Society of Biochemistry and Molecular Biology, San Diego, Ca.

#### 153 • The Role of the *Escherichia coli dcm* Gene in Stationary Phase Fitness and Catalase Activity RACHEL KNAPP. LARA FINNERTY-HAGGERTY

FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY Little is known about the role of cytosine DNA methylation in prokaryotes. Dcm is a DNA methyltransferase in E. coli that methylates the second cytosine in the sequence 5'CCWGG3'. Microarray data indicate numerous gene expression changes at stationary phase upon addition of a methylation inhibitor, suggesting a role for Dcm in stationary phase. To test whether Dcm impacts stationary phase, competition experiments between a manA knockout and dcm knockout strain were performed and indicated that lack of a dcm gene conferred a decrease in stationary phase fitness. Stationary phase cells are characterized by increased RpoS which can be determined indirectly by measuring the activity of the RpoS-dependent catalase enzyme. Catalase activity measured in a wild-type and dcm knockout strain demonstrated that the *dcm* knockout strain has significantly more catalase activity. Catalase activity was also measured in a dcm knockout strain complemented with an empty plasmid and a dcm containing plasmid. The dcm knockout strain complemented with a *dcm* containing plasmid had a reduction in catalase activity when compared to wild-type strains. In summary, we have demonstrated that lacking functional Dcm results in reduced fitness at stationary phase indicating that DNA methylation plays an important role. Selected for presentation at Experimental Biology Conference 2018, San Diego, CA.

154 • Characterization of Female Sexual Development-1 (fsd-1) Transcript Structure, Expression, and Localization in the Fungus *Neurospora crassa* 

# THOMAS HURYSZ, MARY PYATT, MARGAUX HALES, KATHRYN EMMENS

FACULTY SPONSOR: ELIZABETH HUTCHISON, BIOLOGY

Neurospora crassa is a filamentous ascomycete fungus that reproduces sexually and asexually, but signaling pathways regulating sexual development are not well characterized. FSD1 is an N. crassa transcription factor that controls female sexual development, but little is known about its RNA isoforms, transcriptional regulation, protein expression, and localization. Splicing boundaries of fsd1 were mapped using RT-PCR and sequencing and we determined *fsd1* can be expressed as three different transcripts differing in length and intron/exon structure. Quantitative RT-PCR during different stages of development showed expression of *fsd1* transcripts is not detectable until sexual development begins. Additionally, one transcript variant is predominantly expressed, peaking approximately five days after mating. In order to determine whether all three transcripts are translated, we will monitor FSD1 protein expression using immunoprecipitation and western blotting. To investigate localization, a GFPtagged version of FSD1 was constructed and localization was monitored via fluorescence microscopy throughout development. We found FSD1GFP localized to nuclei of supportive female reproductive tissues. In addition, we confirmed the FSD1GFP strain complements sexual developmentrelated phenotypes that occur in an *fsd1* knockout strain. Finally, we constructed *fsd1* strains with overexpression promoters to determine whether overexpression has dominant negative effects during mating. Selected for presentation at Experimental Biology, San Diego, CA.

## 157 • Competition for Seed Dispersers Between Native and Invasive Plant Species & EVAN BURR

FACULTY SPONSOR: SUANN YANG, BIOLOGY In fruiting plants, competition for seed dispersers is an important factor in regeneration of the population. Partitioning niches across either disperser type or time facilitates the coexistence of plant species in a habitat filled with competing plants. An example of a habitat where plants might compete is SUNY Geneseo's Roemer Arboretum, with its variety of native and invasive fruiting species. We analyzed the fruit production over a season for a selection of invasive species, such as Lonicera maackii (Amur honeysuckle) and Lonicera morrowii (Morrow's honeysuckle) and native species, such as Parthenocissus quinquefolia (Virginia creeper) and Cornus racemosa (Gray dogwood), to identify any partitioning of ecological niches and how this might influence species interactions. On the selected plants each week, we counted the number of fruit present in three stages (green, intermediate, and ripe) for an entire fruiting season. Our preliminary results show that the more common invasive species do not overlap in fruit production. Likewise, the more common native species do not overlap in fruit production with each other. However, strong competition for seed dispersers may occur for the common invasive and native species that overlap in fruit production. Additional patterns of fruit production will be discussed.

## 158 • Danio rerio DNA Isolation and Amplification Optimization for In vitro Genotyping by Restriction Fragment Length Polymorphism SAMUEL MILLER

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY Retinal regeneration in Danio rerio has a mostly uncharacterized genetic basis. Null mutants are studied to determine its mechanism. A versatile, procedure to detect mutant non-lethal heterozygotes in D. rerio using in vitro techniques could replace the need to perform parental crosses to identify their genotypes from offspring morphology. Restriction fragment length polymorphism (RFLP) can identify genomic mutations by endonuclease-cutting at unique DNA sequences. This method is faster and cheaper than whole genome sequencing. This study identifies optimization conditions for fin clip DNA isolation, amplification, and visualization for the D. rerio good effort (gef) developmental mutant to improve RFLP efficiency. The endonuclease Alul successfully differentiated gef mutants from wildtype zebrafish by cutting at a deletion-induced AGCT in the 294 gene, as determined by agarose gel electrophoresis. Future experiments will assess if these procedures can be expedited and applied consistently to other genetic mutants.

#### 159 • Developing a Lab Exercise to Investigate the Chemotaxis of *E. coli* and *che* Mutants in Response to Attractants KATHERINE COTTEN FACULTY SPONSOR: ELIZABETH HUTCHISON,

FACULTY SPONSOR: ELIZABETH HUTCHISON, BIOLOGY

Bacterial chemotaxis is the movement of cells in response to a chemical stimulus. In E. coli, chemotaxis has been well characterized and is controlled by the che system. Chemotaxis regulation is complex, and students often struggle to understand this pathway. The goal of this project focused on developing a lab where students can compare the movement of wild-type E. coli and che knockout strains (cheA, cheZ, cheY, cheB, and cheR) in response to different attractants. Soft agar assays were conducted in which the wild-type and a che knockout strain were inoculated in the center of the plate, with a water control and an attractant placed on either side. These experiments were done using different attractants, such as aspartate, valine and nutrient broth (LB), as well as different media, such as tryptic soy agar and M9 minimal medium. Our results showed that the wild-type strain consistently outcompeted the knockout strains by reaching areas of attractant at higher concentrations. This lab allows students to investigate the mechanisms of chemotaxis and to get quantitative data on che mutant phenotypes.

#### 160 • Analysis of Sequence Variation of the *divIVA* Gene in the Giant Bacterium *Epulopiscium* spp. ZACHARY KOENIG, ERIN CLOUGH, WILLIAM BLANDING

FACULTY SPONSOR: ELIZABETH HUTCHISON, BIOLOGY

Epulopiscium sp. type B and its relatives ("epulos") are symbionts of tropical surgeonfish. Epulos are some of the largest bacteria discovered to date, and one of the ways epulos have adapted to their large cell size is through extreme polyploidy. Epulos provide an interesting system in which to explore chromosome organization in polyploid bacteria. DivIVA is a known key regulator of chromosome positioning and cell division in gram positive bacteria. Culturing Epulopiscium sp. type B is not possible under laboratory conditions. We transformed a divIVA deletion mutant of Bacillus subtilis with a copy of Epulopiscium sp. type B divIVA (divIVAep) labeled with GFP to assess its localization and role in chromosome organization. In addition, we characterized sequence variation of divIVA in Epulopiscium sp. type B and related epulos using PCR and sequencing. Some epulo morphotypes are spore forming, and this mode of reproduction and cell division is different from that of the non-sporulating epulos, such as Epulopiscium sp. type B. We hypothesized that divIVA sequences of spore formers would be closer in composition to each other than to the non-spore formers. Sequence variations among morphotypes are indicators of potential functional differences of divIVA in these different morphotypes.

# 161 • Photosynthesis of *Brassica* rapa Fruits

#### LAUREN STERNBERG

FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY A common misconception is that leaves account for all of a plants photosynthetic potential; however, developing fruits often contain chlorophyll and are photosynthetic and may make contributions to the photosynthetic gain of the plant. This experiment is part of a larger investigation to develop a comprehensive carbon budget for Brassica rapa plants. In the light leaves have a high net photosynthetic rate (10 µmol CO<sub>2</sub> m<sup>-2</sup> s<sup>-1</sup>) in part because their cellular respiration rate is low. Fruits are more metabolically active, and thus have a high cellular respiration rate which might lead to negative net photosynthetic rates even with significant gross photosynthetic rates. To determine the gross and net photosynthetic rate of B. rapa fruits, we measured net carbon dioxide assimilation of fruits with the LI-6400XT Portable Photosynthesis System in both the light and dark. In light, the B. rapa fruits expressed a net gain of photosynthesis (0.87 µmol CO<sub>2</sub>m<sup>-2</sup>s<sup>-1</sup>). As the plants aged, the photosynthetic rate declined. These results offer insight to the balance between photosynthesis and cellular respiration in B. rapa plants.

# 162 • ESP Protein Characterization in *Brassica rapa*

OLIVIA CARD, MADELINE ESS, CHRISTINA WAITE FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY JANICE LOVETT, BIOLOGY

The ESP protein affects the pathway by which secondary metabolites form in *Brassica rapa*. This pathway is known as the myrosinase-glucosinolate pathway. Myrosinase, an enzyme, cleaves a specific bond in gluconapin, a glucosinolate derived from methionine; this results in the formation of secondary metabolites that function to defend the plant against herbivory. When ESP is present, it acts as a coenzyme of myrosinase, meaning it influences product formation. We are interested in defining exactly how the ESP protein does this. In order to determine the answer to our question, *E. coli* bacteria were previously transformed so that they have the capacity to generate the ESP protein. We planned to harvest the bacteria-produced ESP for use in our assays. However, we encountered problems in our attempts to induce ESP production in the transformed *E. coli*. We have identified a possible cause of these problems and are recloning the ESP gene.

# 163 • Simulated Light Flecks and Photosynthesis

RAJAE BROWN

FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY The influence of simulated sun flecks (rapid changes in incident radiation) on the photosynthetic rate and stomatal conductance of plants was measured. Plants were grown in moderate light (~150 µmol m<sup>-2</sup> s<sup>-1</sup>) and measurements of photosynthesis and stomatal conductance were made using the LI-COR 6400 system. Plants were placed in both high light (800 µmol) and low light (11µmol) until values of photosynthesis, conductance and estimated C<sub>i</sub> (internal carbon dioxide concentration) reached a steady maximum. High light was then dropped to low and vice versa. Changes in photosynthesis occurred rapidly following the change in light intensity while changes in stomatal conductance were slower and sometimes resulted in a negative value for estimated Co

## 164 • The Effect of 96-hour Light Deprivation On the Growth of *Brassica rapa*

#### SIERRA BROAD

FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY We studied the effects of light deprivation on the growth rates of Brassica rapa, the Wisconsin fast plant. Seeds were germinated and then kept in the dark for 96 hours before putting them in continuous light. Their growth was compared to plants kept in continuous light. After 14 days the following characteristics were measured for each plant and means compared between the two groups: fresh weight, dry weight, leaf length and cotyledon length. A total of five experiments were conducted and analyzed statistically using R studio. Tests were run to determine if there was a significant difference between the characteristics of the starved versus un-starved plants. There was a significant difference between starved versus unstarved fresh and dry masses. A significant difference was also observed for leaf length between the two groups.

## 165 • Standardized Immunophenotyping of Mouse Lymphocytes using Bioconductor and Clustering Models

#### NICHOLAS TERRIGINO

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Flow cytometers are able to collect multiparameter data on individual cells. As these data sets become increasingly complex, the need arises for advanced methods of analysis. A trial of these methods was performed on data collected in Dr. O'Donnell's immunology lab. Mouse lymphocytes were extracted and stained with four markers indicating four common immune cell phenotypes: CD3 (T cells), CD4 (T-helper cells), CD8 (T-cytotoxic cells), and CD19 (B cells). Five mice were measured across these parameters. Bioconductor, a series of packages in R designed for bioinformatic analysis, has the ability to standardize current practices of analysis by automated forward scatter/side scatter gating and automated quadrant gating, as well as the ability to implement unsupervised machine learning algorithms to create clustering models of refined phenotypes. The results of this automated gating on this data yielded a non-significant difference in the number of cells gated in forward scatter/side scatter analysis across samples, while automated quadrant gating increased analysis rate. Implementation of unsupervised machine learning algorithms provided biologically relevant clusters of cell phenotypes beyond standard quadrant gating. These methods of analysis increase reproducibility of biologically relevant results if implemented more broadly in the field of immunology.

#### 166 • Analyzing Chaotic Dynamics Using the Logistic Map on a Small-World Network SYDNEY NG

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

The discrete logistic map has many applications in areas such as ecology and economics. Characterized by the equation  $x_{t+1} = \alpha x_t (1 - x_t)$  for time-steps t, this model exhibits chaotic behavior where  $\alpha$  lies in the range 3.57  $\leq \alpha < 4.00$ . With much already known about its chaotic dynamics. this model was applied to many interconnected populations running simultaneously on a Watts-Strogatz Small-World Network with different initial conditions. When normalized populations exceeded a threshold of 0.85, individuals were dispersed to neighboring, connected populations in the network. The overall behavior of the networks were analyzed for signs of convergence by looking at the patterns of the different interconnected populations over each time step. The Lyapunov exponents were calculated for ensemble dynamics and were shown to exhibit surprising behaviors.

# **167** • Ultrastructure of Cancerous Vulvar Epithelial Cells

#### VICTORIA STEVENS

FACULTY SPONSOR: HAROLD HOOPS, BIOLOGY JANI LEWIS, BIOCHEMISTRY

Vaginal disease such as lichen sclerosis and lichen planus can predispose infected individuals to development of cancerous tumors. Generally, these conditions may be treated with topical corticosteroids, such as clobetasol. Current models state that clobetasol puts affected cells in a state of quiescence and renders them immune to traditional methods of cancer treatment. These corticosteroids are known to affect cellular junctions and epithelial cadherin, or E-cadherin. In order to further study this, we are examining vulvar cancer cells with and without clobetasol treatment by transmission electron microscopy. A challenge in this process is keeping the cell interactions intact, thus preserving the cell junctions. To do this, we have tried preparing cells grown on membrane filters which can be sectioned or alternately grown on specially treated plastic coverslips which can be removed after embedding.

## **168** • Does Phototaxis and Chemotaxis in *Astrephomene* Involve the Same Mechanism for Steering?

#### STEPHAN HEDDON, LEA CARINA RIVERA

FACULTY SPONSOR: HAROLD J. HOOPS, BIOLOGY The volvocalean alga, Astrephomene, accumulates in response to both chemicals (chemotaxis) and light (phototaxis), but the mechanism is unclear in both cases. In the closely related Volvox, the kinetics of colonial rotation and flagellar activity together result in steering. Artificially changing the kinetics of rotation abolishes phototaxis (Drescher, et al., 2010, PNAS 107: 11171). We want to confirm this relationship in Astrephomene phototaxis and determine if it holds true for chemotaxis as well. Using video microscopy, we have observed positive phototaxis occurring within seconds of light stimulation. We can track the positions of the colonies as they respond to the light and are presently developing methods to quantify the response. We will then vary the rotation rates by changing the viscosity of the medium and determine if this interferes with phototaxis. Eventually, we plan on comparing the effect of changing viscosity on chemotactic ability as well. If changing viscosity abolishes one behavior without abolishing the other, then this is evidence that the mechanisms must differ between these two behavioral responses.

## 169 • Competition for Space Between Corals and Sponges in San Salvador Island Reefs: Are Sponges Coral Killers? Ø

SKYE SMITH, SAMANTHA MUSCAT, JULIA VIGIL

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY Competition for space in coral reefs is a major factor in coral growth. Prior studies on patch reefs off the coast of San Salvador Island in the Bahamas have shown that corals and sponges compete intensively for space. The purpose of this study was to determine the extent and outcome of competition between sponges and corals and to document the coral species that are more susceptible to overgrowth by sponges. Swimmers will survey the reef and document the relative abundance of coral-sponge interaction. The results of this study should provide a better understanding of how significant sponge growth is a source of coral mortality. Statistical analysis will be performed on the data to determine if certain sponges exhibit a preference towards growth over finger corals or other coral species.

## 170 • Using Fossil and Molecular Data to Better Understand the Timing of the Evolution of African Snakes

#### FMMA BODF

FACULTY SPONSOR: JACOB MCCARTNEY, BIOLOGY

#### JOSEPHINE REINHARDT, BIOLOGY

Knowing the timing of evolutionary radiations is key to understanding their causes and history. As different lineages evolve, mutations accumulate over time: this steady rate can be used as a molecular clock to estimate divergence times. Known fossil dates can calibrate the molecular clock to real time. Although snake evolutionary history is well documented in the northern continents, little is known about when certain families of snakes evolved in Africa. Recently, a collection of fossils was found from the Oligocene of southwest Tanzania that contains the earliest known members of Lamprophiidae, an African radiation of snakes. Among the discovered fossils is a specimen of an extant genus of African file snakes. In this study, we used these African and other known fossils to calibrate a new molecular clock produced by mitochondrial genes in the program PAML. We found that the origin of Lamprophiidae occurred nearly 50 million years ago, a much older date than the previously suggested range of 20 to 40 million years ago. These results indicate there is at least a 10 million year gap in the fossil record. This may be because these fossils are small and usually not very distinct from other snake families.

#### 171 • Zygosphenal Morphology in Relation to Snake Constriction KEVIN CARRERA

FACULTY SPONSOR: JACOB MCCARTNEY, BIOLOGY In order to constrict, snakes need to be able to form strong, tight, twisting coils. Zygosphenes are articulations of snake vertebrae that keep them from experiencing excessive torsion. This study was performed to determine if zygosphenal morphology correlates with a snake's ability to constrict. I measured zygosphenal joint angle and zygosphene width (ZW). I controlled for individual differences in size by making two width measurements on the vertebrae and dividing the ZW by these measurements. I conducted tests of normality and homogeneity of variance of the data in the statistical software program R. After this, I tested for phylogenetic signal to determine how strongly the measured traits were influenced by the relationships between the species. The results indicated that some measured traits were influenced by phylogeny. I performed phylogenetic ANOVAs comparing each zygosphenal measurement between constrictors and nonconstrictors. Results from these analyses reveal no correlation between zygosphenal morphology and a snake's ability to constrict. Based on these results, I conclude that zygosphenal morphology seems to be influenced by phylogeny but has no relation to a snake's ability to constrict. Other factors, such as musculature and vertebral number, may be of greater importance in determining constriction ability.

## 172 • Assessment of Vegetation History on Forest Development in a Heterogeneous Secondary Successional Forest S

#### AARON KLUBALL

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY The Spencer J. Roemer Arboretum is an 8-hectare natural area on the SUNY Geneseo campus that was used as pasture until around 1960. In a vegetation survey of the Arboretum in 1999, the plant communities were mapped and categorized as tree-dominated, shrub-dominated, or open sites. In summer 2015, to assess the differences among areas in different stages of forest development, six 20x20-meter permanent plots were established in the Arboretum, three on treedominated sites and three on shrub-dominated or open sites. In each plot, the species, DBH, and crown class were recorded for all stems >2.5 cm DBH. The plots were revisited in the summer of 2017 to collect repeat measurements on all marked individuals. These data are used to assess the survival and growth rates on plots from 2015-2017, current species composition, diversity within each crown class, and size distribution of stems within each species and crown class. These data are used to assess how the different histories of the plots have resulted in current differences in forest development. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

# **173** • Seasonal Variation in Red Fox Activity

#### ALANNA RICHMAN, CHLOE COTTONE

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY In this study, camera trap images were analyzed to observe the activity of red foxes (*Vulpes vulpes*) and other native species near multiple fox den entrances in the Spencer J. Roemer Arboretum. These cameras have been set up near this den location since the summer of 2017. The game cameras are motion-activated to take pictures near these den entrances without disturbing the foxes or other visiting species. The aim of this study was to determine (1) which times of the day and night the foxes are most active near the den, and (2) how these activity times change with the seasons. Patterns in the activity of other species active near the fox dens were also described.

#### 174 • Interactions between Beech Blight Aphids, Sooty Mold Fungus, and Forest Invertebrates ALLISON JONES

FACULTY SPONSOR: JENNIFER APPLE. BIOLOGY Grylloprociphilus imbricator (beech blight aphid) are a type of sap-sucking aphid that form large colonies on Fagus grandifolia (American beech) branches. As they extract phloem from the tree, they excrete a sugar-rich waste called honeydew. Underneath aphid aggregations, honeydew accumulates in the forest understory. In the Genesee Valley Conservancy/SUNY Geneseo Research Reserve, a variety of forest invertebrates such as wasps, millipedes, and slugs were observed around honeydew accumulations. At 25 different aphid-hosting trees, forest invertebrates were quantified in areas with and without honeydew accumulations. This survey revealed a significant association of wasps with honevdew accumulations. Additionally, the honeydew acts as a substrate for sooty mold fungus, which grows on leaves, sticks, branches, and rocks coated with honeydew. Scorias spongiosa is a specialist fungus known to associate with the honeydew accumulations of beech blight aphids. Genetic work was conducted in order to investigate whether the species composition of these sooty

mold growths was solely *Scorias spongiosa* or a variety of fungal species as some preliminary data suggest. The goal of this study is to provide insight into the many species interactions that revolve around beech blight aphids, as their impact is not well-documented or understood. *Selected for presentation at Northeast Natural History Conference, Burlington, VT.* 

## 175 • Extended Leaf Phenology of the Invasive Amur Honeysuckle (Lonicera maackii)

#### EMILY MARTIN

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY Phenology describes the timing of cyclical biological events in plants and animals. Several invasive shrubs exhibit "extended leaf phenology" (ELP) in forest understories by leafing out earlier in the spring and retaining their leaves later in the fall than native species. ELP provides a competitive advantage to the invasive plant by "shading out" nearby species that demonstrate later phenology. In this study, the phenological events of the invasive Amur Honeysuckle (Lonicera maackii) and the native Gray Dogwood (Cornus racemosa) in the Spencer J. Roemer Arboretum were monitored. Initial analysis supports evidence for ELP in the Amur Honeysuckle. In the spring of 2017, all monitored Amur Honeysuckle plants presented breaking buds at least one week earlier than the Gray Dogwood plants. In the fall of 2017, most of the Amur Honeysuckle plants retained a majority of their leaves up to two weeks after all of the Gray Dogwood plants had lost 50% of their leaves or more. The timing of each phenophase was also compared to temperature and canopy openness measures, and preliminary data suggest that increased canopy cover influences the fall phenology of the Gray Dogwood more strongly than the Amur Honeysuckle. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

### 176 • Effect of Habitat Type on Wasp Abundance and Diversity on the SUNY Geneseo Campus JASON LANG

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY An ongoing study on bee diversity conducted on the SUNY Geneseo campus used a standard sampling method involving small bowls painted with different fluorescent colors and filled with soapy water to capture bees; this type of trap often attracts other flying insects including wasps. We took advantage of these incidental captures to investigate the effects of habitat type on wasp abundance and diversity. Samples were collected from the College Green; the Arboretum, two different sites near native plantings surrounded by secondary successional forest; and the no-mow zone, a roadside unmowed field. The wasps were pinned or pointed, depending on size, and sorted based on lowest taxonomic level reached. The wasps were catalogued by collection date, location, bowl color, and identity. The site Arboretum 2 had the highest diversity, while the College Green had the lowest. Parasitoid wasps were rare at the College Green site, perhaps because grounds management may limit the availability of host species. The presence of

human-made structures that offer nesting substrates could explain a high relative abundance of vespids found at the College Green site, while ichneumonids were the most abundant taxon at all other less managed sites on the edge of campus. *Selected for presentation at Northeast Natural History Conference, Burlington, VT.* 

## 177 • Examining the Effects of Meiotic Drive on Aggression in Male Stalk-Eyed Flies

MACKENZIE HINTZE, AUSTIN AINSWORTH FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

This study examines whether or not aggression in territorial behavior exhibited by male stalk-eved flies is impacted by meiotic drive. Meiotic drive is a natural phenomenon that increases the likelihood of some genes to be inherited more than others and is worth studying for its implications across all species. Certain populations of stalk-eyed flies show meiotic drive sex chromosomes, leading to majority female offspring. We examined whether or not a more aggressive male would possess this genetic factor through the construction and completion of aggression trials. Males from three populations were collected, paired according to eye span length, and used in aggression trials held in arenas made from cell culture flasks. The frequency and intensity of aggressive behaviors were recorded and analyzed. DNA was collected through tissues samples from participants and genotyped using genetic markers diagnostic for meiotic drive. Thus far, we have found a statistically significant relationship between eye span length and frequency of conflict resolution behaviors, perhaps suggesting that eye span (phenotype linked to meiotic drive in these flies) may also be linked to aggression. We have continued sampling and will discuss possible genetic correlations.

#### 178 • Genetic Comparison of Slavemaking Ant Colonies to Complement Assays of Aggression Between Nests KEVIN ZABLONSKI

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY The secondary successional forest that comprises Spencer J. Roemer Arboretum at SUNY Geneseo is home to Formica subintegra, a species of slavemaking ant that steals the young of the local Formica glacialis species to work and forage for their colonies. Over time, F. subintegra colonies have repeatedly relocated throughout the eighthectare Arboretum to maximize accessibility to F. glacialis young, and have been observed to split, rejoin, or even raid each other. However, it is currently unclear whether these raids are actually raids, or if one nest voluntarily joins another, giving the appearance of a raid. It is also unknown if individuals are more inclined to be aggressive toward genetically distant conspecifics. This study tests for the presence of aggressive behavior between individuals from nests at a variety of geographic distances using behavioral trials. DNA was subsequently extracted from each individual and amplified using PCR, then analyzed using a variety of microsatellite markers. The degree of relatedness between colonies can be estimated

using the microsatellite genotype data. These results begin to answer whether or not there is a link between genetic similarity and *F. subintegra* nest movements, contributing to our understanding of this understudied species. *Selected for presentation at Northeast Natural History Conference, Burlington, VT.* 

## 179 • Patterns in Native Bee Diversity: Effects of Floral Resources and Habitat S SAM HERAGHTY

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY Over the past several years, native bee diversity surveys have been conducted in the Arboretum on the SUNY Geneseo campus in western New York. The primary objective of this project was to assess the diversity of bees found across several unique sites within the Arboretum as well as investigate biases in methodology and floral resource use by the bees themselves. Over the course of the survey, we have collected 24 genera and 64 species. The highest diversity was found in the sites that had the greatest floral resource diversity. Focal observations revealed that generally, native bees preferred to visit native plants whereas the non-native Apis mellifera (European Honeybee), preferred non-native plants such as Centaurea nigra (Black Knapweed). There were also some biases detected in the collection methodology, as pan traps are ineffective at capturing larger bodied bees. However, this bias can be countered with the addition of blue vane traps to the sampling regime. This study provides data that suggest how to improve pollinator habitat as well as how to improve bee diversity monitoring methodology. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

#### 180 • In Situ Expression Analysis of Stalk-Eyed Fly Testes EVAN MCCABE, MIRANDA CALARCO

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

Heterochromatin protein 1 (HP1) is a family of proteins that oftentimes have newly duplicated in large numbers in species exhibiting the genetic phenomenon of meiotic drive; a violation of Mendel's law of segregation in which those species possessing sex-ratio meiotic drive alleles produce almost exclusively female offspring. The scope of this project is to analyze HP1 expression in stalkeyed flies (Teleopsis dalmanni) and to observe its function in the condensation and reorganization of chromatin during the meiotic divisions of spermatogenesis. We use immunostaining and in situ hybridization in order to detect the localization of HP1 protein and mRNA transcripts in developing testes respectively. This semester we have assessed normal testes development and have designed and ordered primers in order to perform polymerase chain reaction to amplify our desired probes. We intend to find that HP1 expression will be localized to condensing chromatin in wild type flies, and that this normal function will not be observed in sex-ratio meiotic drive allelepossessing Teleopsis.

**BUSINESS** 

#### 155 • Judicial Responses to Gerrymandering S CHRIS CALLERY

FACULTY SPONSOR: JAMES QUINN, BUSINESS This poster is an investigation of how judges are responding to the issue of Gerrymandering in the United States. The case Gill v. Whitford, which is currently before the Supreme Court, will be closely examined to determine what a legal test for gerrymandering may consist of.

## 156 • Arsenal F.C.'s Performance: Using Logistic Regression to Identify Factors that Influence Winning in Soccer

#### RYAN FORNEY

FACULTY SPONSOR: MANSOKKU LEE, BUSINESS I have compiled data across three seasons ('14, '15, & '16) of the English Premier League and constructed two econometric models, to see which particular factors have a significant effect on Arsenal's chances of winning a match. The first regression works to measure how influential Goals Scored, Goals Conceded and Arsenal's Shot Supremacy Ratio are with respect to the result being a win. The second works to estimate how influential Goals Scored minus Goals Conceded and Arsenal's Shot Supremacy Ratio minus Opponents Shot Supremacy Ratio are on the result being a win. Variables that I have found to be statistically significant with respect to this are: Goals Scored, Goals Conceded and Goals Scored minus Goals Conceded. Although the Shot Supremacy ratio has previously been said to be a more accurate predictor of winning than the percentage of possession for example, my findings ultimately show that the Shot Supremacy Ratio is not statistically significant.

## CHEMISTRY 202 • Apocynin as an NADPH Oxidase Inhibitor TORY WELSCH

FACULTY SPONSOR: DAVID JOHNSON, CHEMISTRY Apocynin is a naturally occurring compound that is known for its anti-oxidative and anti-inflammatory effects within the human body. The enzyme NADPH oxidase has been confirmed as the predominant source of excess reactive oxygen species (ROS) within endothelial cells. Recent studies have shown that the apocynin dimer, diapocynin, directly inhibits NADPH oxidase by preventing the translocation and binding of the p47<sup>phox</sup> subunit. Apocynin therefore shows potential to prevent inflammatory diseases such as atherosclerosis and diabetic retinopathy. This study aims to investigate the inhibition mechanism of apocynin by studying the interactions between apocynin and L-cysteine. These species each form dimers in the presence of myeloperoxidase (MPO) in vivo. To mimic this oxidizing environment in vitro, apocynin and L-cysteine are treated with a hydrogen peroxide and horseradish peroxidase system. The dimer product formation is then monitored through LC-MS and NMR spectroscopy. Understanding the effect of diapocynin on the dimerization of L-cysteine could help elucidate the mechanism by which apocynin inhibits NADPH oxidase. Selected for presentation at 255th

American Chemical Society National Meeting, New Orleans, LA.

## 205 • Critical Bone Fracture Repairs: A Comparison of Porous Properties of Chitosan Bioactive

## Cement and Pig Bones 💋

#### SABRINA MEDINA, SABIHA UDDIN, JUSTIN GABRIEL

FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

Previously, the most effective method for supplementing/replacing a bone was an autograft. This method comes with risks as a result of the invasive nature the autograft procedure ensues; by removing a small section of bone and using it as a bone simulant at the fractured site. Increased infection and limited bone supply in younger and elder patients are some concerns associated with this approach. This study aims to develop an alternative system to replace an autograft. For these initial studies, we use pig fibula to compare the properties of our novel cement system. Calcium Phosphate Cement (CPC), a biocompatible bone substitute composed of Hydroxyapatite (HA), a major component of human bone, is a base ingredient for the cement. Due to the successful ability of these cements to osseointegrate and initiate bone growth, we focus our efforts in the challenges of adequate porosity size and mechanical strength. Chitosan is known to enhance the porosity of cement system because of its interlocking properties. Similarly, sodium bicarbonte was tested due to its ability to form gas bubbles resulting in pores. This new cement was characterized using published methods and the data obtained is presented and discussed herewith.

## 216 • Dimerization of Apocynin and Its Guaiacol Analogs

#### WILLIAM BARRIE, MICA PITCHER

FACULTY SPONSOR: DAVID JOHNSON, CHEMISTRY Diapocynin has proven to minimize oxidative stress in the body, therefore preventing many inflammatory diseases such as atherosclerosis and diabetic retinopathy. Diapocynin is the dimer form of the plant extract, apocynin. Other analogs of apocynin such as 4-chloro-2-methoxyphenol and 4nitroguaiacol have been studied in their dimer forms to analyze reactivity and mechanistic properties. The dimer of 4-nitroguaiacol was successfully prepared using an oxidative coupling reaction with iron (II) sulfate as the reducing agent and potassium peroxydisulfate as a powerful oxidant. The purity and structural properties of these dimer analogs were studied using nuclear magnetic resonance. Multiple laboratory procedures such as ether extraction and vacuum filtration have been analyzed in order to determine the best outcome for this oxidative coupling mechanism. Potentially, if enough product is synthesized, a crystalline structure can be formed and analyzed through x-ray crystallography. This would clarify the mechanism and allow for more thorough research towards preventing diseases caused by oxidative stress.

## 217 • Probing the Secondary Structure of Amyloid Beta 1-40

#### Over Nanoscale Gold Colloidal Particles

#### HENRY HO

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Human amyloid beta 1-40 (A $\beta_{1-40}$ ) is a protein of interest for its association with the initial onset of fibrillogenesis in Alzheimer's disease. Circular dichroism spectroscopy is a relatively unexplored technique, and is applied in this lab to study the structure of the amyloid beta protein. The secondary structures of A $\beta_{1-40}$  were investigated under differing pH conditions to better understand how the proteins aggregate, leading to the onset of Alzheimer's disease.

## 218 • Effect of a Mitochondrial DNA Deletion on Mitochondrial DNA Copy Number, Cell Growth and Metabolism CHRISTOPHER KECK

FACULTY SPONSOR: WENDY POGOZELSKI, CHEMISTRY

Human mitochondria (mt) contain circular DNA molecules of 16549 base pairs, which can contain large deletions that correlate with aging and disease. Our studies focus on a particular 4977-bp deleted of the DNA that codes for a number of protein subunits crucial for the function of the electron transport chain . These studies are direct at ascertaining how this deletion affects cell growth, mtDNA content, and metabolic processes human lymphoblasts bearing the deletion. A technique known as a polymerase chain reaction allowed us to quantify amount total mtDNA as well as the level of mtDNA containing the deletion in both our experimental and control cell lines. Then, by varying the media glucose concentrations we were able to assess the affects of the deletion on growth and metabolism. Furthermore, we compared rates of metabolic processes within the cell by measuring the production of lactic acid, as an indicator of glycolysis, and the rate oxygen consumption, as an assessment of oxidative phosphorylation. In addition to containing increased levels of total mtDNA. the deletion associated cells demonstrated an increased propensity to use glycolysis as a compensatory mechanism for their deficit abilities in energy production and growth. Selected for presentation at Experimental Biology 2018, San Diego, CA.

## 219 • An Investigation of Protein Aggregation on Gold Nano Particle Surfaces

#### PETER SHEVLIN

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The proteins amyloid beta 1-40 (A $\beta_{1-40}$ ) and alphasynuclein ( $\alpha$ -syn) are regarded as hallmark amyloidogenic peptides associated with Alzheimer's and Parkinson's disease, respectively. They form amyloid plaques inside neurological cells, disrupting the regulatory functions of the cells, causing the neurons to degenerate. Beta-2microglobulin ( $\beta$ 2M) is a main component in MHC class 1 molecules. In the body, MHC molecules are found on the surface of all nucleated cells and has been known to aggregate into amyloid fibers when in sufficient concentration. While all these amyloidogenic peptides are known to develop fibrillogenesis (i.e., fiber formation) through a polymerization of an oligomer, a structure of this oligomer or mechanism of polymerization is not still completely revealed. Our group discovered that the above mentioned intermediate oligomeric form can be stably created by taking advantage of surface potential (estimated to be ~100 J/mol) of gold nano-particles. Quite remarkably, the interaction between nano-particles and peptide highly depended on the "specific" nano-size (e.g., 20 nm for A $\beta_{1-40}$ , 60 nm for  $\alpha$ -syn, and 30 nm for β2M). Selected for presentation at American Chemical Society 255th National Meeting, New Orleans, LA.

#### 220 • Conformational Change of FAβ in DMSO EGHOSA OKUNGBOWA, TIFFANY MFOAFO,

#### ISHAN DESHMUKH

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Amyloid beta (AB) is a hallmark for Alzheimer's disease through the formation of insoluble fibrillar plaques that invades the brain's memory and cognition areas. Aβ conjugated with the fluorophore fluorescein (FAB) exhibited different fluorescence features as a function of pH. The fluorescence decreased when acidic conditions were employed. At these conditions, the peptide was expected to be unfolded, impacting the degree of freedom of the fluorescein such that it restricted its flexibility and caused the fluorescence to decrease. This indirectly proved that the fluorescence can probe the conformational change of the peptide. Based on the bimodal trend in the fluorescence spectrum, two different excited states were observed: the original excited state and the state resulting from internal conversion. The major feature in the spectrum was characterized to be from the second band.

## 221 • The Nano-scale Size Dependence of Conjugation of Alpha Synuclein Peptide on the Metal Colloidal Particles' Surfaces SHREYYA MALIK

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The conjugations of  $\alpha$ -synuclein ( $\alpha$ -syn) and with various sizes of gold and silver colloidal nanoparticles were examined under various pH conditions. Absorption spectroscopy was utilized to identify changes in the optical properties of colloid particles by color change for the various pHs, ranging from pH 2 to pH 10. The color changes of  $\alpha$ -syn coated gold particles were seen at a higher pH than the values where bare colloid exhibits its color change. This was attributed to the change in net surface charge of the colloid due to the coated  $\alpha$ -syn monomer units. The pH value that indicates the color change, pHo, exhibited colloidal size dependence for  $\alpha$ -syn coated particles. In particular, α-syn coated gold colloid exhibited noncontinuous size dependence peaking at 40 and 80 nm, implying special restriction in surface area for best coverage. Most of the sizes exhibited peak shift as the color change was repeated. The

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repeating behavior showed some gold colloid size dependence.

#### 222 • Investigation of Reversible Self-Assembly of Amyloidogenic Peptides at Nano-Scale Interface STEPHANIE LEE, MONICA PUJOLS, VALERIE MEDINA

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The folding process of the amyloidogenic peptide is regarded as the crucial conformational change leading to fibrillogenesis, which eventually triggers neurodegenerative diseases. Our recent studies indicate that a key oligomeric form associated with fibrillogenesis can be stably made provided by a metal surface potential. In recent studies, we successfully identified the layer of beta-2microglobulin ( $\beta$ 2M) to be approximately 0.9 nm in width over a 30 nm gold colloid surface. This layer is used to aggregate residual B2M coated gold colloid particles under only acidic conditions, in which unfolded B2M oligomers were formed. While we are not certain if this layer is a monolayer or multilayer, the oligomeric form can determine this thickness. Therefore, the layer's thickness showed signs of being dependent on the size of the gold colloid. We are investigating the stable form of the oligomer and associated layer's thickness over the gold colloidal size between 10 nm and 100 nm, as well as a pH ranging from 2-12.

## 223 • Description of Solventdependent Diffusion Process in Porous Silica Sol-gel Material TOLULOPE OLATUNBOSUN, ISHAN DESHMUKH, ERIKA ESQUIVEL

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

In order to design a capsule with controlled rate of drug delivery at highly acidic condition, the diffusion rate of the solvent (acid) reaching into the cavity of the silica based gel material was investigated. Instead of a drug, a fluorescent nanosize crystal (Quantum Dot-QD) was used as a "host" to probe the condition inside the silica cavity. The change in lifetime of the QD was measured as the solvent penetrated into the gel. The dynamics of the host particle was sensitively changed as the size of the guest particles ranged between 5 and 80 nm. The penetration rates and the guest particle sizes did not exhibit simple linear relationship; however, the rate maximized when the guest particle size was around 15 nm. For both silver and gold guest particles, this trend was not affected.

## 224 • Probing the ζ-Potential of Amyloid Beta Covered Gold Nanoparticles

## JOSEPH LIPPA

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The amyloid beta (A $\beta$ ) peptide is known to aggregate easily, while nano gold particles do not aggregate under the same pH conditions. However, A $\beta$  coated gold nano colloid particles can aggregate at relatively higher pH. The surface condition (such as surface potential) has not been clearly investigated in detail. By utilizing a  $\zeta$ - potential measurement system, we extracted the change in colloidal surface charge potential. While a bare gold colloid possesses a negative surface potential, the A $\beta$  covered gold colloid showed a positive potential implying the surface condition had been totally changed due to the attachment of peptides.

## 225 • Effect of Nanosize "Guest" Particles On Solvent Diffusion through a Silica Gel Matrix JUSTIN SLOVAK

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The effective delivery of a drug via ingestion can be a challenging issue when the efficiency of the pertinent drug can be significantly reduced by damage caused by stomach acid. Therefore, an acid resistant drug-carrying device needs to be designed to fill this role. Silica sol-gel is regarded as an material that may fit such criteria. In order to design a capsule with a controlled rate of drug delivery at highly acidic conditions, the diffusion rate of the solvent of acid reaching into the cavity of the silica based gel material was investigated. Instead of a drug, a fluorescent nano-size crystal, quantum dot, was used as a "host" to probe the condition inside the silica cavity. The change in lifetime of the quantum dot was measured as the solvent penetrated into the gel. The dynamics of the host particle was sensitively changed as the size of the guest particles ranged between 5 and 80 nm. The penetration rates and the guest particle sizes did not exhibit a simple linear relationship, however the rate maximized when the guest particle size was around 15 nm. For both silver and gold guest particles, this trend was not affected.

## COMMUNICATION

#### 107 • Adoption and Communication: Narratives of Adopted Emerging Adults ANNI-MING LARSON

FACULTY SPONSOR: MEREDITH HARRIGAN, COMMUNICATION

I am studying how visibly adopted emerging adults (people between 18-25 who are adopted and racially/ethnically different from their adoptive parents) communicate and ultimately enact their personal identities with friends, family, and adoptive parents. Data collection will be done by conducting semi-structured, audio recorded interviews of around eight participants who fit the study criteria: 1) Identify as an 18-25-year-old who was adopted into a single or dual parent household in which your race/ethnicity is not the same as your adoptive parent(s) and 2) Be someone who identifies as a person who does not have an ongoing relationship with your birthparent. Themes and motifs will be found and addressed for this phenomenological study on the observed adoption narratives of emerging adults.

#### 108 • Gender and Communication: Exploring How Men and Women Communicate KATHERINE BROCKWAY

FACULTY SPONSOR: MEREDITH HARRIGAN, COMMUNICATION The purpose of this research project is to test various academic claims regarding gender differences in communication. Claims to be tested include: women utilizing tag questions and apologizing more frequently than men, women utilizing more powerless language, women trying to relate to a problem upon hearing it, while men try to fix that problem, women tending to disclose more personal information and when talking use more excessive words than men.

#### 109 • Expressing Romantic Relationship Satisfaction via Social Media Activity EMILY ARPINO

FACULTY SPONSOR: SARAH BROOKES, COMMUNICATION

This study will assess how satisfied college students are in their romantic relationships, as well as the association between their relationship satisfaction and social media use. Social media such as Facebook, Twitter, and Instagram are considered. Amount of social media use, the type of content posted on social media, how often they post on social media, and their personal reflection on the satisfaction in their relationship will be recorded in an anonymous survey and then analyzed. The reason for conducting this research is to see if there is correlation between social media usage and satisfaction in relationships and if posting more about the relationship online is associated with relationship satisfaction or dissatisfaction. By researching the way people use social media to reflect their interpersonal relationships, we can better see how people perceive their relationship and how it is displayed in a public forum.

# **110** • Finstas: The Use of Private Instagram Accounts for Social Validation

JAMIE-LYNN IRWIN

FACULTY SPONSOR: SARAH BROOKES, COMMUNICATION

As interest in social media continues to grow, this normalized form of communication becomes more complex and evolved. This study wishes to analyze the importance of private Instagram accounts, known as "Finstas." The study theorizes that this unique form of social media remedies the social stressors younger generations endure, focusing on how "Finstas" are used as an honest form of selfreassurance within an intimate group of followers. The research was comprised of a two-step process: a focus group and an online survey, both of which analyzed the pros, cons, and the impacts that "Finstas" have on users. The study theorizes that "Finstas" are different than other social media because they do not follow the norms or average practices of most mainstream and public accounts. Rather than presenting one's "best self" or a glamorized version of oneself, a "Finsta" allows users to present a raw and uncensored version of themselves to their closest inner-circle of friends. It is predicted that the risk of trusting a select group with this vulnerable, curated content is outweighed by the personal and social benefits. The use of "Finstas" provide a sense of selfvalidation and help foster a more intimate connection with the user's followers. Selected for

presentation at SUNY Undergraduate Research Conference, Rochester, NY.

#### 111 • The Relationship Between Social Media Usage and Perceived Quality of Offline Friendships TESS ROMANO

FACULTY SPONSOR: SARAH BROOKES, COMMUNICATION

I am researching the relationship between social media usage and perceived quality of offline friendships. I hypothesize that young adults who utilize social media more frequently will report lower quality friendships offline. Factors I am researching in regards to this relationship are social anxiety and self-esteem. I believe social anxiety will moderate the relationship between on and offline friendships, in that those who report higher social media use and higher social anxiety will report lower quality friendships offline. I also hypothesize that self-esteem will moderate this relationship, in that those who report higher social media use and lower-self esteem will report lower quality friendships offline. Using quantitative questionnaires, I am surveying college students on their social media utilization, their self-esteem levels and their social anxiety levels. I am also using quantitative surveys to analyze the quality of friendships. I will utilize the data from these surveys to analyze the relationships between quality of on and offline friendships and these factors and explore other factors that may also affect this relationship. The purpose of this study is to identify factors that lead to poorer offline relationships to and identify ways to improve these factors and therefore the relationships as well. Selected for presentation at SUNY Undergraduate Research Conference, Rochester, NY.

#### 112 • Reaction to Ad Campaigns ZOE STRICOFF

## FACULTY SPONSOR: SARAH BROOKES,

The purpose of the research is to understand how certain types of advertising campaigns can influence individuals by using the third person effect in the media. The third person effect is the belief that people perceive mass media has a greater effect on society rather than themselves. Focusing on the Dove campaign for real beauty and Aerie real campaign, the use of models with the idea of the average body is supposed to normalize all body types as models. The use of all body types in ad campaigns is supposed to promote body confidence. To measure, I created a survey asking questions on self confidence, the ad campaigns relating to society and how the campaigns impact society, then I asked questions on media use. This research will provide valuable data on how body positive ad campaigns effect an individual based on how they believe the ad effected society.

#### GEOGRAPHY

258 • Developing an Index of Pre-European-American Forest Density in Western New York State Using Qualitative Descriptions from Land Survey Records, ca. 1800 CE S BRENDAN CULLEN FACULTY SPONSOR: STEPHEN TULOWIECKI, GEOGRAPHY

Previous research has sought to reconstruct pre-European forest conditions in North America. Studies have often used "witness-tree" records from original land surveys to quantitatively estimate forest density, by using the distance between witness-tree and matching survey posts as a form of density estimation. Other research has explored how past Native American groups modified forest composition and structure, including by thinning forests. Land survey records containing witness-tree data or measurements between survey posts are absent throughout eastern North America. This issue motivates the exploration of other means of estimating forest density. This study develops a methodology for creating a forest density index from qualitative forest descriptions. The study area comprises of three land purchases and surveys that make up western New York State. First, qualitative forest descriptions from field notes of township surveys were transcribed and mapped in a historical GIS. Second, the transcriptions were grouped and given a rank from 1-3, 1 representing forested, 3 representing open land. Third, the ranked descriptions were analyzed and compared to Native American settlement. This methodology, with few modifications to account for differences in vocabulary among surveys, can be used to produce an index of forest density and supplement other forest reconstruction methods. Selected for presentation at American Association of Geographers Annual Meeting, New Orleans, LA.

#### 259 • Regenerative Design in New York City SHAUNA RICKETTS

FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

As climate change continues, humans must search for new methods of adaptation in the way they construct and interact with their environments. The goal of this project is to define and explore the concept of regenerative design in the context of the New York City urban landscape. According to Busby (2015), regenerative design, "features human construction that contributes positively to co-existence and restoration of natural cycles in our biosphere, to sustain all life." This research focuses on the impact of climate change on New York City's urban landscape, and how urban architecture can adjust as a response to the rising sea levels and changes in weather patterns. In order to analyze the architectural design options for New York City, this project investigates the field of regenerative design through a literature review and interviews with experts and NYC residents. Regenerative design ideology and case studies serve as examples of strategy implementation. The interview series provides an expert analysis of the design possibilities, as well as insight into public opinion and awareness of how regenerative design affects residents' living environments. The interviews also reveal the realities and challenges that exist within the field of regenerative design.

## 260 • Social Equitability of Access to Public Transportation in Shenzhen, China: Progress towards

## United Nations' Sustainable Development Goals 9 and 11 g

FACULTY SPONSOR: JENNIFER ROGALSKY, GEOGRAPHY

The unparalleled mass migration of rural peoples raises challenges for sustainable urban development and social equality. In 2015, the United Nations introduced the 2030 Agenda for Sustainable Development with seventeen goals to "end poverty, protect the planet and ensure prosperity for all" by 2030. Goals 9 and 11 highlight the importance of transportation development in fostering equitable societies. Transportation plays a critical role in mobilizing migrants from their rural homelands to the places they reside for work. Within cities, it is a fundamental component of mobility. This research examines the equitability of access to public transportation in Shenzhen, China. Formerly a fishing village, Shenzhen is now home to nearly twelve-million residents. A service-area analysis of walking distance to public transport stations was performed, then overlaid with demographic data in ArcGIS. Analysis reveals a spatial and social inequality of access to public transportation; significant portions are critically under-served. There is a divide in accessibility between the western and eastern halves of Shenzhen, and rural migrants and a minority urban population. This denotes the current failure in achieving goals 9, to develop inclusive infrastructure, and 11, to make cities and human settlements inclusive and sustainable by providing accessible transport systems for all. Selected for presentation at American Association of Geographers Annual Meeting 2018, New Orleans, IA.

## 261 • New York State Tornado Climatology S

## EMILY HANRAHAN

FACULTY SPONSOR: COLLEEN GARRITY, GEOGRAPHY

A tornado is most generally defined as a violently rotating column of air, and it is classified by the winds surrounding it on the Enhanced Fujita scale created by T. Theodore Fujita in 1971 and updated in 2007. By understanding the variables that affect the development and structure of tornadic events, tornado occurrence in the Northeast was analyzed to develop a research question to further study tornadoes within the state of New York. Tornado events have historically been influenced by topography, beginning on flat terrain and moving through areas of low elevation even continuing up onto plateaus and into mountainous regions. These patterns led to the ultimate question of whether there is a pattern to the location of tornado occurrence in New York, and is there a correlation with the state's topography. Results show that 93.4% of the tornadoes that have occurred since 1952 are classified at EF2 or below. There is no obvious pattern to the location of tornado occurrence and no direct correlation between occurrence and topography, although there are a few influencing factors including the Allegheny Plateau, Adirondack region, and the Hudson Valley.

#### 263 • Analysis of Shark Attacks in Australia Between 2011-2016 SHANNON KEANE

FACULTY SPONSOR: STEPHEN TULOWIECKI, GEOGRAPHY

Australia is located between the South Pacific and the Indian Ocean. Most of the Australian population is confined to its coasts. Australians participate in beach activities and water sports all vear long. These activities lead to human-shark interactions, occasionally in the form of shark attacks. The purpose of this study is to evaluate the geographic relationship between human population density, shark attacks and shark migration using ArcGIS. Data on the locations of attacks across Australia were collected and mapped. Various attributes were collected regarding each attack, such as fatal verse non-fatal, provoked verse unprovoked, date of attack, location, and type of shark. Of the 115 attacks that occurred between 2011 and 2016, 53 occurred in New South Wales. The attacks correlate to the population data, as New South Wales has the highest population. When analyzing the species responsible for attacks, Great Whites were found to be the deadliest shark in Australian waters. Results indicated that shark attacks are more likely to occur where shark migration is closest to the shore and in areas of high human population. Selected for presentation at SUNY Undergraduate Research Conference, Rochester, NY.

#### 264 • Geographic Trends of Hazardous Spills in Rochester, NY, 1977-2016 S GENA DRISCOLL-BRANTLEY

FACULTY SPONSOR: STEPHEN TULOWIECKI, GEOGRAPHY

This purpose of this research is to identify spatial trends in the distribution of spills of hazardous materials reported in the city of Rochester from 1977 to 2016. To complete this research, I used data provided by the New York State Department of Environmental Conservation, which details all reported spill incidents. I used Esri ArcMap GIS software to examine the spatial distribution of spill incidents over four ten vear intervals: 1977-1986. 1987-1996. 1997-2006 and 2007-2016. I then calculated percent change per square kilometer between each interval to identify changes in the distribution over time. I found that that the number of spill incidents reported to the NYSDEC increased over time, peaked in the period 1987-1996, then decreased during the period 1997-2016. Kodak Park reported the highest number of spills per kilometer of anywhere in the city throughout all four ten year intervals. In general, the number of spills in downtown Rochester decreased over time, while the number of spills on the outskirts of the city increased. By examining the distribution of hazardous spills, we can gain insight into historic, environmental, and economic trends within the city of Rochester since the late 1970s. Selected for presentation at SUNY Undergraduate Research Conference, Rochester, NY.

# 265 • Mapping Public Secondary Schools in Cusco, Peru to

#### Understand Access to Education for Indigenous Communities S SHANNON HAGGERTY

FACULTY SPONSOR: STEPHEN TULOWIECKI, GEOGRAPHY

Peru is a country in South America that was once the capital of the Inca Empire. Today 40% of Peru's population is indigenous. Previous research shows that indigenous individuals live in more impoverished rural areas which correlates to a lack of enrollment in education. Although indigenous education in Peru has improved, inequality remains. One challenge to understanding access to education for indigenous communities is a lack of spatial data on the location of schools in and near indigenous territories. This poster presents research that mapped the locations of public secondary schools and indigenous territories in the Province of Cusco, Peru. All data were collected and mapped using geographic information systems (GIS) software. The locations of schools were collected using ColegiosEnPeru.org and Google Maps. Data layers of indigenous territories, elevation, roads, and cities were acquired to understand spatial patterns of schools. This research project located 457 schools in the Province of Cusco, which tended to be located along major travel corridors and valleys, suggesting that indigenous populations in the mountainous regions far from roadways may have more limited access to schools. The dataset developed for this research will be useful in future research into school access for indigenous populations in Peru.

#### 290 • A GIS Habitat Analysis: Indiana Brown Bat (*Myotis sodalis*) VERONICA MEDINA

FACULTY SPONSOR: JAMES KERNAN, GEOGRAPHY On May 8th 1967, the Indiana brown bat (Myotis sodalis) was designated by the U.S Fish and Wildlife Service as an endangered species; numbers have since reduced from just over 1 million to 530,705. The decline in Myotis sodalis' population can be attributed to: habitat loss and fragmentation, disturbances in hibernation caves and most recently, white-nose syndrome. The purpose of this research was to determine the most suitable maternity roost conservation areas for the Indiana brown bat, within Jefferson County, New York. The study area was determined based on availability of data and conservation priority. Through the use of Geographic Information Systems (GIS), potential conservation areas were determined. The five factors considered were: proximity to wetlands, forest edge foraging habitat, land use and elevation. The suitability analysis revealed the eastern portion of Jefferson County to be of the highest suitability. The protection of this region would best aid in the preservation and rehabilitation of Myotis sodalis.

## GEOLOGICAL SCIENCES

101 • Correlation of Spreading Center Age and Rare Earth Element Enrichment: Mid-Atlantic Ridge, Red Sea Spreading Center, Galapagos Spreading Center PAUL NICHOLS

## FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

<sup>87</sup>Sr/<sup>86</sup>Sr, <sup>143</sup>Nd/<sup>144</sup>Nd, and <sup>206</sup>Pb/<sup>204</sup>Pb data as well as Rare Earth Element (REE) data were collected from the Mid-Atlantic Ridge, Galapagos Spreading Center, and Red Sea Spreading Center. The data was mined from Earthchem.org, a major data repository for geochemical data from rocks around the globe. sotope data were used to determine the primary mantle composition of the rocks from each location. Since the three locations are all seafloor spreading, the isotope data typically trends around the mantle array line. REE data indicates if fractionation of the main mantle composition occurred. There is a strong correlation between young spreading centers and the abundance of Light REEs, but as the mid ocean ridge basalts grow older the LREE trend seems to be more variable. This suggests that early MORBs tap a relatively new mantle source, but through aging, the source erupts depleted LREEs more frequently, alongside the occasional enriched rock. The data suggests that in a perfect system, the primitive mantle starts off enriched in LREEs, but will fractionate them out until the source is depleted, so the less common enriched rocks in an old spreading center must come from a different mantle source that has not fractionated.

#### 102 • Assessment of Wave Processes Affecting Spirit Island AMELIA MINDICH

FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

In 2011, The Fond du Lac Band of Lake Superior Chippewa purchased Spirit Island, located in Spirit Lake in Duluth, Minnesota. The Ojibwe inhabited Spirit Island prior to colonial intervention. Before 2011, the lake was altered by the construction of hydroelectric dams and heavy metal contamination. In comparison to an 1863 map, a large portion of Spirit Island has eroded. The wetlands of Spirit Island were abundant in wild rice, which is of vital cultural and economic significance to the band. This research project in coordination with the FLDR attempts to determine if water-waves are the primary control on the erosion of Spirit Island. We we applied the method from Karimpour et al. (2017) for waves in fetch-/depth-limited conditions to estimate wave properties in Spirit Lake and concluded that the northeastern shore is most subjected to erosion. After applying the method to a digitally created wetland, the wave energy would reduce the shoreline by 76%, suggesting that erosion is directly dependent on fetch. We used flume experiments modeled on a profile of Spirit Island to measure the minimum wave conditions required to induce shoreline transgression. The rate of sediment erosion is 0.5769 cm/30 minutes for Spirit Lake. Selected for presentation at Geological Society of America 2017, Seattle, WA.

## 103 • Paleontologic Evidence of Postglacial Climate Change S ANTHONY WAGMAN

FACULTY SPONSOR: JACALYN WITTMER-MALINOWSKI, GEOLOGICAL SCIENCES RICHARD YOUNG, GEOLOGICAL SCIENCES The last (youngest) glacier advance in the Genesee valley was as recent as 13,000 years ago,

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coincident with a worldwide climatic cooling known as the Younger Dryas event. At Carter pond located approximately 2.7 miles south of the Fowlerville morainal complex and approximately two miles northeast of Geneseo there is a surficial peat layer overlying well-preserved cross-bedded sands with an optically stimulated luminescence age of approximately 13,000 years and that overlie lake beds with a carbon 14 calendar corrected age of 16,545 ± 40 years before present. The lower part of the surficial peat contains an interval rich in mollusks, gastropods and pelecypods. A wood sample embedded in the shell horizon has a carbon 14 calendar corrected age of 12,895  $\pm$ 30 years. The present study will categorize and identify the fossils present in an attempt to understand the climatic implications. Information about the Younger Dryas cold period may have implications for modern studies of rapid global climatic change.

## 104 • Diversification of Species in Middle Devonian Reefs of Western New York in Comparison to Modern Coral Reefs

#### PETER DE GARAY, COLIN HICKEY

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The structure of modern coral reefs was compared to a sample of a coral reef flank deposit that formed in Western New York during the Middle Devonian time period. Middle Devonian reefs were dominated by Rugose corals, stromatoporoid sponges, and algal structures. Breviphrentis Superstes and Zaphrentidae Heliophyllum were two Rugose corals identified as prominent reef builders in the flank. Another significant reef former that was present in the coral flank was Favosites Hamiltoniae. In contrast, scleractinian corals, such as Acropora hyacinthus, Pocillopora damicornis, and Goniastrea favulus dominate modern reefs. The purpose of this study was to determine the diversity of a sample from the Onondaga Limestone, a Middle Devonian carbonate compared to modern reefs. This was done by identification of all specimens on the Devonian reef block compared to the species of reef formers that are present today.

## 121 • Conodont Biostratigraphy of the Middle-Upper Devonian to Carboniferous Chattanooga Shale and Bounding Units from Western

#### Tennessee EMILY HAUF

# FACULTY SPONSOR: D. JEFFREY OVER, GEOLOGICAL SCIENCES

A 16-meter thick core interval through the Chattanooga Shale from Western Tennessee was determined to contain two major boundary intervals: 1) the Devonian-Carboniferous in Box 56 interval 79.25-79.55 m. determined via the presence of Devonian fauna, including, but not restricted to, *Palmatolepis glabra* prima Ziegler, *Pa. distorta* Branson & Mehl, *Pa. perlobata* grossi Ulrich & Bassler, and 2) *Pa. perlobata* perlobata Ulrich & Bassler, 1924 to *Carboniferous fauna*, including *Siphonodella* branson *Ji*, *S. hassi Ji*, and *S. quadruplicata* (Branson & Mehl), and the Fransian-Famennian boundary interval in Box 66 (90.37 m)

was determined via the presence of the transition from Frasnian fauna, including Ancryodella hamata Ulrich & Bassler, 1926, Pa. bogartenis? (Stauffer), and Pa. winchelli? (Stauffer) to Famennian fauna, including Pa. subperlobata Sandberg & Ziegler, 1934, Pa. perlobata perlobata Ulrich & Bassler, 1926, Pa. regularis? Cooper, and Pa. quadrantidosalobata Sannemann, 1955a M2 Ji & Ziegler 1993. Selected for presentation at Paleontological Research Institute Summer Symposium 2017, Ithaca, NY.

## 122 • Photographic Analysis and Identification of Sub-Precessional Cycles Within Upper Devonian Pro-Deltaic Muds, Western New York ADELE ANTALEK

FACULTY SPONSOR: D. JEFFREY OVER, GEOLOGICAL SCIENCES

Strata in the Upper Devonian stage of western New York shows evidence of 20,000 year precession cycles as well as longer astronomical forcing events. Using photography and photographic analysis, it is possible to discriminate shorter cyclic units. This allows for the identification and correlation of sub-precession cycles within the Devonian, as well as the possibility to determine their origin. This study encompasses the preliminary identification of smaller cycles within the 20,000-year precession cycles. Initial visual observations suggest the presence of cycles at the mm, cm, and dm scales. This study also focuses on correlation of these cycles in correspondence with the creation of a step-by-step method for cycle identification through photographic analysis.

## 123 • Pycnodontiformes Tooth in the Goodland Formation, Lower Cretaceous, Texas, USA KLAJDI MACOLLI, HARRISON CASSETTA

FACULTY SPONSOR: D. JEFFERY OVER, GEOLOGICAL SCIENCES

The Goodland Formation of the Fredericksburg Group is a white, fossiliferous, micritic limestone with thinly bedded calcareous sandstones that overlies the Walnut Formation and is overlain by the Kiamichi Formation. The Goodland limestone preserves a multitude of Early Cretaceous invertebrate and vertebrate fossils and ranges in age from 105.5 Ma to 103.4 Ma. A tooth, about 7 mm wide and 10 mm in length, was determined to be within the order Pycnodontiformes, which was towards the back of the mouth and used for crushing food. The extinct group of Pycnodontiformes is a characteristic component of the Late Mesozoic and Early Cenozoic shallow water marine vertebrate fauna that underwent an explosive morphological diversification during the Late Cretaceous. These organisms grew up to 1 meter in length, and are similar morphologically to modern angel fish, butterfly fish, and triggerfish.

#### 124 • Testing Facies Variation on Micro Bivalve and Ostracode Predation by Gastropods, San Salvador Island, Bahamas JOSEPHINE CHIARELLO, TIMOTHY CLARK, NICOLE GREGG

FACULTY SPONSOR: D JEFFREY OVER, GEOLOGICAL SCIENCES

Change in mollusk predation frequency has been reported across the Pliocene-Pleistocene boundary on the United States Atlantic Coastal Plain. Past studies have attributed this change to a mass extinction event. Micro bivalve and ostracode predation across the Pliocene-Pleistocene boundary is variable and may be facies controlled as compared to regional biotic change. The goal of this study is to determine if modern predation varies laterally based on depositional facies in order to use as a proxy for the Pliocene-Pleistocene extinction. On San Salvador Island, 1 kg samples of the upper 5 cm of sediment were collected from nine lacustrine to nearshore shelf depositional facies. The 0.5 to 2 mm fraction was separated for micro bivalves and ostracodes and sorted into groups showing predation and no predation. A statistical analysis will be completed in order to determine if depositional facies affects frequency of predation.

#### 128 • Magnetic Susceptibility and Sea-Level Change in Upper Devonian Strata, Chattanooga Shale, Western Tennessee JOSEPHINE CHIARELLO FACULTY SPONSOR: D. JEFFREY OVER,

GEOLOGICAL SCIENCES

Magnetic susceptibility (MS) is a proxy for the concentration of ferromagnetic minerals found in sedimentary rocks, which vary with sea level fluctuations. The Devonian Period marks an important interval in geologic history, a time of major extinction events and sea level changes. A drill core through the Chattanooga Shale from the Illinois Basin in western Tennessee contains a 14 m thick interval of Upper Devonian strata, which includes the Frasnian-Famennian (F-F) and Devonian-Carboniferous (D-C) boundaries. MS was measured at 5 cm intervals. The MS values reveal six major trends with 27 smaller trends, 14 of which are increasing trends. The Frasnian-Famennian boundary is at 89.65 meters; the D-C boundary is at 80.9 meters as determined by conodonts. Both boundaries are characterized by disconformities, which appear as abrupt shifts in MS. Other disconformities are at 82.4, 86.9, 88.6, 89.8, and 93.1 meters. Selected for presentation at Paleontological Research Institution, Ithaca, NY.

#### <u>HISTORY</u>

250 • The War of Rhetoric: An Analysis on How the Revolutionary Rhetoric Affected Ideas and Sentiments of the American Revolution from 1767-1776 JESSICA LISI

FACULTY SPONSOR: CATHERINE ADAMS, HISTORY This poster serves to analyze how rhetoric was employed during the American Revolution, and therefore what the use of this rhetoric reveals about the culture of the era. I argue that there was another type of war alongside the physical war; a war of words. This poster looks at several phrases and traces their uses, meanings, and implications throughout this period, and looks at how the colonists were more concerned about preserving

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values they felt they were threatened more than they cared about fighting for revolution.

# **251** • Medievalism of the Maid SHREYA SRINATH

FACULTY SPONSOR: YVONNE SEALE, HISTORY Joan of Arc is an exceptionally popular historical figure, renowned for her role in turning the tide of the 100 Years War in the favor of the French. However, her achievements subjected her to an extraordinary amount of controversy both during her life and after her death. As a result of this, Joan of Arc was sensationalized into a symbol for various sociopolitical and economic groups and causes, replacing historical fact with myth. This would be critical in the foundation of what today has become her legend. This presentation attempts to trace the production of these myths and their impact on how modern society views Joan of Arc today.

#### 252 • The Medieval

Premonstratensian Women

#### **Prosopographical Project** MATTHEW BURLEY, ALISON COGGINS

FACULTY SPONSOR: YVONNNE SEALE, HISTORY KIRK ANNE, COMPUTING AND INFORMATION TECHNOLOGY

This digital humanities project represents an attempt to digitize the information compiled in Dr. Yvonne Seale's doctoral research on medieval women in the Premonstratensian religious order. With the help of Dr. Kirk Anne, this project represents the ongoing effort to build a publicly accessible online database documenting members of the Premonstratensian Order.

## LANGUAGES AND LITERATURES

#### 203 • Chinese Characters Overseas SAVANNAH WILLIAMS, SHANNON LYNCH

FACULTY SPONSOR: JASMINE TANG, LANGUAGES

This research surveys the transliteration and romanization of Chinese characters. One of the oldest writing systems in the world, Chinese characters are used outside of China and are the foundation of various Asian languages, such as Korean and Japanese. In Taiwan, the influence of both Han Dynasty and Japanese colonialism transformed Taiwanese written language into Taiwanese Kana. Today, the Chinese language is often learned through Hanyu Pinyin. For our research, we will discuss the various facets of the adaptation of Chinese characters.

#### 204 • Chinese Calligraphy Writing Styles and Personalities

#### NELLY LIN. SCOTT HAWLEY

FACULTY SPONSOR: JASMINE TANG, LANGUAGES AND LITERATURES

Chinese calligraphy is not only a writing style, but also a form of art. Calligraphy embodies a style and personality relative to its artist via its length, thickness, and neatness. These characteristics can express the mood of the calligrapher and exemplify their style much like the varying styles of Van Gogh and Picasso. A Chinese calligrapher can use these varying techniques in order to fully express themselves during the moment of the work's conception, which could simultaneously ease their mind and stresses. Chinese calligraphy is not only a writing style, but also a form of art that has the ability to express one's personality.

## 226 • The Vitality of the Spanish Language in the Northeastern United States

#### ALEXANDRA ROGERS, JONATHAN NIEVES, SARAH PHILLIPS

FACULTY SPONSOR: SUSANA CASTILLO-

RODRIGUEZ, LANGUAGES AND LITERATURES The vitality of the Spanish language, specifically in the northeastern region of the United States, is very important. This area does not have as much Spanish influence (via Central/South American and Caribbean countries) as the Southwest, and therefore there has not been as much research done. According to some studies, for example "The Vitality of Spanish in the United States" by María Carreira, the future of Spanish is a bit uncertain, and we want to study the effects caused by this uncertainty. Some possible factors could include but are not limited to: the stigma of Spanish in the United States, the decrease in immigration rates, and the decline in transmission of the language between generations of speakers.

# 227• Hispanic Media in the United States

## ERIN MAUD, JANINE ROSSI, RACHEL DAVIS

FACULTY SPONSOR: SUSANA CASTILLO-RODRIGUEZ, LANGUAGES AND LITERATURES There is a correlation between Hispanic populations in the United States and the prevalence of Spanish media in those regions.

## NEUROSCIENCE

## 206 • Distinct Patterns of Neural Activity Associated with Suicidal Ideation versus Non-Suicidal Self-Injury

JAMI GOLDSON, SYDNEY KLAINBERG, ZARMEEN ZAHID, KADIN FAWCETT, LIAM MCMAHON, ALICIA ROTH, CHRISTINA SILVA, BRIANNA SCHIBELY-LAIRD

FACULTY SPONSOR: MICHAEL LYNCH, NEUROSCIENCE

The goal of the current study was to examine changes in blood oxygenation across the dorsolateral prefrontal cortex (DL-PFC) during two different anagram tasks, and determine whether there were patterns of activity that could be associated with participants' reports of suicidal ideation or non-suicidal self-injury (NSSI). The sample consisted of 296 undergraduates (77.4% female, mean age = 18.8 years). Participants completed a survey that included a question indicating whether the participant engaged in NSSI and the Beck Depression Inventory, which contained an item measuring suicidal ideation. Participants also completed two cognitively challenging anagram tasks in which they were asked to rearrange the letters of a stimulus word to create a new word. Functional near infrared (fNIR) spectroscopy was used to assess changes in blood oxygenation across 16 distinct regions of the DL-PFC as a measure of neural activity during the anagram tasks. Results indicated that suicidal ideation and NSSI were associated with taskspecific changes in blood oxygenation across the DL-PFC. Some of these effects were modified by participant sex. These findings suggest that cognitive tasks with distinct demands may generate patterns of activity across the DL-PFC that are associated uniquely with suicidal ideation or NSSI. *Selected for presentation at Association for Psychological Science, San Fransisco, CA.* 

#### 207 • Promoting Interest in STEM through the Lens of Neuroscience LUKE BAMBUROSKI, PEMA SHERPA, ELLAYNA FREDERICKS, ALEXIS SAUNDERS

FACULTY SPONSOR: TERENCE BAZZETT, NEUROSCIENCE

The Neuroscience 215: Applications in Neuroscience course focuses on engaging the community through STEM outreach. In this capacity, a bridging program has been established with RKids so that students can interact with elementary aged children in an informal setting. Children enrolled in this after-school program are considered "at-risk", and are not expected to have the exposure to STEM outside of this program. Various activities and demonstrations were implemented in an attempt to increase exposure and interest. The goal of NEUR 215 is to improve the interest of these children in STEM and to gauge whether early exposure increases children's engagement in the sciences.

# **208** • Sex Differences and Motor Degeneration in Aging Mice: A

#### **Preliminary Study**

MOLLY BRADY, JOSH BOYER, TAYLOR BROPHY, SUNITA SINGH

FACULTY SPONSOR: TERENCE BAZZETT, NEUROSCIENCE

Huntington's disease (HD) is an autosomal dominant inherited neurodegenerative disorder that causes degradation of basal ganglion cells. Destruction of these cells is characterized by a complex symptomatology including motor impairment, cognitive deficits, and social dysfunction. The development of useful and sensitive measures of motor coordination in animal models is paramount in advancing basic research in HD. In this preliminary study, C57/BLJ mice are being tested in novel paw reaching chambers used to evaluate fine motor coordination. These same animals are also tested in a rotarod apparatus, a well-established device designed to measure gross motor coordination. Measures from both tests will be correlated to determine differences in performance between these two behaviors as the mice age. Future research will use these same tasks to evaluate changes in transgenic knock-in models of HD compared to this established baseline of motor decline seen in normal aging. Further, sex differences in these tasks will be compared.

209 • Promoting STEM Education and Awareness Among Elementary School Students Through Neuroscience: Efficacy of STEM Related Activities at the Rkids Afterschool Program ZARMEEN ZAHID, TAYLOR BROPHY, ADAM WEAVER, SABIHA UDDIN, HELEN MERRIWETHER

# FACULTY SPONSOR: TERENCE BAZZETT, NEUROSCIENCE

Neuroscience 215: Applications The in Neuroscience course is structured around community outreach efforts with elementary school students. Working in cooperation with the RKids after-school program in Geneseo, this course works to encourage interest in STEM among "atrisk" youth. As part of this outreach program, children of various ages and academic standings participate in interactive activities geared towards STEM education and awareness. The objective of this course is to provide these children with early exposure to the sciences, and to reinforce future activity in STEM-related areas. A secondary objective is to assess the impact of this early exposure on the children's future interests.

## 210 • Exposure to the Glutamatergic Drugs MK801 and CDPPB Affects the Development of Social and Motor Behaviors in a

#### Schizophrenia Model AMANDA HODGE, ASHLEY MELGAR, CAELEY

SHEEHAN, MADELINE HAMMER, LAUREN BAMFORD, JULIAN DAVID-DRORI, VINCENT DO, LAUREN PLEVY FACULTY SPONSOR: VINCENT MARKOWSKI,

FACULTY SPONSOR: VINCENT MARKOWS

The neurodevelopmental hypothesis depicts schizophrenia as a long-term consequence of aberrant development of the glutamate and dopamine neurotransmitter systems during the perinatal period. The drug MK-801 is a glutamate N-methyl-D-aspartate (NMDA) receptor antagonist that produces schizophrenia-like symptoms in laboratory rodents when administered early in development. Our laboratory has been investigating whether CDPPB, a positive allosteric modulator of the metabotropic glutamate receptor 5 (mGluR5), would reverse the effects of MK-801. To test this, mice were first administered 0.25 mg/kg MK-801 as neonates, and later given 10.0 mg/kg CDBBD or saline during their juvenile period. After mice reached adulthood, they were examined with the Rotarod motor coordination test and the 5-trial Social Memory test. Motor coordination in females but not males was impaired by MK-801 exposure, an effect that was not reversed by CDPPB. Neither drug affect social memory, although males showed more habituation to a familiar partner than females. Preliminary results from this work in progress indicate that MK-801 can produce long-term sexand domain-specific effects on behavior.

#### 211 • Step-by-Step Procedures for Acquiring Neuroanotomic Data from Mice

#### JULIAN DAVID-DRORI, CAELEY SHEEHAN, MICHAEL DONEGAN

FACULTY SPONSOR: VINCENT MARKOWSKI, NEUROSCIENCE

The Markowski Neurotoxicology Lab in the Psychology Department has made many contributions to the study of Psychology. Much of the research done in the lab utilizes data from the brains of the mice who acted as the subjects of the study. Although the brains shed light on the issues which are detailed in the study, one might begin to question how the brains, and subsequent data, were obtained. This presentation will give a stepby-step analysis of the process by which the brains were acquired, prepared, and examined for data.

## **PHYSICS & ASTRONOMY**

105 • EBT-XD Radiochromic Film Sensitivity Calibrations Using X-Rays and Proton Beams

BARAK STOCKLER, GUNNAR BROWN, MATTHEW KLEIN, ANTHONY COOPER, JACOB WOOD FACULTY SPONSOR: CHARLIE FREEMAN, PHYSICS & ASTRONOMY

Radiochromic Film (RCF) is a transparent detector film that permanently changes color following exposure to ionizing radiation. RCF is used frequently in medical applications, but also has been used in a variety of high energy density physics diagnostics. RCF is convenient to use because it requires no chemical processing and can be scanned using commercially available document scanners. In this study, the sensitivity of Gafchromic<sup>™</sup> EBT-XD RCF to protons and x-rays was measured. Proton beams produced by the college's Pelletron accelerator were directed into an evacuated target chamber where they scattered off a thin gold foil. The scattered protons were incident on a sample of RCF that subtended a range of angles around the scattering center. A new analysis method, which relies on the variation in scattered proton fluence as a function of scattering angle in accordance with the Rutherford scattering law, is currently being developed to speed up the proton calibrations. Samples of RCF were also exposed to x-ray radiation using an X-RAD 160 xray irradiator, allowing the sensitivity of RCF to xrays to be measured. This research was funded in part by the SURGE REU grant from the NSF and the LLE. Selected for presentation at 59th Annual American Physical Society Division of Plasma Physics, Milwaukee, WI.

#### 106 • Using Rutherford Backscattering Spectroscopy to Characterize Targets for MTW GUNNAR BROWN, BARAK STOCKLER

FACULTY SPONSOR: CHARLIE FREEMAN, PHYSICS & ASTRONOMY

**STEPHEN PADALINO, PHYSICS & ASTRONOMY** A study is underway to determine the composition and thickness of targets used at the multiterawatt (MTW) laser facility at the Laboratory for Laser Energetics (LLE) using Rutherford backscattering spectroscopy (RBS). In RBS, an ion beam is incident on a sample and the scattered ions are detected with a surface barrier detector. The resulting energy spectra of the scattered ions can be analyzed to determine important parameters of the target, including elemental composition and thickness. Helium and deuterium beams from the 1.7 MV Pelletron accelerator at SUNY Geneseo have been used to characterize several different targets for MTW, including CH and aluminum foils of varying thickness. RBS spectra were also obtained for a cylindrical iron buried-layer target with aluminum dopant that was mounted on a silicon carbide stalk. The computer program SIMNRA is used to analyze the spectra. Selected for presentation at Division of Plasma Physics, Milwaukee, WI.

## 125 • WIYN Open Cluster Study: UBVRI Photometry of Open Star Cluster M48

#### ALEXANDER BELLES, ALEXIS IRWIN

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

We present a five-color photometric study of the open star cluster M48. A total of 277 images, taken on the WIYN 0.9-m telescope over three nights, were processed and stellar magnitudes were calculated using a point-spread-function determined for each frame. This data was calibrated using Landolt standards taken on one of the nights and then combined into a master photometric catalog. Cluster parameters of distance, age, interstellar reddening, and metallicity were derived. This cluster, although very nearby, has not been well-studied previously and M48's age makes it an interesting candidate for future spectroscopic abundance studies. Selected for presentation at 231st Meeting of the American Astronomical Society, Washington DC.

## 126 • Lithium Abundances of Cool Stars in M48

#### ALEXIS IRWIN

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

We present a spectroscopic study of the cool stars in open star cluster M48. Lithium abundances were measured and reported for cool cluster stars. Trends in this data can be used to determine information about the cluster age and metallicity.

# **127** • Classification of Nebulae BRITTNEY HEROLD

FACULTY SPONSOR: AARON STEINHAUER, PHYSICS & ASTRONOMY

There are seven different classifications of nebulae in the universe. This research was conducted to discover how each type of nebulae is different. nebulae are formed from exploding stars. However, there are many types of stars and different ways a star dies. Depending on the circumstances a different type of nebulae is formed. The research was done by a team of students looking up facts and questioning professional astronomers and astrophysicists. The Nebulae are spectacular sights with the beauty to take one's breath away that should be shared with others.

## POLITICAL SCIENCE & INTERNATIONAL RELATIONS 253 • Public School Funding and Graduation Rates S

#### LAUREN GIANTELLI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

There are three sources of funding for public education for kindergarten through twelfth grade education, they come from the federal, state and local levels. The composition of these three varieties varies quite drastically across school districts even when they are within the same state. The federal government is not the largest contributor to states' public education, it is said that funding from the federal government only makes up a mere 9% of a school districts budget, and aside from the small amount received by the federal government, it's up to the individual states and their school districts to contribute the rest. By investigating the amount of money spent per student, graduation rates can be investigated and in turn see if there is a correlation between funding received per student and the graduation rates on a state level.

## 254 • Recycling Crisis in Greece Coming at the Cost of its EU Relations S

#### JORDI MENKHORST

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Greece, a country previously well known for its beautiful coast line and marvelous waters, now faces the challenges that pollution and industrialization have created, which jeopardize several of its main consistent sources of income. Athens, as well as other cities along the coast of the Greek mainland such as Thessaloniki, Patra, and Elefsis are all major pollutants, largely due to the unmonitored industrial pollution and abundance of household waste water. Greek authorities, intriguingly have not encouraged their citizens to pursue better environmental practices, while recognizing that "logic behind municipal waste collection, which charges residents depending on property size, is flawed" (Phys.com). Greek citizens, as a result, fail to comprehend and comply with the regulations of the European Union, European Commission, as well as European Court of Justice, amongst other organizations. Recently, in response to Greece's inability to systemize to the EU's demands, the European Commission has fined Greece 16 million euros for not complying with the waste water treatment regulations. This is simply one of the sanction taken by Intergovernmental organizations to push Greece into a better direction. Unfortunately, since 1999, there has been a minimal learning curve among Greek citizens and authorities.

#### 255 • Private Prisons: Panacea or Destruction? S BRADLEY BRANDT

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The United States holds the title of highest incarceration rate in the world, as it is home to 4.4% of the world's population and 22% of the world's prisoners. As a citizen, you have a greater chance of being imprisoned than any other country, and if you are a minority, that chance is statistically even greater. Specifically, Latinos are more than twice as likely and Black Americans occupy an incarceration rate five times greater than that of their white counterparts. The sharp, dramatic rise in United States prison population began in the 1980s, born from policies and ideology which incited the Drug War and led to the rise of mass incarceration. The term "mass incarceration" is used to describe not only the comparatively and historically extreme rates in the number of imprisoned people, but in the concentration of imprisonment among minorities.

## 256 • Public Housing and Federalism: How State Decisionmaking Effects Outcomes of Section 8 Housing CHRISTOPHER HANSE

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS This poster details the variances in implementation of Federal Section 8 housing policy between states, and pinpoints key differences between states controlling for ideology and various related factors. The empirical analysis will detail variables of statistical significance and if there are any driving causes of the state's ideology in terms of policy variances. The variables will include things such as number of vouchers distributed, timeframe of housing auctions for Section 8 housing, housing supply for the program, and other potential causal factors.

#### 257 • Social Welfare Policy for LGBT Homeless Youth RYAN VAN VOORHIS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The US Department of Housing and Urban Development counted 549,928 homeless people one night in January 2016. Of these, 35,686 were youths under 24. A disproportionate number of these youths identify as LGBT, with numbers ranging from 20 to 40%. The overrepresentation of LGBT youth in the homeless population is due to unsupportive family attitudes toward their sexual orientation or gender identity. The homeless experience of an LGBT youth is dangerous, with, in 2010, 58% reporting sexual assault, 44% reporting resorting to "survival sex," 42% reporting alcohol abuse and 62% reporting suicide attempts. Despite the alarming statistics and anecdotes, no federal program addresses LGBT youth homelessness. Unfortunately for LGBT youth, homeless shelters can often become places of harassment, discrimination, and violence. Residents can be homophobic and hostile, and shelters enact discriminatory ordinances such as special uniforms, separate facilities, or denial of service. New solutions are required to meet the needs of this population. Considering existing public/nonprofit infrastructure for homeless services, the extreme danger of youth homelessness, the unparalleled ability of the federal government to acquire resources, and the manageable number of homeless LGBT youths, ending LGBT youth homelessness is both imperative and achievable at a negligible cost.

#### 262 • Childhood Obesity in America: Solutions and Future Problems SAMUEL LONGBOTHAM

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The epidemic of childhood obesity has risen dramatically over the past few decades and is being fueled by many different factors. With the increase of connivence in our lives and social policies that don't promote healthy lifestyles people are becoming more and more sedentary. By looking from state to state to find examples of what is working to combat the rise of childhood obesity it can show us what needs to be replicated across the nation to help stop this obesity epidemic.

## 266 • Federalism and Women's Reproductive Rights: A Study of the Variations of States' Willingness to Adopt Reproductive Rights Policy & ALEXANDRA LOVRIC

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The development and implementation of reproductive health care policy displays significant variations when considered across our system of diverse jurisdictions. With consideration for both political and social data collected from all 50 states, a regression analysis is used to emphasize possible factors of statistical significance to predict a state's willingness to adopt reproductive healthcare policies. Some of the variables examined include the percentage of women in the state legislature, the relative strength of each political party in the state, the state government's ideology, the degree to which a state restricts Temporary Aid to Needy Families (TANF), teen birth rate by state, estimations of females who are uninsured, state education levels per capita, and few other notable variables. Ultimately, the research delineated in this poster emphasizes several key factors. In particular, the research presented suggests that the more Democrats there are in office, the more inter-party competition, and the more women there are in a state legislature, the less restrictive a state's policies will be towards reproductive healthcare. A positive correlation is also found between the restrictiveness of a state's TANF policy and conservative government ideology with the restrictiveness of a state's reproductive healthcare policies.

#### 267 • Homelessness and Federalism: Two Converging Ends SAMUEL SILVER

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

My poster will be based on research found on the homeless population based in the United States, and federalism, the relationship between the local, state and federal government. My project will discuss how the current landscape is not solving the substantial problem of homelessness, and what steps need to be taken in order to try to combat the pervasive issue.

#### 268 • Head Start Program S SARAH HARTNETT

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The target population that I would like to focus on is children, in particular, children that are living in harsh conditions and cannot easily access their basic needs. My reasoning for choosing this target population is because I would like to work in the education field one day. My goal in life is to teach and protect my future students so learning more about a program that helps children would be beneficial for both me and my future students. A program that I found that seems to address most

A program that I found that seems to address most of the criteria I have set in place is the Head Start Program. Head Start is for children from birth to

#### Posters 1 • 11:15 AM - 12:45 PM

age five who belong to families with incomes below the federal poverty guidelines. This program provides free learning and development services to children. Children with disabilities are also welcome to receive the Head Start Program, which was another important aspect that I wanted to consider when looking for a social welfare program because I want to specialize in special education.

#### 269 • The Opioid Epidemic Across States S SHAUNA RICKETTS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

For my research, I explore the issue of state opioid usage. In order to provide a thorough statistical analysis of this issue, I gathered data to compare how specific factors impact the rates of opioid usage across the states. Factors that I explore include, but are not limited to the political ideology of the state, state income rates, level of education, involvement in social groups, access to public transit, funding of prevention programs, rehabilitation program funding/prevalence, state opioid policy, access to medical care/healthcare and parental involvement in early childhood. The purpose of my research is to identify what the most significant factors are in determining the rate of opioid deaths per state. With this information, I suggest areas that states should focus on to combat the opioid epidemic. Included in these suggestions are both state and local level methods of action.

## 270 • Impact of Welfare Reform on Poverty in the United States S TIMOTHY PREZLOCK

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In 1996, President Bill Clinton promised to "end welfare as we know it" by overhauling the welfare benefits system. Clinton revamped Aid to Families with Dependent Children (AFDC) into the current program. Temporary Assistance to Needy Families (TANF) . This reformed the welfare system by establishing lifetime benefit limits and work requirements. Lesser known to the public, the program also devolved power to individual states through block grants. Since the reform, however, funding from the federal government has stayed at 1996 levels. This presentation intends to evaluate the components of welfare reform, how states have spent money allocated for TANF, and identify the impact the program has had on poverty levels throughout the country.

## 271 • Public Option Health Care System g

#### TOM NEWMAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS This is a presentation for a political science class (PLSC 312). The poster is on a public option health care system that I have worked out and designed. It goes through everything from funding, administration, and everything in between.

## 272 • An Analysis on Social Welfare Policy and the Problem of Homeless LGBTQ+ Youth *S*

#### VICTORIA LAROCCO

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The unique needs and issues facing homeless LGBTQ youth are frequently overlooked by all levels of government. Although LGBTQ youth are an overrepresented population among homeless youth, few organizations attempting to address LGBTQ homeless have specific plans for LGBTQ youth. Additionally, because there are no federal programs that attempt to aid homeless LGBTQ youth, this responsibility is increasingly falling on the shoulders of locally run non-profits. This project will seek ways to diminish LGBTQ youth homelessness, and provide help to those that have already found themselves in that position. It will explore how amendments to existing federal and state law could aid LGBTQ youth, both at the preventative level and once they have become homeless, as well as how state governments could work with already existing non-profits for the betterment of homeless LGBTQ youth.

#### 273 • The Effect of State Taxes on Inter-State Immigration and Emigration WESLEY EBERSOLE

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

One of the big topics of discussion in regards to states and regions in the United States in recent times is habitability. Citizens in certain areas complain how much it costs to live where they are. In certain states even the state next door is cheaper to live in. In particular census data has indicated that there has been a mass exodus of individuals from New York in the past decade or more. This loss of population has been so significant that it is projected that New York might even lose one to two of its congressional seats. Instead individuals have been flocking to states such as Texas. One of the reasons citizens stated for this movement out of New York is the high taxes, which make it more difficult to live here for both "upstaters and downstaters." I propose that New York's emigration plight is directly due to their high state income tax, sales tax, and property tax.

#### 274 • How Egypt's Authoritarian Regime has Affected Environmental Politics ALLYSON LENZ

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Authoritarian Egypt has led to political instability that has been the cause of innumerable issues. In particular, Egypt's environmental health has suffered a great deal. The biggest environmental concern plaguing Egypt is water scarcity and the health of the Nile River. How has sustained authoritarian rule, and other military focused policies, affected and limited Egyptian environmental politics and policies? The Ministry of Water Resources and Irrigation is a government agency dedicated to the health and maintenance of multiple subsets of Egypt's water, yet water continues to be affected by urbanization and tourism. The Nile Basin Initiative was created to preserve water resources, yet water is still scarce. By conducting an institutional analysis of the

Egyptian government, I argue that the authoritarian regime underfunds and understaffs these government agencies, further limiting Egyptian environmental politics.

## 275 • China's One Child Policy and the Effects of Overpopulation g CALLEN GROSS

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Images in the news of modern China as an industrial giant with booming modern metropolises have often been juxtaposed with uninhabitable smog-filled urban landscapes. China's rate of growth has reached an impressive 10% over the past two decades. With this growth comes an increase in population and a number of challenges to China's sustainable development. These challenges have come in the form of energy and water shortages, water and air pollution, cropland losses, desertification, and biodiversity losses. The sheer size of China poses a challenging task for government to impose environmental legislation and sustainability initiatives. As the Jinping government has liberalized, it has imposed more sweeping, and drastic reforms over a short period time. Although this is a step in the right direction for ensuring China's sustainable growth, some policies have fallen short. China still lives in the shadow of its One Child Policy, which until it was announced that it would be phased out in 2015, was a policy designed to mitigate the effects of overpopulation. This paper seeks to examine the effects of China's One Child Policy and the potential unintended social consequences that these policies have had.

#### 276 • How and Why has China Become the World Leader in Renewable Energy? S CASEY HAACK

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Despite being the world's leading producer of coal, China has shown an incredible shift in policy over the last decade towards green energy. It has created hundreds of thousands of jobs in the green sector and has significantly shifted its economy towards climate friendly sources of energy. In doing so, China has now positioned itself to take a leading role in shaping environmental policies across the globe. However, this poses several important questions. First, why would a county that has built its very foundation on coal and industrialization begin to shift its economy towards a relatively new sector of energy? And how has China managed to so rapidly make this transition in such a successful manner? Finally, what does this mean for the global environmental movement, now that the world's biggest polluter is becoming the largest producer of renewable energy? Using the analysis of qualitative and quantitative data, I will attempt to answer these three questions and reach a conclusion.

### 277 • The Blame Game: Deforestation in Haiti CHAISE CARL

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In this research paper I am going to focus on the causes behind the severe deforestation in Haiti. Popular explanation in the media places blame on the current impoverished Haitian population, but ignores the history of agricultural exploitation influenced by the colonialism of the French. I plan to research the factors of vulnerability of the population and the environment it inhabits. The "tragedy of the commons" interconnected with exploitative capitalistic tendencies help to aid in the explanation of deforestation in Haiti. I argue that the political and socio-economic instability in the country is the primary cause, while simultaneously defending the rural community and its attempts at combating the environmental degradation. I will create a qualitative and quantitative analysis using articles and statistical data from political science and environmental databases to support my argument.

#### 278 • The Environmental Impacts of Tobacco Production in Malawi CHRISTOPHER MANDRACCHIA

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

There has been a recent global shift in tobacco leaf production from wealthier to developing nations, especially on the African continent. While the economic benefits of tobacco farming have been a major selling point in the tobacco industry's push towards its production in developing countries, the negative environmental impacts have been largely overlooked. Dangerous environmental practices such as deforestation, as well as pollution caused by the use of pesticides and fertilizers have been linked to the widespread tobacco farming. This paper primarily looks to explain the factors behind the tobacco industry's decision to transfer a majority of its operations to developing countries. I argue that this shift can be explained by the relative lack of environmental regulations employed compared to that of the United States and Europe, and the vast resources available in the region. Malawi, whose economy is one of the most heavily dependent on tobacco in the world, will provide the main case study for this argument. I will answer the question while simultaneously focusing on the extent of the environmental impact related with tobacco leaf farming, additional economic and social considerations behind the issue, as well as the actions being taken to combat the problem.

## 279 • Paradise or Wasteland? Tourism as a Sustainability Threat: Boracay, Philippines S FRANCESCA BELLO

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This presentation will evaluate the toll tourism takes on the sustainability of a country. It is not uncommon for developing coastal countries with beautiful beaches to be tourist hot spots. Local economies that are dependent on tourism sometimes turn a blind eye to the environmental issues it poses. Boracay, Philippines is among these sought after destinations. This case study of Boracay will uncover the sustainability threats of a tourist driven economy in the developing world using a comparative politics theoretical framework. Boracay has fallen victim to overdevelopment and overpopulation. The construction of coastal resorts, restaurants and nightlife has made the tropical waters a cesspool for tourist waste. The Philippine government has declared Boracay a state of calamity and has ordered a full shutdown in an attempt to clean up the island. Not only is the environment unsustainable but the economy is as well. The livelihoods of Boracay citizens depend heavily on the money brought in from tourism. A shut down of the island will bring to light the instability of a tourism economy that developing nations face. This study will look at scholarly articles and quantitative data to highlight tourism as an environmental and economic sustainability issue.

## 280 • Day Zero Approaches: South Africa's Response to the Water Crisis in Cape Town S ISABELLA VICENTINI

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This summer, Cape Town, South Africa will become the first major city in the world to run out of water. After years of drought resulting from the everworsening effects of climate change on weather patterns, the country's reservoirs and ground water sources are dangerously low. Cape Town has already introduced measures to prolong the arrival of "Day Zero," such as implementing water usage restrictions; however these kinds of solutions are short term and not sustainable. On the day when South Africa inevitably has to shut off the taps for millions of its people, what will the government do? Using a comparative environmental politics lens, this paper will analyze other governments' approaches to drought and water shortage conditions to determine the viability of the South African government's plans. This kind of qualitative data will highlight effective solutions to handling a crisis of this magnitude.

## 281 • Cause or Consequence: Political Instability in Relation to the Environmental Implications of Monocrop Economies in Guatemala g JAMIE MCCORMICK

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Guatemala is home to a diverse collection of ecosystems, ranging from lush tropical forests to tepid valleys. Over the past few decades, major agricultural companies have gradually depleted the abundance of natural resources. Today, 88% of the land is owned by 3% of the population, and this disparity continues to grow. Monocrop economies have led to a state of ecocide, establishing deforestation and water pollution as a norm rather than an egregious state of nature. Palm oil production and large-scale banana plantations have given way to political strife between government and local communities. I will be focusing on Guatemala's indigenous populations, who have felt the strongest effects of environmental degradation while they continue to receive limited support. This paper goes on to argue that the establishments of monocrop economies and subsequent ecocide have given way to widespread political instability throughout Guatemala.

## 282 • The Environmental Grassroots Movement That Saved the Ogoni People of Nigeria's Niger Delta From Extinction S KYLE CHESTERMAN

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In 1957, Shell Oil began its unregulated and extensive oil drilling project in Nigeria's Niger River Delta. As the extraction of natural resources in the Niger River Delta began, the exploitation of the communities within the Niger River Delta began as well. Ignored by the international community, the oil companies, and the Nigerian government, the Ogoni people of Nigeria's Niger Delta took it upon themselves to stand up against the destruction and exploitation of their land and people. In 1990, the Movement for the Survival of the Ogoni People (MOSOP) was founded to end the environmental and cultural degradation of Ogoniland and the communities that resided in it. In this presentation, I hope to explore the causes of this environmental grassroots movement and its impacts on the international community. I plan on presenting this information by collecting a series of news articles and documents from the time as well as analyzing data regarding the adverse environmental impacts Shell Oil has had on the Niger River Delta.

## 283 • Malaysia: In the Age of Globalization can Environmental Concerns be Considered Domestic Issues?

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the the current international political climate, environmental issues are not confined to state borders. This can be seen in how the state of Malaysia's role in the international community has begun to change. Over three decades the state of Malaysia has been on a trajectory of exponential economic growth. The economic shift from agriculture to industrialization has had a wide range of implications for the state. One of the most discussed is the impact this economic growth has had on the environment. The state has seen a constant increase in deforestation and a decline in air quality, which both can be attributed to different facets of economic growth. These issues have raised an alarm in the international community and sparked a debate on whether environmental issues can be considered domestic and if their impacts contribute to global issues such as climate change. This paper will explore the role that international environmental policies have had Malaysian domestic issues. In order to assess both sides of this dispute, the causes and proposed solutions of Malaysia's environmental issues will be analyzed as well.

284 • Japan's Triple Disaster: Fukushima and Nuclear Policy, Seven Years Later S MICHAEL WALL

# FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

On March 11, 2011, a magnitude 9.0 earthquake triggered a tsunami off the coast of the Fukushima Daiichi Nuclear Power Plant in Okuma, Fukushima Prefecture. The resulting waves caused catastrophic meltdowns at the plant, and radiation was spilled into the Pacific Ocean and the area surrounding the plant. Seven years later, how has the disaster impacted nuclear energy policy in Japan, as well as the rest of the international community? Once a faithful promoter of civilian nuclear power, the Fukushima incident has spurred anti-nuclear movements across Japan, signalling a shift in political culture. However, Japan's government seems to show little intention of distancing itself from using nuclear energy altogether through policy.

### 285 • Environmental Consequences of Overpopulation and Overdevelopment in India NICOLE VENATOR

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

India is a nation that is plagued by overpopulation. Its population is over 1.2 billion people and is expected to reach 1.8 billion before it stabilizes. The excessive number of people has put a strain on their environment as India has to accommodate a growing population and produce much more to support it. Additionally, India is still a developing country and is trying to rapidly develop not only to meet the needs of tits growing population but also to keep up with the West. India is trying to raise its country up to the standards of other developed nations and wants to help the many citizens who live in poverty without access to electric, running water, sewage, or necessary infrastructure. But to do so it continues to burn fossil fuels, emit greenhouse gases, dump factory waste, and cut down forests, which creates massive amounts of damage not only to the environment but to its people as well. This paper will focus on the three largest environmental problems India is facing as a result of overpopulation and overdevelopment: water pollution, air pollution, and deforestation, and the solutions that are being implemented to assuage them and limit environmental pressures.

## 286 • Sri Lanka's Tea Plantations: The Growing Issues and the Treatment of its Cultivators S NYDIA CONSTANTINE

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Sri Lanka has been long known to be a large producer and exporter of tea, specifically its famous "Ceylon Tea." The tea industry has supported the economy of the state since before its independence in 1948, but in recent years, has declined in efficiency. Plantations themselves have decreased in productivity due to degraded soil, neglected areas of land due to low labor, vacancy of workers, damage due to intense climate change, and lack of technological advancement in terms of agricultural cultivation. This research will delve into what can be done to increase the tea plantations' productivity and growth through land ethic-focusing on the lifestyles of the workers in the tea plantation systems by emphasizing their importance to the land, providing a framework of sustainability education to their community, and therefore increasing incentive to respond to climate change and the lack of proper agricultural standards.

#### 287 • An Evaluation of the Minimum Wage JAMES CONNOLLY

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

An increase in the federal minimum wage to \$15 an hour, intended to supplement the income of the working poor, would negatively affect the employment levels of unskilled workers and fail to alleviate poverty. The push to increase the minimum wage to \$15 is a political tool, placed in the official platform of the Democratic Party, rather than a sound social welfare policy. The general opinion of economists is that the minimum wage fails to isolate the working poor as a target population due to the non excludable nature of its provision. That is, both a wealthy suburban teenager and a nineteen year old mother of two earns the minimum wage. The federal minimum wage increase also fails to take into account differences in cost of living between states and indeed within states. Additionally, the minimum wage has a negative effect on the employment of vulnerable, unskilled workers. As a social welfare policy, the minimum wage fails to alleviate the poverty of the working poor, its target population, while reducing the employment levels of unskilled workers and ignoring structural inequality in the U.S. economy.

#### 288 • The Arab Spring: A Revolution Against Rising Food Prices SOFIA VILLALON

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The Middle East and North Africa (MENA) is a region constantly plagued with unstable political regimes, lingering economic crises, and looming climate change that are causing a disruption in food security and rising food prices. These complex economic, political, and environmental issues result in civilian uprisings, toppling regimes, and greater regional instability. In particular, the Arab Spring in 2011 demonstrates how civilian grievances and repressive authoritarian regimes in Tunisia, Egypt, Syria, and Yemen were rooted in food security issues. This poster will argue that unstable food security and rising food prices are directly linked to civilian uprisings in repressive regimes. Using comparative politics and qualitative data to explain factors that encourage unrest and civilian grievance led uprisings, I will relate how food insecurity and rising food prices in the MENA region led to the Arab Spring.

#### 289 • Ireland: The Not-So-Emerald Isle ZACHARY MCGARVEY

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

When thinking about nations with environmental issues, we often think of large, overpopulated countries like China or India. Seldom do we consider that smaller countries can have just as

serious of an environmental impact as the larger countries we typically think of. Countries such as Ireland often fly under the radar because of the relatively low population and pollution in relation to bigger countries, but the Irelands of the world are causing as much harm to their people as the Chinas and Indias are. With the country dealing with serious issues like deforestation, acid rain, and basic dumping issues, the Irish are facing environmental problems that are shocking to see in any part of the world, much less a first world European nation. While it's important to focus on large areas of pollution, it's equally as important to ensure that the citizens, as well as natural habitats of animals of all countries, aren't suffering from smaller scale pollution. If we can solve environmental problems on a smaller scale, we inevitably will be able to solve problems on a larger scale as well.

## PSYCHOLOGY

#### 200 • African College Student's Concepts of Sibling Relationships JESSICA MENSAH, AMELIA SCOFIELD, ASSIA BUKURU, BRITTANY BEARSS

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY NICHOLAS PALUMBO, PSYCHOLOGY

This research project qualitatively examines African college students' concepts of sibling relationships. Specifically, the purpose of this research is to better understand the nature of their sibling relationships, their early memories, to analyze and better understand early relationship quality, and to examine and contextualize the nature and relevance of their sibling relationships in emerging adulthood. Data collection and analysis has been done on participants, consisting of African college students at SUNY Geneseo, in focus groups and individual interviews to help us phenomenologically investigate the phenomena of interest. The analysis provided on this poster will, however, only consist of data and analysis from the focus groups. Preliminary thematic findings will be carefully explicated and future work on this research project will be discussed.

## 201 • Adolescents' Assertive and Affiliative Language Use with Siblings and Friends in a Cooking Task

#### CAITLYN FISHER, ELIZABETH FURST, JULIA CAMERON, MOLLY O'BRIEN

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY As part of a longitudinal study, we examined 17year-olds' use of assertive and affiliative language with siblings and friends during a cooking task. Variables such as the relationship of the partner to the target child and sibling gender significantly affected the target children's use of assertive and affiliative language. *Selected for presentation at Association for Psychological Science, Boston, MA*.

## 213 • Tattoo Prejudice: Examining Empathy as a Bias Reduction Strategy S

KAYLIN STONE, BHUMI PATEL FACULTY SPONSOR: COLIN ZESTCOTT, PSYCHOLOGY Recent surveys suggest that the number of individuals with at least one tattoo in the United States is rising. It is estimated that 45 million people in the United States have at least one tattoo (Statistic Brain, 2016). However, despite the increase of tattoos in popular culture, studies show that perceivers still harbor negative conscious and explicit attitudes, as well as more negative unconscious and implicit attitudes, toward tattooed individuals (e.g., Zestcott, Bean, & Stone, 2016; Zestcott et al., 2017). Despite the growing literature documenting negative attitudes toward tattooed individuals, little is known about prejudice reduction strategies that can positively impact perceptions of tattoos. The current research highlights one strategy: evoking empathy (e.g., Pettigrew & Tropp, 2008), as a potential prejudice reduction strategy. Indeed, while perceivers may hold negative attitudes toward tattoos, learning more background information about why someone got a tattoo, such as a way to pay homage to a loved one, may increase empathy toward tattooed individuals and effectively reduce prejudice toward tattoos. The current research outlines the possible effectiveness and limitations of using empathy as a prejudice reduction strategy to decrease bias toward tattooed individuals.

## 214 • Examining Healthcare Providers Implicit Biases Toward Native American Patients S FRANCESCO DIRIENZO

FACULTY SPONSOR: COLIN ZESTCOTT, PSYCHOLOGY

Recent research shows that one possible cause of healthcare disparities for stigmatized patient groups is the implicit biases held by healthcare providers. While research has examined the causes and consequences of healthcare provider's implicit bias toward racial/ethnic patient groups such as African Americans and Hispanics, understanding the manifestation of implicit bias toward Native American patients is noticeably absent in the literature. Although some recent research finds strong demonstrations of healthcare provider's negative implicit attitudes toward Native Americans (e.g., Sabine et al., 2015), the current research expands on this understanding to look at not only implicit prejudicial attitudes, but potential instances of implicit stereotyping as well. Using a sample of healthcare providers in the Southwest, results suggest that many providers hold negative implicit attitudes and stereotypes toward Native American patients. The results also outline possible avenues for implicit bias reduction strategies.

## 215 • Observed and Perceived Conflict and Prosocial Behavior in Latino and Anglo American Children's Sibling Relationships ARLENIS SANTANA, VANESSA CEPEDA, ISABELLE ORTIZ, JENNIFER LIRIANO

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

Research conducted on Latino children's family relationships remains surprisingly incomplete, although the Latino population is the fastest growing minority group in the United States. Previous research has found that Latino parents encourage children to identify with prescribed family and community roles, while repressing individual needs, goals, and self-determination. The prescribed roles includes the concept of sibling relationships that include greater responsibility for brothers and sisters - particularly younger brothers and sisters - than commonly found in Anglo American families. Although the cultural values has implications for sibling relationship, research on Latino sibling interactions is limited. Results showed similar ratings between Latino and Anglo mothers in perceived asymmetry, intimacy, harmony, and conflict in sibling dyads. However, results show an ethnicity effect in both observed conflict and prosocial behavior between Latino and Anglo children, as well as a gender effect is observed prosocial behavior. These findings suggest Latino children behave more prosocially than Anglo Children. The ethnic differences found in prosocial and conflict behavior highlights reflect the priority placed on family well-being and on caring for siblings in Latino culture, promoting prosocial behavior and showing less conflict between sibling interactions. Selected for presentation at Society for Research in Child Development(SRCD), Austin, Texas.

#### 228 • Observed Conflicts and Mother's Perceptions of 17-yearolds' Sibling Relationships MARIA REMILLARD, MEAGAN SULLIVAN, KAYLEIGH SCHNEEBERGER, NICOLE SPENCER, RACHAEL THORP

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY As part of a longitudinal study of sibling relationships, we examined 17-year-old's conflicts with siblings during preparation of a pizza. While adolescents were videotaped, mothers completed a questionnaire rating sibling relationships on conflict, relational aggression, prosocial behavior and intimacy. Characteristics of observed interactions were compared with maternal questionnaire responses pertaining to the predicted behaviors of the adolescents. We hypothesized that the mother's predictions of the adolescent behavior would be moderately accurate. Specifically for sons, we hypothesized that the mothers would be highly accurate in predicting behavior in the context of relational aggression and conflict. For daughters, we hypothesized that the mothers would be highly accurate in predicting behavior in the context of prosocial behaviors and intimacy. Our results suggest that the mother's perceptions of adolescent's sibling behavior had an overall weak to moderate accuracy. In sons, mothers had a strong positive correlation in predicting the behaviors of conflict and relational aggression. For daughters, mothers had a strong negative correlation in predicting the behavior of daughters in prosocial behaviors and a weak negative correlation for predicting intimacy behavior.

## 229 • Quality of Social Engagement Between 4-year-old Siblings and Friends

## MELODY CHOI, BIANCA BIOANO, GRACE SEMENTILLI, LEAH COSTANZO

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY This study examined social engagement and quality of engagement in 4-year-olds' interactions with siblings and friends. Research has previously observed length of time spent engaged, semiengaged, or un-engaged. The present study examines the quality of positive/negative/neutral social engagement. Our results indicate that both partner and gender play a role in quality of social engagement. *Selected for presentation at Association For Psychological Science, Chicago, IL.* 

## 230 • The Effect of Task on 7-Year-Olds' Prosocial Behavior toward Siblings

#### ERICA LIEBERMAN

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY As part of a longitudinal study, we examined prosocial behaviors in 7-year-olds' interactions with siblings during free-play and construction tasks. Overall, prosocial behavior rates were higher during construction tasks than during free-play. Partner, age composition, and gender all made a difference in the social symmetry of prosocial behaviors. *Selected for presentation at Association for Psychological Science, Boston, MA.* 

#### 231 • Sexual Communal Strength, Partner Coercion, and Dating Women's Sexual Functioning JILLIAN LAROSE, ELIZABETH MCCABE

FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY Past research on sexual communal strength (SCS) suggests that women and their partners benefit when women are strongly motivated to meet their partner's sexual needs. Yet it is unclear whether SCS benefits sexual functioning when women are pressured by partners to meet their partner sexual needs. The current study investigated the simultaneous effects of both SCS and male partner sexual coercion on sexual functioning. Undergraduate women in dating relationships (N = 174) reported on their SCS, partner sexual coercion, sexual desire, and refusal assertiveness. SCS was positively related to sexual desire independent of partner coercion. In contrast, partner coercion moderated the effect of SCS on refusal assertiveness; the least assertive women reported high levels of SCS and had coercive partners. These results suggest that, at least for some women, Internal motives for sexual sacrifice reflect an internalization of external pressure for sacrifice.

## **POSTER SESSION 2 • 5:15 – 6:45 PM** COLLEGE UNION BALLROOM DIAGRAM ON BACK COVER

#### BIOLOGY

## 350 • Three-dimensional Scanning and Printing of a Sea Turtle Skull TYLER KUSCHEL

FACULTY SPONSOR: JACOB MCCARNTEY, BIOLOGY Sea turtle skulls, such as the Chelonia mydas skull used in this research, are rare so it is imperative that existing specimens are preserved. New technologies permitting production of faithful three-dimensional (3D) models are an excellent means of protecting specimens for posterity. I obtained 3D scans of a sea turtle skull using a Next Engine 3D Scanner. Each scan was trimmed to remove any errors and aligned with other scans to make a final 3D model, and a physical copy of the model was produced using a 3D printer. This project provides a valuable resource for education of biology students while reducing the wear on the original skull, permitting its continued use for many years to come. Future applications of this process would be beneficial for preserving rare biological specimens reposited at SUNY Geneseo. Threedimensional models produced in this manner can be used in scientific instruction, research, scaling objects to different sizes, as well as creating pieces of art. The final model can also be disseminated to the broader community to assist in research and education. It can also permit other institutions to use this data to print their own 3D sea turtle skull.

## 351 • Reprogramming Cancer Cell Metabolism through the Combinatorial Action of PK11195

## and 5-Azacytidine

DANIEL DURAN, MATTHEW STEINSALTZ FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

Deregulated cellular energetics is a common phenotype observed across numerous cancer cell lines. One of the simplest molecular explanations for this effect is the loss of a multisubunit mitochondrial pyruvate carrier (MPC) that shuttles pyruvate into the mitochondria. In this investigation, we use a DNA methyltransferase inhibitor, 5-azacytidine, in combination with a constitutive androstane receptor (CAR) inhibitor, PK11195, to re-express the coregulated MPC subunit genes. Through reverse transcription PCR, we demonstrate that the combinatorial action of these two drugs upregulates the MPC encoding genes. Preliminary western blot analysis on whole cell lysates reveals no distinction between the levels of the 12 kDa MPC-1 subunit from treated and untreated samples. ROS analysis reveals that the MDA-MB-435 cell line becomes more oxidative following combinatorial treatment. Finally, cytotoxicity assays reveal that while PK11195 acts on its own to block glycolysis, supplementation with fatty acids rescues them from the glycolytic stress. Collectively, our work demonstrates the significance of both restoring the mitochondrial pyruvate carrier, and working around other metabolic pathways, as a means of repressing the Warburg effect. Selected for presentation at Experimental Biology Conference 2018, San Diego, CA.

## 352 • Effects of HDAC Inhibitor Vorinostat and Radiation on HTB4 and MDA-MB-435 Cancer Cells JOSEPH WING, TRISHA MAINI

FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

HDAC inhibitors have shown promise in the treatment of cancer. The HDAC inhibitor vorinostat was first introduced during treatments for lymphoma and has been shown to cause an increase in the effectiveness of radiation on multiple cancer cells. For these experiments, the effects of vorinostat and radiation on HTB4 cells and 435 cells are being investigated in order to determine the efficacy of this combined treatment. Using cell cycle analysis and MTT assays, we were able to analyze the effects of radiation and vorinostat alone compared to the combination of both. Results for the HTB4 cells treated with radiation and vorinostat showed an increase in the percent of cells in G2 and a reduction in G1 and S phase compared to either treatment alone or the control population. Results for the 435s did not show a similar trend with distribution of cells between the control and three treatments. Results for HTB4's and 435s showed that increasing concentrations of vorinostat alone and when coupled with radiation resulted in less activity compared to the radiation alone. Based on the MTT data, the HTB4 cell line appears to be more sensitive than the 435s to the effects of vorinostat. Selected for presentation at Experimental Biology Conference 2018, San Diego, CA.

## 353 • Discerning the Mechanism of HLA Upregulation by Epigenetic Modulators in Breast Cancer Cell Lines

NICHOLAS TERRIGINO, RACHEL POWERS FACULTY SPONSOR: ROBERT O'DONNELL,

BIOLOGY Our previous studies showed

two chemotherapeutics, entinostat and 5-azacytidine, work in an additive fashion to upregulate human leukocyte antigens (HLA) which are typically downregulated in cancer. This study centers on vorinostat and 5-azacytidine which allow us to study the regulation of HLA class-1 expression in the breast cancer cell lines, MDA-MB-231 and MCF-7. We are testing for the expression of mRNAs for HLAs and the antigen processing machinery (APM) responsible for placing peptides into these class I proteins and transporting them from the ER to the cell surface. The mRNA levels of APM genes TAP1, TAP2, LMP2, and LMP7 showed a significant increase upon treatment with the drug combination when compared to the control. Protein expression was studied with flow cytometry. In MCF-7 cells, the vorinostat and 5azacytidine combination caused the highest increase in HLA and beta-2 microglobulin expression when compared to each treatment alone. In the MDA-MB-231 cells, the drug combination demonstrated the highest increase in beta-2 microglobulin expression, but not the highest increase in HLA expression when compared to each treatment alone. This work may contribute to field of immunotherapy. *Selected for presentation at Experimental Biology Conference* 2018, San Diego, CA.

## 354 • Aggregation Behavior of Sympatric Cryptic Species of Stalkeyed Flies

CHRISTINA YI, KRISTEN HALL

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

T. dalmanni sp 1 and T. dalmanni sp 2 are two species of T.dalmanni that coincide in similar environments and can interbreed, producing only sterile offspring. While this form of copulation is evolutionarily unfavorable due to a post-zygotic barrier (sterility), it is unclear if pre-zygotic barriers also exist to prevent unfavorable mating. Physically the two species appear identical, so this form of reproductive isolation must be caused by other means, such as active female choice, sperm precedence or male avoidance. We developed an assay to assess female preference for conspecifics which involved exposing female T. dalmanni sp 1 and T. dalmanni sp 2 flies to "dirty" artificial "root hairs" obtained from cages containing male flies of each respective species. The number of females that aggregated onto the artificial root hairs each morning was recorded. The results provide insight into whether females are able to differentiate between two male species by scent alone, establishing a mechanism for pre-zygotic isolation between the T. dalmanni sp 1 and the T. dalmanni sp 2 flies.

## 355 • The Varying Dentition of Allosaurus: A Functional Morphology Experiment TIMOTHY CLARK

FACULTY SPONSOR: SARA BURCH, BIOLOGY Functional morphology experiments are an

important method for exploring the biomechanics of an animal; in some cases helping to reconstruct predator-prey interactions. For the purposes of this project the dentition of Allosaurus was divided into three categories based on morphology and location within the mouth: D-shaped in cross section in the rostral portion of the premaxilla, laterally compressed in the maxilla, and transition teeth which are found between the premaxilla and maxilla and are typically square in cross section with off set serrations. The purpose of this research is to assess the function of the varying types of Allosaurus teeth by determining the force necessary for a 3D-printed cast of a tooth to damage a variety of media including malleable rubber and leather. It is hypothesized that the Dshaped in cross section will require the less force to damage the malleable rubber, which would demonstrate its purpose as a puncturing or crushing tool. The amount of force to puncture leather lain over several different media will also be tested as a proxy for animal hide. It is also hypothesized that teeth that are D-shaped in cross section will require less force to puncture leather.

## 356 • Drosophila Predictive Genomics Using Regularized

#### Regression JOSEPH TADROS

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

We applied whole genome sequencing (WGS) data taken from the Drosophila Genetics Reference Panel (DGRP) towards the prediction of Drosophila aggression levels. The data are comprised of millions of single nucleotide polymorphisms (SNPs) across 205 inbred Drosophila lines as well as their performance in an aggression assay scores. As with many large-scale predictive genomics projects, the high-dimensional WGS data poses a problem with model tuning as well as computational complexity. Therefore, the purpose of this project is two-fold; first, to successfully predict Drosophila phenotypes given genomic data, and second, to identify a subset of alleles which successfully predict aggressive behavior. In order to identify a best subset of alleles, the data were split based upon allele frequencies. The splits are common, rare, and random allele subsets. To keep up with many recent predictive genomics papers, regression models with lasso regularization were made. In order to identify the best lasso penalty parameter as well as to estimate the true model error, 5-fold cross validation was used across a range of penalty values.

## 357 • Use of CRISPR- Cas 9 to Induce Mutations in *Drosophila melanogaster*

#### JULIA NICOSIA, ADAM VISCIA

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

De novo genes are genes that have only recently begun coding for proteins. They arose from previously non-coding DNA. The Drosophila de novo genes we are studying are expressed mainly in the male testes, and previous work based on RNA interference showed these genes may be essential to male fertility and viability. However, we do not know whether these genes function as proteins, like most genes, or as functional RNAs. We are using CRISPR-Cas9, a gene modification tool, to create null mutations in Drosophila melanogaster's de novo genes to answer this question. CRISPR- Cas9 works by inducing a frame shift mutation in a gene, but it can also be used to delete a large section of the gene. With a frameshift, the gene will still be coded into an RNA strand, but the protein translated will be nonfunctional: while the deletion will affect the function of the RNA and protein. By comparing phenotypic outcomes of the frames-shift and the deletion we can answer the question about how de novo genes preform their functions. We have created CRISPR-Cas9 targeting constructs for multiple de novo genes and have collected data on the survival rate of injected embryos. Selected for presentation at SUNY Undergraduate Research Conference, Rochester, NY.

## 358 • Impacts of Meiotic Drive on the Expression and Abundance of Transposable Elements

#### MELANIE KIRK, CHLOE LADIAS

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

This project aims to characterize the abundance and expression of transposable elements in the stalk-eyed fly genome, with particular focus on addressing whether the expression of meiotic drive in males leads to transposable element "release" via disruption of piRNA pathways. This project analyzes genomic sequencing data from standard and meiotic drive T. dalmanni males in order to determine if the abundance of major TE families on the meiotic drive X chromosome is different than the standard X chromosome, due to accumulation over evolutionary time. In addition, this project analyzes RNA sequencing (RNAseq) data from standard and meiotic drive males to determine if the expression of shared TE copies is higher in meiotic drive males. We are using PoPoolationTE2 to uncover the insertion frequencies and positions of TEs as well as a comparison of TE abundance between population samples; and transposome is used to estimate TE abundance and diversity. In addition, we will be performing statistical analyses to determine if the differences observed between samples are significant.

## 359 • Is Something Shady Going On?: Animal Vocalization During the Great American Eclipse COURTNEY KING

FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY Audio recordings were taken on the days before, during, and after the August 21, 2017 solar eclipse, also known as the "Great American Eclipse," to gain information about wildlife vocalization during eclipses. Recorders were placed at three locations in Western New York, in a region that received 0.7 to 0.8 of the eclipse's total magnitude. On August 22, the day following the eclipse, a storm front moved into this area. In our analysis, we are comparing the temperature, solar intensity, and levels of biophony on the day of the eclipse to surrounding dates, including the day of this storm. We predict that solar intensity and temperature during the eclipse will be similar to the conditions at the time of the storm's approach, and will result in similar levels of biophony. Levels of biophony are calculated using the Bioacoustic Index developed by Boelman et al., and we are additionally identifying the taxa present in our audio recordings. These findings add to the presently small body of knowledge regarding animal responses to solar eclipses, particularly in areas outside the path of totality. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

## 360 • Associations between Forest Type, Diversity and Soundscape Parameters in Letchworth State Park Ø

#### JENNIFER ROWAN

FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY The field of soundscape ecology hypothesizes that different habitats will have unique community acoustic qualities composed of all the sounds that are of biological, geological or anthropological origin. If this is true, the biophony of different habitats should reflect their biodiversity. The purpose of our study is to investigate soundscapes in three different habitat locations in Letchworth State Park, each with distinct vegetation communities. We hypothesize that the most vegetatively diverse stand will have the most avian diversity and the highest overall presence of biophony, and that biophony will reflect seasonal changes in the habitats as well. Within each site, transects were used to determine plant species diversity and composition, canopy cover, and ground cover. Site 3 was the most diverse according to a rank abundance curve; it also had lower diameter at breast height, and point to plant measurements than the other two sites. Fortyeight hour recordings were done in each habitat during the summer and fall of 2017. We are using the recordings to assess the biodiversity of vocalizing organisms in each habitat and to test the hypothesis that soundscape indices, like the Acoustic Complexity Index and the Bioacoustic Index, accurately reflect the biodiversity of these habitats. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

## 361 • Can You Hear Me Now? Changes to Winter Bird Vocalizations in Response to Anthropogenic Noise LEEANN BRUETSCH. KAYLA SCHUM

#### FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY Birds vocalize for many reasons, including communication of threats and about food source locations. These vocalizations are a reliable source of information birds depend on in the harsh winter months. We focused on winter vocalizations. which are dominated by simple calls, because most researchers focus on complex songs during the breeding season. We predict effects of anthropogenic noise on call vocalizations will result in changes similar to those seen in bird song. This investigation focused on Black-capped Chickadees and American Goldfinches. We used seven sites throughout the Genesee Valley on private with different exposures properties anthropogenic noise. We set up a bird feeder for a week before recordings at each site. Audio recordings were done at hour-long intervals for each site, between 6 am and 10 am and between 12 pm -5 pm. During recordings observers noted bird behavior and interactions at the feeders. We analyzed each recording using Cornell Ornithology Lab's Raven Pro software to measure song features that are predicted to change with anthropogenic noise. Preliminary results suggest both species have altered the highest frequency in their call. We will report on differences between species, sites, and the relationship of other vocalization characteristics to anthropogenic noise. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

## 362 • Belizeans Natural Medicine Usage and Opinions of Efficacy COURTNEY KING, CHLOE LADIAS

FACULTY SPONSOR: REGINA CLINTON, BIOLOGY

#### Posters 2 • 5:15 – 6:45 PM

Belize is a small country in central America with a population of just above 300,000. The country is disproportionately urbanized, with some areas having more modern amenities and access to medicine and transportation than others. In Belize. usage of natural medicine and other holistic cures has been embedded both culturally and historically. For centuries, the Mayans utilized many natural remedies to treat a variety of ailments. Today, some of these holistic remedies are still employed in lieu of Western medicines. The current study sought to investigate local opinions of both natural and modern medicines. If industrialization or exposure to modern medicine has a role in personal opinions of natural medicine, then personal opinions should differ between Belizeans in different areas.

## 363 • The Effects of PK11195 on MDA-MB-435 Growth and Survivability

ADAM HANSEN FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

The Warburg effect, the use of aerobic glycolysis in the presence of oxygen, is a hallmark of some cancers. This process is catalyzed by hexokinase II binding to the outer mitochondrial membrane (OMM). Along the OMM is the translocator protein (TSPO) 18 kDa. This protein overexpression has been observed in a large variety of human cancers, especially breast cancers. PK 11195, an isoquinoline analogue, is one of the ligands of highest TSPO binding affinity. PK11195 itself has no cytotoxic effect, but it enhances apoptosis induction by agents such as chemotherapeutic agents. MDA-MB-435 cells treated with PK11195 displayed an increase in cell survivability at low doses through MTT analysis and an increase in colony formation at similar dosages. In addition, utilizing flow cytometry, we are not able to demonstrate that PK11195 has a significant impact on the cell cycle. Future experiments are planned to determine the relationship of PK11195 and other drug therapies such as 5-azacytidine, a DNA methyltransferase inhibitor, on the growth of 435 cells.

#### 364 • Geometric Morphometric of Cat Forelimb Elements SOPHIA THOMPSON

FACULTY SPONSOR: SARA BURCH, BIOLOGY Cats use their forelimbs as their primary mechanism when it comes to killing prey. Previous studies have shown that the prey size preference of cats can be distinguished based on the shape of the bones in the forelimb. We investigated this relationship using geometric morphometric to landmark the same points on the forelimb bones of 31 felid species. A principle component analysis was performed after Procrustes alignment and each species was classified by prey size preference. Results suggested large and small prey specialists were well separated along the first principle components axis, with mixed prey specialists scattered throughout the graph suggesting they do not have a specific forelimb structure. Cats that hunt large prey had more robust forelimbs with thicker distal ends of the humerus. This is important for resisting the force of large, struggling prey. Cats that hunt small prey had long and slender forelimbs to aid in quick capture of the animal. These results show that small and large prey specialists can be distinguished by the shape of their forelimb bones, which may be useful when attempting to determine the prey size preference of fossil cats.

## 365 • An Analysis of High Performing Students Within a Cooperative Learning and Testing Community COOPER BREED

FACULTY SPONSOR: SUANN YANG, BIOLOGY

Previous research has shown that students will perform significantly higher when they engage in cooperative learning. I asked which cooperative learning behaviors relate to student performance when working individually and working within a group. Further, I asked if high performing students benefit from a class where two-stage cooperative pyramid testing is practiced. In two-stage cooperative pyramid testing, students take an exam individually and then again with their group. A positive difference between the score of the group exam and average of the individual's exams demonstrates effective cooperative testing, whereas a negative difference does not. I compared the score of the top performer in each group with their respective group's work for students in past semesters of BIOL 203. I compared individual final exams with group final exams by subtracting the individual's score on each question from the group's score, and then obtaining frequency of positive, negative, or zero differences. The frequency of each category (positive, negative, or no difference) will help us to predict and further analyze the effects of cooperative testing. A semester long study is being conducted on the spring semester class of 2018 to investigate such factors further.

#### 366 • Post Dispersal Seed Predation in the Roemer Arboretum EMELYN BELL, LAUREN ELLIS

FACULTY SPONSOR: SUANN YANG, BIOLOGY In forests of the northeastern US, Lonicera maackii (Amur Honeysuckle) is an invasive species that forms dense thickets in the understory. Besides competing with native plants for space, L. maackii exhibits extended leaf phenology which allows leaves to be retained for a longer period of time and outcompete native understory plants for light and carbon fixation. It also may provide cover for seed consumers that would be vulnerable under absence of canopy cover. We asked how the extended leaf phenology of L. maackii influences its own seed predation as well as that of two native species, Vitis labrusca (Wild Grape) and Parthenocissus quinquefolia (Virginia Creeper). In 2016, the experiment was performed in the late fall after the abscission of the native species' leaves but L. maackii leaves remained. In 2017, the experiment occurred as the canopy cover of all species disappeared. A survival analysis of the native and invasive seeds under various canopy covers found that the L. maackii's extended leaf phenology reduces rather than increases seed predation and may intensify seed predation of cooccurring native plants, especially those that are patchily distributed.

# 367 • Citizen Choice and Tree Diversity *S*

#### HANNAH CHASE, KAILA MCKEIRNAN FACULTY SPONSOR: SUANN YANG. BIOLOGY

Trees provide many services to the surrounding area; some of these include bearing fruit and providing a habitat for native species. The trees that a person plants on their lot can have a significant effect on the surrounding ecosystems, and we predict that most people are unaware of this. We hope not only to educate people on the impact of these choices, but also to decipher the sociological reason for why people choose the trees they do. We have created a survey which will be taken by a sample of the Geneseo population to gauge how people choose what trees they plant. We are using cluster sampling to select a wide variety of property types including rented and owned. Because of the high proportion of rented houses in the Village of Geneseo, we will also ask participants to answer questions hypothetically if they are unable to control the trees on their property. We predict that cost and aesthetics, above whether or not a tree is native or nonnative. will be the main factors that impact a person's decision. We also predict that a higher education level may shift a person's preference towards planting native trees vs. non native.

# 368 • Pre-Dispersal Seed Predation in the Roemer Arboretum

RACHEAL DEVINE, TULPEN HANSEN-SCHWOEBEL FACULTY SPONSOR: SUANN YANG. BIOLOGY

Many invasive plant species have a detrimental impact on native species through their superior ability to compete for resources. Pre-dispersal seed predation by insects can have strong effects on plant population dynamics. Before seeds are dispersed the seeds inside are still at risk of predation. Adult insects lay eggs inside individual fruits, and when the eggs hatch, the seeds inside serve as food for the developing larvae. This larval activity renders seeds incapable of germination, which may translate to reduced population growth. During the growing season of 2017, in the Roemer Arboretum, we found that the duration of fruiting phenology has a stronger correlation to the presence of larvae for native plant species ( $R^2$  = 0.695) than for invasive plant species ( $R^2 = 0.342$ ). Fruit crop sizes are larger for invasive species, and this larger volume of fruit production suggests that predator satiation could generate the lack of correlation in the invasive species. Together, a longer period of fruiting and relatively low predispersal seed predation may contribute to the advantages that invasive plant species have over native species. Our presentation will also examine predation rates during periods of overlap in fruit production between native and invasive species. Selected for presentation at Northeast Natural History Conference, Burlington, VT.

# **369 • Factors That Affect Student Sentiment**

#### RENEE WEINSTEIN

FACULTY SPONSOR: SUANN YANG, BIOLOGY What factors affect students' sentiments towards a class? I began this study in the spring of 2017 in order to determine how students felt towards an application-based teaching style in an introductory biology course. My analysis indicated that students' positive sentiments towards biology increased throughout the four year time period the surveys were conducted. I am now investigating what factors may explain the sentiments that were expressed. Thus far, I have analyzed whether students' numerical scores have matched their written scores. My results so far have shown that students who provided the numerical scores 2 through 5 wrote more positive than negative written responses. I have also looked at the possible influence of grades upon student sentiments. Using R, I have grouped student responses by professors and created four word ngrams based on these responses. I assigned sentiments to each n-gram and calculated the percentage of positive to negative sentiments. I then compared these percentages to the mean grades of students for each professor. My preliminary results do not seem to indicate a correlation between students' grades and their sentiments towards the class. I now hope to analyze other factors that could have affected students' sentiments.

## 370 • Trait Variation in Invasive Species

#### RHEANNA MEIER

FACULTY SPONSOR: SUANN YANG, BIOLOGY Invasive species are characterized by their ability to arrive, survive, and thrive in a completely new environment. Unfortunately, invasive species are a major threat to native plants, and an active area of research is determining why these species are so successful. In my study, I examined whether invasive species differ physically along a latitudinal gradient in the eastern United States. The two species focused on were Amur honeysuckle (Lonicera maackii) and Morrow's honeysuckle (Lonicera morrowii). Measurements of leaf size and shape were taken from digitized specimens found in herbarium collections. Wide ranges of specimens were sampled to represent both the geographic range of invasion as well as invasion history. Through the measurement of these samples, I will be able to quantify trait variation and infer the role of evolution in the ability of invasive species to perform in new locations.

### **371** • The Effect of Pollination Treatment on Thistle Dispersal SIMRAN SINGH

FACULTY SPONSOR: SUANN YANG, BIOLOGY

Invasive species are a major threat to biodiversity, which makes understanding how they spread across the landscape important. In this study we focused on the invasive thistle Carduus nutans, and asked how pollination influences its dispersal. Initially, we tested the effect of treatment on terminal velocity - the highest velocity that a seed can achieve in still air – of its wind-dispersed seeds. We found that pollination treatment has a significant effect on terminal velocity (p < 0.0001). Surprisingly, seed mass didn't contribute to this difference in terminal velocity (p = 0.1616). Other factors, such as the size of the plume of these seeds, may instead contribute to differences in terminal velocity. We predict that self-pollinated seeds would travel farther because of slower terminal velocities, and we would not expect these seeds to have any competitive disadvantage in establishment with respect to outcrossed seeds because seed masses were similar across treatments. Furthermore, results of a dispersal model will be included to estimate dispersal rates for different pollination treatments for *C. nutans*. Our findings suggest that some conditions of the invasion process, such as small initial population sizes, can disproportionately promote an invasion. *Selected for presentation at Northeast Natural History Conference., Burlington, VT.* 

## 372 • Schistosomiasis Seroprevalence and Ecological Map Overlay on the Island of Puerto Rico

#### NICHOLAS WHITTEL

FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

Schistosomiasis is a neglected tropical disease caused by trematode worms of the Schistosoma genus. Second only to malaria in prevalence, schistosomiasis was estimated to affect over 258 million individuals around the world in 2014. The intermediate snail host of the Schistosoma parasite lives in freshwater body sources on aquatic plants. Schistosomiasis was introduced into Puerto Rico in the early 20th century upon the growth of sugar cane trade that dominated the local economy. Prevention campaigns were initiated by the United States in order to reduce the prevalence on the island. Using ESRI ArcGIS, data from a 1995 schistosomiasis seroprevalence assay georeferenced. Confirmed with both FAST:ELSIA and EITB serologic testing, schistosomiasis was identified in over forty of the seventy municipalities that make up the mainland of Puerto Rico. It was observed that endemic municipalities were clustered in the central and northeastern regions of the island. GIS map overlay was used, aimed at identifying possible ecologic factors that have caused the parasite to remain in the population despite governmental intervention.

#### 373 • The Effects of Educational Intervention on Disease in Ghana SARAH BRACY, HANNA SCALZETTI, HALEE FINN, ISABELLA ROBERT, ZACHARY KOENIG

FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

Schistosomiasis is a devastating neglected tropical disease widespread in West Africa. While there is a cure for those afflicted, a long-term solution has yet to be found, as the parasites that cause these pervasive infections are present in the freshwater lakes that much of the public relies on as its only water source. Considering this, one of the most effective methods of infection prevention is education. We hypothesize that in the village of Tomefa, Ghana, between the years of 2016 and 2017, educational outreach efforts have been successful in reducing the incidence and reinfection rate of schistosomiasis and other illnesses, including diarrhea, malaria, sleeping sickness, and intestinal worms. Data has been collected from Tomefa, Ghana, regarding knowledge of schistosomiasis and the other aforementioned diseases, recognition of signs and symptoms, and interventions. The results of the sociological data, in conjunction with the biological data collected, indicate that the education implemented has been successful in lowering infection rates and increasing knowledge and awareness of harmful practices that put Ghanaians at risk for further infection.

## 374 • Schistosomiasis in Ghana: A Biological Analysis of Public Health Efforts Ø

ZACHARY KOENIG, HALEE FINN, ISABELLA ROBERT, HANNA SCALZETTI, SARAH BRACY FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

Schistosomiasis is a debilitating parasitic disease endemic to West Africa caused by the parasite species Schistosoma mansoni and Schistosoma haematobium. Humans represent a critical stage in the life cycle of schistosome species and breaking this point in the life cycle through preventative measures and treatments can reduce or eliminate its spread in endemic regions. To study schistosomiasis epidemiology, we hypothesize that in the village of Tomefa, Ghana, rates of infection and severity of other biomarkers associated with schistosome infection will have decreased significantly from 2014-2017, in conjunction with identification and treatment of infected individuals. In order to test this hypothesis, statistical tests on data collected from 2014-2017 in surveys and samples from the villagers were performed across a number of demographics pursuant with World Health Organization (WHO) Provisional Guidelines on Standard International Age Classifications and National Institutes of Health (NIH) Protecting Human Subject Research Participants (PHRP) training. Results indicate that incidence of disease have significantly decreased from 2014-2017. We are also currently exploring rates of reinfection in individuals across the years as well as rates of other parasitic infections such as malaria.

# 375 • Examination of *neurod4* in Retinogenesis

#### ALEXIS SAUNDERS, HALEY SAUNDERS, WILLIAM MEYER, ELENA KLEINHENZ, NICOLE MONACHINO FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

Zebrafish exhibit eye development similar to that of humans. The neurod4 gene encodes a transcription factor that may be important in neuroretinal development. Neurod4 is also moderately conserved from zebrafish to humans. and might have an equally important function in the cell cycle. We generated a neurod4:GFP transgene and compared the reporter gene expression with endogenous neurod4 expression detected by in situ hybridization. The transgene contains 2.1 kb of the upstream genomic sequence and includes the first exon of the neurod4 gene, ending before the first intron. Gross morphology analysis showed GFP expression from the neurod4:GFP transgene closely matched in-situ data already published, and indicated that the transgene displayed similar expression from the endogenous gene. Because neurod4 is expressed in the retina during embryogenesis, we tested its requirement on cell proliferation in the retinal during the regeneration following constant intense light damage to photoreceptors by anti-PCNA immunostaining. We electroporated zebrafish retinas with neurod4-morpholino to cause loss-ofneurod4 expression and subjected them to light damage for three to four days. The results of these experiments suggest a requirement of the *neurod4* gene to exit the cell cycle during zebrafish retinal regeneration. *Selected for presentation at 2018 Northeast Society for Developmental Biology Regional Meeting, Woods Hole, MA.* 

#### 376 • Multiplex Mutagenesis Using CRISPR Cas9 MEAGAN SULLIVAN

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

This experiment will provide insight into whether or not the gef mutant is an allele for chaf1b. A vector that contains a constantly active ubiquitin promoter and the *chaf1b* gene was created, which will be a guide RNA to an endonuclease. A second vector that contains a constantly active pwil promoter and the *chaf1b* gene was created, which will be a guide RNA to an endonuclease. Once the vectors have been successfully created they will be sent off for sequencing. The vectors and cas9 (endonuclease) will then be injected into single cell zebrafish embryos. Once the genes are broken in the embryos, the DNA in the offspring will be cloned in order to see if the DNA was broken properly. The vector containing a ubiquitous promoter was successfully transformed and is currently being injected into embryos. The embryos injected with this vector and other similar vectors are being screened for green fluorescent protein glowing which indicates a transgenic fish was produced successfully.

## 377 • Novel Identification of Natural Viral Infections in Zebrafish PATRICK BUCKLEY

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY The zebrafish (Danio rerio) is a vertebrate that is increasingly being used as a model organism in biological studies due to its large clutch size, transparent embryos, and genetic similarity to humans. Studies of other model organisms have established that viral infections have the potential to alter the results of a biological study. The potential confounding effect of viral infection makes the observation and elimination of viruses in a model organism colony of significant importance. Artificially-introduced viral infections of zebrafish have demonstrated this organism's susceptibility to viral infections, but no naturallyoccurring viral infections of zebrafish have been observed to date. This investigation aims to identify the first observed natural viral infection of zebrafish in Dr. Travis Bailey's colony at SUNY Geneseo. PCR and DNA Gel Electrophoresis were used to probe for the presence of viruses that are known to infect closely-related fish species such as carp and koi. Preliminary results from several candidate zebrafish samples are shown.

#### 378 • Expression of Notch Pathway Genes in *gef* Mutants SARA FEINLAND, AMANDA YOUNG

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY A mutagenesis screening of *Danio rerio* (zebrafish) produced the *good effort* (*gef*) mutant, characterized by an underdeveloped retina by 3 dpf and lethality at 7 dpf. It is known that *gef* mutants have a deletion in the *chaf1b* gene. Chaf1b loads histones and it has been postulated that DNA exposure leads to cell death. If *chaf1b* is mutated, failure for histones to load properly could affect transcription of genes and may cause the small eye phenotype in gef mutants. Following comparative deep-RNA sequencing, DAVID bioinformatic analysis revealed common-pathway genes that are downregulated in the gef mutant. Two genes, notch1a and her15.1, were identified to be downregulated and are normally expressed in the spine, head and retina during early stages of development. These genes are part of the Notch pathway, which is essential for retinal development. Since these genes were found to be down-regulated in gef mutants, loss-of-expression might contribute to the gef mutant phenotype, and we expect them to be expressed less in the affected cells of gef mutant embryos when compared to wild-type embryos. We performed in situ hybridization to analyze whether the gene expression was altered in gef mutant embryos compared with wild-type in affected cells. Selected for presentation at Northeastern Meeting for the Society of Developmental Biology, Woods Hole, MA.

#### 379 • Multiple Gene Targeting in Zebrafish using CRISPR/Cas9 TYLER MACK. MAXWELL COSTICH. KARL KAPTEIN

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY The good effort (gef) zebrafish is characterized by underdeveloped eyes resulting from a 3 bp deletion at the splice donor site of exon 3 in the chaf1b gene. The resulting protein is severely truncated and thus unable to perform its role of loading protective histones on DNA during Synthesis-phase of the cell cycle. It has been suggested by others that cells missing Chaf1b protein suffer from accumulation of genomic damage and subsequently tp53-mediated apoptosis. In our hands, genetic knockdown of tp53 by antisense-morpholino mRNA targeting failed to spare gef mutant embryos from cell death. The recent development of a CRISPR/Cas9 mediated gene disruption method has afforded us the opportunity to study the effects of specific proteins in vivo. We aim to test the specific requirement tp53 has in the cell death phenotype analyzing transgenic zebrafish containing three gRNAs directed toward chaf1b, tp53, as well as the control pigment gene, TYR. In addition, we are using a vector construct containing five gRNAs specific for suspected pathway genes, chaf1b, tp53, puma, and caspase-3, and the control gene, TYR, to study the genetic requirement of the apoptotic pathway in gef fish.

#### CHEMISTRY

## 403 • Coverage Ratio of Amyloidogenic Peptides Over Nano-gold Colloidal Particles a Nanoscale Interfacial Interaction of Amyloid Beta Peptide 1-40 With ThT APAULA ISLAM

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

One of the main causes of many neurodegenerative diseases, such as Alzheimer's disease or Parkinson's disease, is the deformation of a specific protein, called amyloidogenic protein. While extensive studies of these proteins have been conducted, an enormous amount of effort is needed to interpret the study outcome due to the complexity of the proteins involved. The amyloid beta peptide (AB) is highly regarded as a critical monomer that reversibly conforms an insoluble fibril that leads to Alzheimer's disease. The mechanism of fibril formation is considered to be a polymerization of a nucleus unit consisting of AB oligomers under a reversible process. A folding or unfolding of monomer peptides is highly associated with the critical stage of an intermediate oligomer formation, leading to fibrillogenesis. While extensive studies have been conducted on fibril properties and character, only limited information is available on these initial oligomers. The sheet structure was confirmed on fluorinated nanoparticles, implying that selfassembly over nanoscale interfacial environment plays a key role in fibrillogenesis. While direct probe of plausible interfacial conformation may be challenging, monitoring a change in the dynamics of fluorophore attached to a folding peptide is possible, as seen in this experiment. Selected for presentation at American Chemistry Society National Conference, New Orleans, LA.

419 • Probing the Diffusion Rate and Internal Peptide Dynamics: Temperature and pH-Dependence Studies of a Fluorescein-Tagged Amyloid Beta Peptide and Thioflavin T in a Sol-Gel Matrix DAVID AKANONU, JESSICA IMAYEGAUHI FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

Hydrogels are very popular, serving as an advanced drug delivery method to carry and release drugs to specific parts of the body. Our group is attempting to design a silica sol-gel material-based drug delivery capsule similar to hydrogels with sensitivity-controlled diffusion rate parameters. Inserting a peptide into the sol-gel suppresses solvent diffusion rates because it changes conformation in order to enter into the gel cavities where solvent normally diffuses through. However, extracting the expression of the structural changes occurring is a challenging study. To probe the peptide dynamics in the gel matrix, Thioflavin T with  $A\beta_{1-40}$  or FAB (fluorescein attached to  $A\beta_{1-40}$ ) is encapsulated into a sol-gel matrix and subject to fluorescence and lifetime decay assays at different temperatures and pH levels to determine both the solvent diffusion rates and the peptide structural changes occurring. The diffusion rates and peptide dynamics were found to be sensitive to pH and temperature change, which implies that the stable conformation at each pH or temperature level reflects on the coverage of the cavity, which in turn affects the solvent diffusion rate.

420 • Nanoscale Interfacial Interaction of Amyloid Beta Peptide 1-40 with ThT APAULA ISLAM

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The amyloid beta peptide 1-40 (A $\beta_{1-40}$ ) was prepared over nano-gold colloidal surfaces together with Thioflavin T (ThT) dye as a fluorophore. The fluorescence assay of ThT displayed two different types of fluorescence bands: 1) mainly originating from free-ThT and 2) ThT significantly interacted with  $A\beta_{1-40}$ . The ThT directly interacted with  $A\beta_{1\text{-}40}$  adsorbed over the gold colloidal surface. Significant evidence supporting that  $A\beta_{1-40}$  has higher binding affinity than a gold colloidal surface was obtained. A series of studies on fluorescence decay time were collected at various pH's ranging, from pH 1 to pH 12, and with several gold colloidal sizes ranging from 10 nm to 100 nm. It was concluded that ThT attached to either 22Glu or 23Asp of the  $A\beta_{1\text{-}40}$ through an electrostatic interaction between adjacent  $A\beta_{1\text{-}40}$  monomers, as  $A\beta_{1\text{-}40}$  proceeds a folding conformational change. The spacing between adjacent  $A\beta_{1\text{-}40}$  monomers was increased for gold colloidal sizes of 50 nm and above.

#### 421 • Measuring Trans-Resveratrol in Red Wine

#### JACOB COLE, JOEY ONGKINGCO

FACULTY SPONSOR: JAMES BOIANI, CHEMISTRY Our research team has investigated different methods for measuring trans-resveratrol in wine and their effectiveness. Our focus has primarily been on using SPME fibers partnered with HPLC to develop a procedure that could be automated in the future. However, we have also investigated the use of SPE using C18 filters and vacuum filtration partnered with fluoresce spectroscopy. Our goal has been to create an optimal procedure for measuring the levels of trans-resveratrol found in red.

## 422 • An Investigation of the Biosynthesis and Accumulation of Lycopene in *Elaegnus umbellata* and Tomato BENJAMIN PASTORE

FACULTY SPONSOR: ERIC HELMS, CHEMISTRY Elaegnus umbellata, otherwise known as the Autumn olive, is a plant native to Asia. Autumn olive produces the carotenoid lycopene at incredibly high levels. Lycopene is shown to have purported health benefits including a reduced risk of chronic diseases such as cardiovascular disease and cancer. The tomato, a common food in the American diet, also produces lycopene, however at far lower levels. The goal of this research project is to determine the disparity that exists between the biosynthesis and accumulation of lycopene in both species. In order to investigate this research inquiry intensive literature searches were conducted. Investigations into the topic have revealed that the differential expression of the genes that encode the proteins, Acetyl-CoA C-IPP acetvltransferase. isomerase and prenyltransferase may account for the overserved difference of lycopene production and accumulation between each species. Other inquires have uncovered that overexpression of ciRNA's derived from PDS and PSY1 genes may also lead to a lower accumulation of lycopene in tomato. These results give insight into the biosynthetic and genetic foundations that lead to the disparity in lycopene accumulation in Elaegnus umbellata and tomato. Selected for presentation at Undergraduate Research Symposium of the Rochester Section of the American Chemical Society, Brockport, NY.

#### 423 • Investigation of Gold Nano Particle Shielding Due to Protein Surface Area Coverage ISHAN DESHMUKH FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The proteins alpha-synuclein and amyloid beta 1-40 are both characteristic in the development of Alzheimer's disease. The two proteins form aggregates called Lewy bodies and amyloid plaques respectively. Gold nanocolloidal particles were used as a substrate for the proteins to adhere to. This substrate allowed us to analyze the complexes SPR (surface plasmon resonance) bands. The bare gold particles of various sizes were analyzed using visible light spectroscopy and then were analyzed again once the proteins were adsorbed. The peaks in the shifted spectra were recorded and fit with a sigmoidal function.

## 424 • The Effect of Even or Odd Alkyl Chain Lengths on Gelation of Biphenol Derivative Organic Gelators

#### JENNIFER SCHULMAN, MELANIE TRAN, SHAWN MOORE

FACULTY SPONSOR: CRISTINA GEIGER, CHEMISTRY The synthesis of 4,4'-bis-(6-methyloxycarbonylhexyloxy) biphenyl (BBO7-Me), 4,4'-bis-(6-ethyloxycarbonylhexyloxy) biphenyl (BBO7-Et), 4,4'-bis-(8-methyloxycarbonyloctyloxy) biphenyl (BBO9-Me), 4,4'-bis-(8-ethyloxycarbonyloctyloxy) biphenyl (BBO9-Et), 4,4'-bis-(9-methyloxycarbonylnonyloxy) biphenyl (BBO10-Me), 4,4'-bis-(8-ethyloxycarbonylnonyloxy) biphenyl (BBO10-Et), 4,4'-bis-(10methyloxycarbonyldecloxy) biphenyl (BBO11-Me), 4,4'-bis-(10-ethyloxycarbonyldecloxy) and biphenyl (BBO11-Et) is reported. The gelators' abilities to form stable gels were analyzed. BBO7-Et and BBO9-Me did not form stable gels in octanol. BBO7-Me and BBO9-Et formed weak 2% (w/w) gels in octanol. BBO10-Me, BBO10-Et, BBO11-Me, and BBO11-Et formed strong 1.5% (w/w) gels in octanol. The odd/even effect of alkyl chain length on gelation was investigated through circular dichroism (CD), UV-vis absorption, and fluorescence spectroscopy. Differences in the spectra suggests that each gel exhibits different modes of aggregation. From observing the stability of the various gels, we determined that gelators with even chain lengths usually form stronger gels than gelators with odd chain lengths.

#### 425 • Optimizing Nitrogen Concentrations to Maximize Lipid Yields for Biodiesel Production ZOE MARR, COLLEEN STEWARD, FELICIA PASCALE FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

STEPHEN PADALINO, PHYSICS & ASTRONOMY Third generation biofuels, which utilize algae as a renewable feedstock, have the potential to revolutionize the energy industry. However, widespread marketability of biofuel derived from microalgae is currently hindered by the expense of production and the inconsistency of lipid yields. Our research works to make algae cultivation more feasible by examining growth conditions intended to maximize lipid content within Chlorella algae cells. Nitrogen depletion in media has been shown to contribute to lipid optimization within the cell during late log phase. After cultures were established, sodium nitrate, an essential macronutrient for Chlorella growth, was supplemented to a Bold's Basal medium at three different concentrations. One treatment received additions of the original media, while the other samples were given media containing either four times or none of the original sodium nitrate concentration. Algal growth in these samples was monitored for 35 days. After harvesting the cells, the non-polar lipids were extracted using a 2:1 chloroform-methanol ratio and lipid yields were calculated. Samples next underwent transesterification reaction upon which IR spectroscopy was used to detect the presence of fatty acid methyl esters (FAME), indicating the triglycerides' successful conversion to crude biofuel.

## 426 • Evaluating The Promise of Calcium Phosphate Cements to Transfer Proteins to Fractured Bone Site Part 1: Diffusion Studies PEMA SHERPA, SIMRAN SINGH

FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

Bone defects caused by trauma, tumors, and inherent genetic disorders require the use of grafting materials to facilitate bone regeneration at the affected site. However, the lack of bone supply and donor site morbidity associated with autografting pose significant challenges. A promising alternative approach to autograft is the use of bone cement prepared with calcium phosphate cement (CPC). An effective synthetic bone cement establishes an equilibrium between porosity, mechanical strength, and the rate of diffusion. The overall objective of this project is to design a diffusion monitoring system that can track the diffusion of proteins and other biological materials from CPCs to the site of fracture to aid in the bone repair process. The diffusion of copper sulfate from copper sulfate loaded CPCs is monitored using absorption spectroscopy over varying time intervals to assess the potential of the CPCs to deliver proteins to the fracture sites. The results are presented and discussed hereafter. Selected for presentation at American Chemical Society's 63rd annual Undergraduate Research Symposium, Brockport, NY.

## 427 • Investigating the Promise of Rice Husks as Non-human Feedstocks for Lignocellulosic Biofuels ♂

ARIANNA SORIANO, SOFIA KOSTRINSKY FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

In today's world, many are trying to counterbalance the damage to the Earth caused by years of overusing fossil fuels. Many alternatives to fossil fuels have been proposed, including biofuels, an apparently underappreciated and overlooked

source of cheap energy. While efforts have been geared toward the use of human food sources such as corn (1st generation biofuels), this has been linked to increasing the price of food which greatly and negatively impacts many developing countries. This research focuses on the production of second generation biofuels, which rely on non-human food sources, specifically rice husks, the outermost layer that is separated from the rice grains during the milling process and thrown away as a waste product. Rice husks are ideal as a biofuel feedstock, because they are cheap, if not free, and they have the power to curb greenhouse gas emissions while not taking away human food source or causing competition for new land. For this project, an ionic liquid (1-butyl-3-methylimidazolium chloride) was used for the pretreatment of the rice husks to yield glucose. Glucose quantification methods applied include refractometry, and DNS analyses. The results are presented and discussed. Selected for presentation at 63rd annual Undergraduate Research Symposium, Brockport, NY.

## 428 • Critical Bone Fracture Repairs: A Comparison of the Mechanical Properties of Calcium Phosphate Bioactive Cement and Pig Bones Part II

MARK SOTO, YEN LE, JEREMY MEDINA FACULTY SPONSOR: BARNABAS GIKONYO, CHEMISTRY

Understanding the mechanical properties of bone is critical to the design of materials that are to be used in repair of bone fractures. The mechanical properties of the materials in turn determine the behavior of the body under a load or force. This study compares the mechanical properties of calcium phosphate cement (CPC) to pig bone with the aim of determining its suitability and applicability for use on load bearing bone fracture sites. CPC has been reported to be a bioactive and biodegradable material with potential resorbability, molding capabilities, and easy manipulation. It is composed of hydroxyapatite (HA), a major component of human bone, and a base constituent of the cement. Due to the potential resorbability and also the ability to initiate bone growth, our continuing efforts are geared toward addressing challenges of adequate mechanical strength of the cement to ensure compatibility to human bone. The cement was synthesized and characterized using published methods, mechanical strength tested and the data obtained is presented and discussed herewith. Selected for presentation at 63rd annual Undergraduate Research Symposium, Rochester, NY.

## COMPUTING AND INFORMATION TECHNOLOGY

#### **311** • Computational Methods for Solving Differential Equations DILLON RAMSEY

FACULTY SPONSOR: KIRK ANNE, COMPUTING AND INFORMATION TECHNOLOGY

There are many examples of differential equations that arise in the sciences that have no known analytic solutions. However, using computational methods we can obtain very precise numerical solutions. In this study, several computational methods are explored. The accuracy, speed, and precision of the solutions are compared for solving various partial and ordinary differential equations.

# **312** • Design and Implementation of Web Services for BlueRescue JOHN ROBINSON

## FACULTY SPONSOR: KIRK ANNE, COMPUTING AND INFORMATION TECHNOLOGY

This poster will describe the design and implementation of a web service. The focus of this study was on the development of a web service for BlueRescue, a VentureWorks startup company. This study covered the software development cycle and the techniques required to produce a web service. We developed a web app for firefighters which provides them with blueprints to the burning buildings they are about to enter. Included in this web app are a test dispatch feed showing current emergencies, as well as a connection to our blueprint database, Google Maps API implementation, and a note system and database for firefighters to store notes about specific locations. An employee/admin system was also added to facilitate the addition of newly scanned blueprints with their metadata into our Amazon S3 server. Some of the topics that will be covered include: database design, API development, user interface design, web server administration, and web development.

#### 313 • Payment Card Industry (PCI) Compliance PHILLIP WOO

FACULTY SPONSOR: KIRK ANNE, COMPUTING AND INFORMATION TECHNOLOGY

Network security plays a very important role in our technologically advanced world. It is a high priority to explore the design and implementation of network security policies in order to prevent hackers from taking confidential information from a business/organization. PCI compliance is a data security standard that applies to any company or organization that accepts credit card payments. As part of the new information security requirements from the Federal and New York State governments, there is a need for reviewing the College's network security policies. It is important to understand then implement the necessary requirements of current policies to be considered PCI compliant.

## EDUCATION

### 450 • Augmentative and Alternative Communication (AAC) in the Modern Day Classroom: Logan ProxTalker Modular BROOKE PAV, GRACE DUNNIGAN, KAITLIN CONNOLLY, BAILEIGH MOQUIN, ANDREW SCHAEFFLER, OLIVIA DONROE

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

The Logan ProxTalker Modular AAC Device is one of the most advanced and adaptable recorded speech communication devices available. This portable device uses radio frequency identification technology to allow verbal picture communication for people of all ages who are non-verbal. Its simple design allows the user to place any photo, symbol, or object on a sound tag card, and then press a button to trigger the machine's internal voice output. The machine comes equipped with five of these buttons in various locations to allow the student user to choose between single word or sentence level use. In addition, the device can read up to 30,000 tag cards, which can be labelled with a wide range of symbols, photos, texts, or objects of reference to provide the student user with a large inventory of vocabulary. Users can choose between Male or Female voice output. This poster will describe how the Logan ProxTalker Modular device can be used in education settings to facilitate communication by students with disabilities.

## 457 • Use of the MegaBee Eye Gaze Communication Device to Facilitate Communication in a Classroom Setting

ALEXANDRA SEMENZA, MELISSA TRIOLO, FIONA CONROY, JIE MIN CHAI, MADDISON MOORE, MIKAYLA TROTTER

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

The MegaBee Eye Gaze Communication Device is a form of AAC consisting of a tablet that uses eye movement to facilitate communication. Offered in many different languages, this device is helpful for many disabilities and linguistic backgrounds. This poster will describe how the MegaBee Eye Gaze Communication Device works, costs, and who benefits from it. It will also provide information about how this device can be implemented in a classroom setting. Examples of the MegaBee Eye Gaze Device and how it may be used will be presented.

## 458 • Text to Talk: TextSpeak Speech Generator to Facilitate Communication for Exceptional Students

## Students

ELYSE BRICKNER, MARIA RUIZ, THOMAS VANGELLOW, MARIA PAPAS, HEIDI GRANVILLE FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

Text to Talk provides a form of speech to a wide age range of individuals with disabilities. For those who have speech or language impairments, this AAC device allows the individual to communicate and express themselves inside or outside of the classroom. Wireless and portable, this keyboard and "voice box" allows students to generate speech and engage with teachers and peers through typing. Come see our poster to learn more about a ground breaking speech generator that can transform people's lives.

# 459 • Livescribe Smartpen is a Form of Augmentative and Alternative Communication (AAC)

EMILY GORDIN, THERESA CIULLO, SHERIDAN YAEGER, MARY CROMPTON, LAUREN SIEGEL FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

The Livescribe is an up-and-coming world-wide leader in the smartpen market. The Livescribe smartpen AAC device captures and shares handwritten notes and at the same time is able to convert those handwritten notes into digital format. This smartpen contains an embedded infrared camera that identifies pen strokes on the specific Livescribe paper, making it simple for a student to record notes. In addition, it can play back what was written an unlimited number of times, allowing for syncing of what was written with what is said, and vice versa. Engineered for the specific use to aid students in the classroom, this device replaces the need for computer access, leveling the playing field for students of all types.

#### 460 • What Teacher Candidates Should Know about Proloquo2go JULIA KIM, GENNY CORCORAN, BRENNA MCSORLEY, MARIN GOODSTEIN, MEGAN HENDERSON

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

This poster will present Proloquo2go, a form of an Augmentative and Alternative Communication (AAC). Prologuo2go is a symbol-supported communication tool to encourage language development and strengthen communication skills for all levels of language development. This application, that is readily available for purchase, has been shown to be a successful and viable communication tool for students with autism, cerebral palsy, Down syndrome, developmental delays, and apraxia, to name a few. Proloquo2go can help students develop and express their internal needs and emotions using speechgenerated outputs accessed by clicking symbols that represent words, phrases and complete sentences. This poster will discuss how Proloquo2go can be used in education settings to aid students who have difficulty with verbal communication.

## 462 • Tobii Dynavox Eye Gaze Device as a Means of Augmentative Alternative Communication (AAC) in an Educational Setting

OLIVIA DAVIS, BETHANY LIANO, KENNEDI WITTENRICH, PAIGE CHALFANT, EMMA LUPOLI, JENNA GERAGHTY

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

Tobii Dynavox is a form of AAC used by students who have disabilities who are non-verbal. The device allows them to speak, read, write, and interact with the people around them. The company was founded in 2001 and in 2004 the first product with eye tracking was launched. The device is attached to a tablet or computer and tracks the user's eve movements in four steps. First the eye tracker sends out near infrared light that is reflected in the eyes. These reflections are picked up by the eye tracker's camera and through filtering and calculations the eye tracker determines where the user is looking. It's especially beneficial for use in an educational setting for students to communicate questions and answers to teachers and peers. To personalize the device, there are specific programs to download that allow the device to respond more accurately to the student. The device is shown to be increasingly more effective over time as the student becomes more comfortable communicating through it. This poster will present information on the Tobii Dynavov device and its effectiveness as an AAC device in facilitating communication with students with disabilities in a school setting.

## 463 • Racial and Resource Diversity in the Rochester-Metro Area and its Implications on Education KRISTEN HOMEYER

FACULTY SPONSOR: JANE MORSE, EDUCATION

While the United States has historically had issues with racial diversity and segregation, scholarly literature suggests that segregation is more of an issue today than during the Civil Rights era, especially in the North. The Rochester-metro area was chosen as a case study because of the resource inequalities facing the city. This research project documents the changes in ethnic diversity of Rochester-metro area school districts from 2001 to 2016 and analyzes the socioeconomic trends and resource availability affecting the diversity and educational opportunities of students in Rochester-metro area districts.

## 464 • Using Digital Text Set Trailers to Engage All Students in 21st-Century Education MICHAEL MASETTA

FACULTY SPONSOR: THEA YURKEWECZ, EDUCATION

The Common Core State Standards (CCSS) have set rigorous, complex goals for students in today's classrooms to be college and career ready. Educators are required to develop meaningful and efficient ways to support all students in meeting these standards. Text sets are a collection of fiction books, nonfiction books, poems, charts and maps, and other texts focused on a single topic or line of inquiry. These texts can be used for close reading, to make cross-text connections, and to integrate content area topics into literacy. By including a range of text complexities, genres, and modalities (e.g., print, digital, audio) in a text set, teachers can meet students' individual reading needs and still design effective and engaging literacy instruction that meets the CCSS. Still, fostering students' motivation to read for instructional purposes can be challenging, and book trailers are a resource that educators have used to creatively promote literature. The purpose of this poster is to examine the research on developing and using text sets as well as using book trailers in classrooms. This exploratory project has the potential to offer teachers an effective method to support students' engagement with diverse texts, engagement with technology, and progress towards meeting CCSSaligned goals.

#### ENGLISH

308 • Different Cultural Experiences in Greece, the Netherlands, Hong Kong, Canada as International

Students SERAPHINA LING, IKKI TANAKA, WENXIU ZHONG, FUMITSUGU OGURA

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

This poster is a reflection of the experiences of being immersed in various cultures. Four international students – Cathy Zhong, Ikki Tanaka, Seraphina Ling, and Fumi Ogura – share their experiences abroad in Greece, the Netherlands, Hong Kong, and Toronto respectively. Cathy went to study abroad in Athens, Greece during the spring of 2017. Ikki Tanaka studied abroad in Groningen in the Netherlands during the fall of 2017. Seraphina Ling shares her experience working abroad in Hong Kong during the winter of 2017. Fumi Ogura shares his experience at the Model United Nation Conference in Toronto, Canada during the spring of 2018. The topics will include sightseeing, local food, and work-study experiences. It is hoped that the viewers will be able to gain insight into various cultures.

#### 309 • The Education System in Japan and the United States MARIN AKINO, YUME IRIYAMA, NOZOMI IKEGAMI

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

We are international students from Japan. Despite the fact that Japan has over 770 universities, some people prefer to go to US universities (studying in Japan, 2018). We want to share the system of Japanese universities with the audience and show how it is different from the system of American universities. The main point is about two side of Japanese universities: academic and nonacademic. In the academic side, we describe the atmosphere in classes, student participation, and the exam and grading system. In the non-academic side, we will describe extracurriculars such as clubs, internships, and part-time jobs. We used resources from online and from our personal experiences in the Japanese university.

#### 310 • Language Disorder Identification within the ESL/Bilingual Context ALEXANDRA LOVRIC

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

For those learning a second language, making mistakes areinevitable. Sometimes, these mistakes indicate a much deeper problem. It is the job of a speech-language pathologist to differentiate between the errors expected of a second language learner and those that reflect a communication disorder. Traditional language assessment has focused on surface-level and primarily grammatical-based criteria. However, new research supports the use of a more holistic approach to properly diagnose ESL or bilingual children with a language disorder or a specific language impairment (SLI). This poster seeks to expand upon why comprehensive assessment criteria is essential for a proper diagnosis and takes into consideration both methods of traditional and modern language assessment, and the analysis of possible clinical markers.

#### **GEOLOGICAL SCIENCES**

#### **302** • Mineralogy of Mayan Achote Black Pottery from Belize ASHLEY MONTI, REBECCA RICHARDS

FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

Five samples of Mayan Achote Black pottery were collected from four different sites in Belize. We

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identified and quantified the abundance of different phases in the potsherds. Three different study areas within each potsherd were analyzed: the rim, the wall, and the center. These locations were chosen because of color variations that were visible on both a macro- and microscopic scale. Phase abundances were done by point-counting 100 points within a 2.2x6.7 mm2 region in each study area. Phases were identified with a petrographic microscope using the 10x objective lens and a 10x ocular lens. Matrix (or material made of tiny crystals that were too small to identify individually) was the most abundant phase in all samples. Calcite was the next dominant phase. Oxidized hematite was also observed in every sample and caused slight staining surrounding the crystals. Based on our point counts, the hematite content is not clearly connected to the color of the potsherd.

## **303** • Mineralogical Analysis of Iron Slag Samples from Farmer's Delight Plantation, Sussex County,

#### Delaware

#### CASEY HOFFMAN

FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

This project aims to determine the mineral composition of iron slag from an 18th century plantation in Southern Delaware. Slag is the stony or glass-like byproduct of separating a metal - in this case, iron – from a raw ore, and the mineralogy of slag is an indicator of both the environment and the materials used in the original smelting process. Historical records indicate that smelting on this plantation was performed largely by a population of African slaves. However, it is unknown whether this population performed the smelting using traditional African bloomery techniques or using a European blast furnace. Thin sections of five slag samples from this site were created and analyzed for mineralogical composition using a petrographic microscope. The mineralogy and morphology of the samples were observed with a petrographic microscope, and these observations along with the ethnographic context largely suggest the use of a European blast furnace over a traditional African bloomery.

## 304 • Analysis of Mudrocks from the James City Formation, Lower Pleistocene at Neuse River, North Carolina

## ISAAC BILINSKI

# FACULTY SPONSOR: JEFF OVER, GEOLOGICAL SCIENCES

An analysis of microfauna and lithology of five samples taken from the James City Formation of the Lower Pleistocene was performed to determine its depositional environment. Microfauna and sand grains were analyzed using a Scanning Electron Microscope to determine the species of the microfauna and the chemical composition of the sand grains within each sample. Approximately 100 microfossils were picked from samples one, two, three and four; sample five did not yield any microfossils. Each sample was determined to be a sandy mudstone based on sand:mud composition by mass. Samples contained organic carbonate detritus as well as agglutinated sand-sized grains composed of clay and silt grains. Based on foraminifera compositions of each sample, it was determined that the James City Formation was deposited in an estuarine environment. Sediment samples indicated potential storm input as well as oxidation, causing hematite to precipitate and cement clay- and siltsized grains to form the agglutinated particles observed. The James City Formation was deposited as an estuarine environment that may have experienced frequent storm input and has undergone oxidation, causing diagenetic hematite to precipitate. The James City Formation is representative of a transgressive systems tract driven by global warming and resultant ice melting.

#### 322 • The 2003 Cedar Fire: Mapping and Burn Analysis MARLEY BLADIS

# FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

The Cedar fire was the most deadly fire in California history, killing 15 people, causing over 1.24 billion dollars worth of damage, and it burned approximately 1,133 km2 from October to November of 2003. This large-scale wildfire represents a unique opportunity to study burn severity of large-scale wildfires through spectroscopy. Analysis of the fire's burn area index, normalized burn ratio, and burn severity in ENVI shows a complex relationship between anthropogenic influence, biotic factors. topography, and burn severity. The presence of the natural highland vegetation and unnatural irrigated lands constrain wildfires to areas that are less populated. The natural highland biota of California shows a predisposition towards high severity burns and can be used as a predictor for burn areas. In the highland areas where slopes are too steep to accumulate a significant soil layer and therefore vegetation resulted in lower (or nonexistent) burn severity.

## 323 • The Effect of Isostatic Rebound on Lake Ontario Water Levels

#### CAROLIEN MOSSEL

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Around 10,000 years ago, glaciers retreated across the Great Lakes region in North America, and resulting isostatic rebound is still affecting the regional uplift and subsidence rates. Rates of uplift are higher with higher latitude; therefore the Lake Ontario basin is being tilted to the south. We hypothesize that Lake Ontario is tilting partly due to this effect and that the southern shoreline is receding, potentially posing larger flood risks. The Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data has published reports on the rising water levels and isostatic rebound, but not on the amount of water level increase due to isostatic rebound. Attempts were made to model in 2D and 3D. Vertical movement GPS data was used to create an interpolation map showing the gradient of vertical velocities over the region. A Digital Elevation Model of Lake Ontario was used to create a 2D profile of the lake at present, 100 years ago, and 100 years in the future. This approach is limited but suggests that some flooding can be attributed to isostatic rebound. We

predict that using more rigorous 3D modeling and better interpolation methods could help researchers show that isostatic rebound will raise the relative water level.

## 324 • Preliminary Paleomagnetic Analysis of the Pulpit Sill, Henry Mountains, UT

#### JEREMY MEDINA, GREGORY VOUZIANAS

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Paleomagnetic samples were collected from the Henry Mountains in Utah. The goal in our study was to determine if the Pulpit sill was emplaced by a single pulse of magma or if it is composed of several pulses of magma. To answer this question we used the variation of the Earth's magnetic field recorded by this dioritic sill. If emplacement was due to a single pulse of magma the signals would all be identical. If the signals are not the same, however, this suggests that sufficient time has elapsed between the pulses. The samples recorded consistent reproducible signals, characterized by one or two component systems. The signals appear to decay to the origin, indicating that the primary component is being measured. However, these results are tentative due to the mineralogy of the sill. The cores were not completely demagnetized during the alternating field demagnetization experiments. In order for the data to clearly test our hypothesis, the samples must be completely demagnetized. We concluded that in order to obtain significant results, more adequate instrumentation is needed. The instrument needed to finalize this project is a thermal demagnetizer that exposes the cores to high temperatures, further erasing the magnetization.

# **325** • A Gravimetric Study of Sediment Depth South of Conesus

#### Lake, New York

#### MEGAN KOPP, TIMOTHY WILLIAMS

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Conesus Lake is a Finger Lake in western New York set in a glacial valley. At its southern end, packages of sediment have accumulated with an unknown depth. This study uses relative gravity anomalies to model the depth of the sediment fill above the bedrock of this region. Gravity is a mechanism for studying sediment depths because gravitational forces caused by different materials will have localized differences based on the density and thickness of that material. Alluvium is less dense than bedrock and will therefore cause a lower gravity signal where thick packages of unconsolidated sediment are deposited. This study uses a gravimeter to measure localized gravity anomalies across a section of the valley with endpoints located on the surrounding ridges. The presenters produced a model profiling the bedrock and sediment fill with data collected. Results suggest a significant variance of sediment fill in the center of the valley compared to the top of the ridge. The thickest sediment package within the valley is approximately 90 meters and the sediment package on the ridge is approximately 45 meters. A larger data set would be beneficial for determining the limits of the valley.

## 329 • Determining the Rate of Surface Processes Using Crater Morphology in the Gusev Plains Region of Mars

#### JULIANA CONLON

FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

Craters on the Gusev Plains on Mars can reveal important information about the surface processes. The purpose of this research was to determine the rate of surface processes in Gusev Plains using crater morphology and compare those values with the InSight landing site's values. An image and digital elevation model of part of Gusev Crater were obtained from the High-Resolution Imaging Science Experiment (HiRISE) onboard the Mars Reconnaissance Orbiter. Craters of over 50 meters in diameter were mapped in ESRI's ArcMap. They were then analyzed to determine their maximum rim height and crater depth using 3D Analyst tools and Model Builder. A classification scheme was created using crater characteristics to group them by their relative age using their morphology. Crater statistics were then performed on each category to determine the age of each category. The crater depth, rim height, and age were used to determine the rates of deposition and erosion from one category to the next. The rates of deposition and erosion from the least to most degraded craters are 0.0035 m/My and 0.00129 m/My respectively. The Gusev Plains craters have slower surface processes than InSight by an order of magnitude.

#### **GEOPHYSICS**

## 307 • Preliminary Analysis of Anisotropy of Magnetic Susceptibility and Paleomagnetic Fabrics within Exhumed Portions of the Nankai Acretionary Complex, Kii Peninsula

#### MELISSA HARTWIG

FACULTY SPONSOR: SCOTT GIORGIS, GEOPHYSICS We collected samples from the Kii Peninsula. Japan, to determine if anisotropy of magnetic susceptibility (AMS) and/or paleomagnetic data could provide kinematic constraints on the evolution of the Nankai margin. Specifically, we aim to test the hypothesis that depositional environments evolve with deformation. Analyses were conducted on seven samples. AMS yields highly consistent results with the ellipsoids characterized by oblate shapes. The corrected degree of anisotropy is low and varies from 1.00-1.06. Within most samples, the variation in Pj was <0.01. Five of seven sites yield consistent orientations with respect to the AMS fabrics. The long and short axes roughly plot along steeply dipping great circles, while the intermediate axes tend to cluster shallow, NS orientation. Paleomagnetic results were less consistent. Samples were subject to alternating field demagnetization and only three of seven sites yielded internally consistent results. These sites contain single or two component systems, but the high coercivity components vary in orientation. Our preliminary results indicate the targeted units are solid candidates for AMS analysis. The lack of

consistency in the paleomagnetic analyses suggest a large volume of samples from these are needed to produce statistically significant results and/or alternate formations should be targeted. *Selected for presentation at Geological Society of America annual conference, Seattle, WA.* 

## LANGUAGES AND LITERATURES

## 404 • Los Dialectos del Español en el Estado de Florida

#### JASMINE PLUMMER, SHAY BENEDETTO, CHRISTINA REILLY

FACULTY SPONSOR: SUSANA CASTILLO-

RODRIGUEZ, LANGUAGES AND LITERATURES We are focusing on the Spanish spoken in Florida in the United States: the dialects, cultural attitudes, and how contact with English has influenced the dialects. We cannot separate the influence of the mixing of cultures in a dialect. Especially in the area of Miami, contact with English has created a unique dialect. Also, we are curious if the influence of Caribbean Spanish has extended to Florida and the surrounding states that do not have a large Spanish-speaking population.

## 405 • Cultural Identity of Spanish-Speaking Youth in the Northeast of the United States

#### RACHEL BURNS, TIFFANY ALULEMA, SHERRAY BROWN

FACULTY SPONSOR: SUSANA CASTILLO-RODRIGUEZ, LANGUAGES AND LITERATURES

Our topic is the cultural identity of Spanish speakers in the Northeast of the United States. We want to focus on how education and demographics within a school will affect the cultural identity of newly arrived immigrants. We predict that the adolescents and young children that migrated to the United States will have a more negative cultural identity and view of their Hispanic roots. If schools are not diverse and do not have sufficient ESL programs, we believe that the Spanish speakers will not have a positive cultural identity. This is largely due to their desire to fit in with the dominant American culture, and therefore, rejection of their native culture. Lastly, internal discrimination can affect cultural identity, because certain dialects are valued more than others. We predict that in the northeast, the cultural identity of Spanish speakers will be more positive in the city than in the suburbs or the rural areas. Our findings will be based on research as well as surveys and interviews conducted with the local Spanishspeaking population.

## 406 • Contacto Dialectal de Nueva York

#### JESSICA GOLDEN, ELIZABETH FURST, AMY MIRANTI

FACULTY SPONSOR: SUSANA CASTILLO-RODRIGUEZ, LANGUAGES AND LITERATURES

La ciudad de Nueva York es el centro de hispanohablantes de la costa este. Un 27.5 por ciento de las personas en la ciudad de Nueva York son hispanohablantes. El Bronx tiene lo más de hispanohablantes con un 54 por ciento de la población hispanohablante. Para nuestro proyecto, estudiamos el contacto de lenguas en la ciudad de Nueva York, específicamente entre los dominicanos, los puertorriqueños y los mexicanos.

Hay otras poblaciones en la ciudad como peruanos, cubanos y salvadoreños. En el artículo "Language and Dialect Contact in Spanish in New York: Toward the Formation of a Speech Community" de Ricardo Otheguy, Ana Zentella y David Livert, ellos hablan sobre el contacto del dialecto y el lenguaje y como la interacción crea un lenguaje único de las comunidades en la ciudad. Por ejemplo, los hispanohablantes de la segunda generación incluye el pronombre personal de tercera persona singular aunque no es común en hispanohablantes de primera generación (Shin 304). También, utilizaremos el artículo "Contact and Coherence: Dialectal Leveling and Structural Convergence in NYC Spanish" por Daniel Erker y Ricardo Otheguy. Este artículo se enfoca en el rango de los fenómenos variables en español en Nueva York.

#### 429 • The Investigation of the Use of Spanish Language Within the Geneseo Community **S** KATHERINE CONBOY, KATHERINE WEDIN, TIPHERETH HASSAN

FACULTY SPONSOR: SUSANA CASTILLO-RODRÍGUEZ. LANGUAGES AND LITERATURES Our Great Day presentation is an explorativedescriptive study of Spanish speakers in the Geneseo area. We wish to investigate the ways in which Spanish speaking individuals' use of the language has changed since they moved to the area. To investigate this theme, we plan to use previous studies that took place in rural areas that are similar Geneseo to guide and compare our research, as well as create a questionnaire to distribute to Spanish speakers and those who identify as Hispanic in Geneseo (for example, Geneseo students, professors, organizations like LSA, and workers in the community). From this investigation, we expect to find that the frequency and extent to which these individuals are speaking Spanish will have changed substantially since residing in this community, due to the limited Hispanic population here.

## 430 • Effectiveness of English Acquisition Strategies of Recently Immigrated Persons from Latin America

#### SHANNON VALLONE, ELENA KLEINHENZ, NIKAULY CASILLA, MARISSA HARRINGTON-VERB FACULTY SPONSOR: SUSANA CASTILLO-

RODRIGUEZ, LANGUAGES AND LITERATURES We are analyzing the difficulties and hardships that recently immigrated persons from Latin America face in the United States. We will be conducting interviews and statistically analyzing surveys to understand the mechanisms and the effectiveness of how they are working to overcome the language barrier and the acquisition of English. We will be interviewing/surveying individuals who visit the Geneseo Migrant Center. The Migrant Center assists migrant farm workers in a variety of aspects to facilitate immigrants' transition to America.

## 432 • Cómo la Inmigración a los Estados Unidos ha Alterado el Dialecto Mexicano

JAMI GOLDSON, ADRIENNE REDA, DANIEL DAVIS

## FACULTY SPONSOR: SUSAN CASTILLO-RODRIGUEZ, LANGUAGES AND LITERATURES

Un dialecto del español que se habla en los Estados Unidos es mexicano-americano. Es un dialecto muy distinto del suroeste del país, pero también es hablado en otras partes del país. El dialecto mexicano es el primero más hablado en los EE.UU., (63 por ciento de la población hispanohablante). Hay muchos rasgos fonéticos y rasgos morfosintácticos que son muy distintivos del dialecto mexicano, y la inmigración ha influido los dos. (Escobar y Potowski, 61-63). La inmigración de los mexicanos, o chicanos/as, a los EEUU ha aumentado con el tiempo, y la incrementación de la inmigración ha aumentado el estigma que las personas que hablan inglesa tienen contra su dialecto mexicano. Este estigma ha causado que el dialecto mexicano cambie debido a las presiones y expectativas sociales. Por ejemplo, como se explica por Mendoza-Tenton, la lateralización de /r/ es estereotipado y estigmatizado en Philadelphia y así más chicanos usan el /r/ vibrante simple ahora. En este estudio, vamos a estudiar cómo la inmigración de los mexicanos a los EE.UU ha influido el dialecto mexicano a través de la presión social y el estigma contra el idioma español.

English Translation: A Spanish dialect that is spoken in the United States is Mexican-American. It is a very distinct dialect of the southwest of the U.S., but it is also spoken in other parts of the country. The Mexican dialect is the first most spoken in the U.S. (63 percent of the Spanish-speaking population). There are many phonetic features and morphosyntactic features that are distinctive of the Mexican dialect, and immigration has influenced both of these. (Escobar and Potowski, 61-63). The immigration of Mexicans, or Chicanos, to the U.S. has increased over time, and the increase in immigration has increased the stigma that English speakers have against the dialect. This stigma has caused the Mexican dialect to change due to social pressures and expectations. For example, as explained by Mendoza-Tenton, the lateralization of /r/ is stereotyped and stigmatized in Philadelphia and thus more Chicanos use the simple /r/vibration now (1999). In this study, we will study how the immigration of Mexicans to the US has influenced the Mexican dialect through social pressure and stigma against the Spanish language.

#### MATHEMATICS

# **301** • Analyzing and Modeling Pendulum Systems Using

#### Lagrangian Mechanics

NICHOLAS MAINERI

FACULTY SPONSOR: HOMMA FARIAN, MATHEMATICS

The purpose of this study is to simulate real world systems such as, a variety of pendulum configurations, which provide a wide range of complexity. Adding simple parameters like a spring or air resistance, in reality makes a huge difference on the behavior of the pendulum. In building these models Lagrangian mechanics are used to analyze the trajectory of the pendulum, which relates to the difference between kinetic energy and potential energy of the system. MATLAB Simulink is the tool used to achieve these simulations.

#### 318 • Real World Applications of Linear Algebra HARRISON HIPOLITO

FACULTY SPONSOR: AHMAD ALMOMANI, MATHEMATICS

Mathematics has been the backbone of many scientific breakthroughs and research. Often times, it is used to estimate and or confirm any uncertainties and hypothetical assumptions that one could encounter when researching. In the real world, many obstacles arise when trying to push the boundaries of science. With the utilization of linear algebra, applications of matrices and network analysis are used to determine many chemistry, physics and engineering problems that are common to the respective field of study. In physics, often times vector field and force problems arise. Through the use of derived equations physics problems become practical and solvable which is common in the early stages of a physicist. Although uncommon, utilization of networking analysis problems on vectors and forces provide an alternative to researchers and students who often prefer other mathematical methods. For chemistry, often times balancing equations is an essential component when studying and researching chemical properties of molecules and atoms; using matrices balancing can become simpler. The properties of linear algebra that provide to real world problems that many scientist and mathematicians encounter each day are very often relative and practical, which make it unique in its application.

#### 319 • Inverse Problems with Relation to the Heat Equation DAN HAYES

FACULTY SPONSOR: ANDRZEJ KEDZIERAWSKI, MATHEMATICS

We discuss the inverse problem with relation to the heat equation, which is recovering the initial temperature from measurements of the final temperature. As the backwards direction of the heat equation is severely ill-posed, it is difficult to solve. We will solve this problem by converting into an integral equation of the first kind, and then we use the method of Tikhonov regularization. We can then demonstrate our method with the aid of numerical examples.

#### 320 • Belted Sum Decomposition of Fully Augmented Links CAMERON ZIEGLER

FACULTY SPONSOR: CAROLINE HADDAD, MATHEMATICS

Purcell and Adams have introduced notions of nerves and belted sums for fully augmented links (FALs). We prove that all nerves corresponding to FALs are made up of 3-cycles taking 1 of 3 forms. We show that nerve decomposition along one of these forms corresponds to cutting along a specific pair of thrice-punctured spheres in the nerve's FAL. Furthermore, this corresponds to a belt-sum decomposition such that the decomposition is made up of FALs. Finally, we show that decomposition can continue until reaching a finite set of prime FALs, and that this decomposition is unique for a given FAL. *Selected for presentation at Joint Mathematics Meeting 2018, San Diego, CA.* 

## 321 • Classification and Characterization of Networks JAMES CANNING

FACULTY SPONSOR: DOUG BALDWIN, MATHEMATICS

Networks are often labeled according to the underlying phenomena that they represent, such as re-tweets, protein interactions, or web page links. Our research seeks to determine if we can use machine learning techniques to gain a better understanding of the categories of networks on the Network Repository (www.networkrepository.com) and then classify the unlabeled networks into categories that make sense. It is generally believed that networks from different categories have inherently unique network characteristics. Our research provides conclusive evidence to validate this belief by presenting the results of global network clustering and classification into common categories using machine learning algorithms. The machine learning techniques of Decisions Trees, Random Forests, Linear Support Vector Classification and Gaussian naive Bayes were applied to a 14-feature "identifying vector" for each graph. During cross-validation, the best technique, Gaussian naive Bayes, achieved an accuracy of 92.8%. After training the machine learning algorithm it was applied to a collection of initially unlabeled graphs from the Network Repository. Results were then manually checked by determining original sources for these graphs. We conclude by examining the accuracy of our results and discussing how future researchers can make use of this process. Selected for presentation at Joint Mathematics Meeting and CompleNet 2018, San Diego, Ca and Boston, MA.

## MUSIC

# 451 • Music of *Star Wars*: Exploring Leitmotifs

#### MANDY FIERO

FACULTY SPONSOR: BROOKE MCCORKLE, MUSIC It is undoubtable that everyone has heard of Star Wars and seen at least one movie. The films' music is similarly ubiquitous. Throughout all the movies, John Williams used leitmotifs to add depth to the story and its score. A leitmotif is an identifying musical tag, often more of a fragment than a full line, that represents a character, idea, or object. A tool brought to prominence by opera composer Richard Wagner, leitmotifs can be found in many movies' scores. In the most recent additions to the series, The Force Awakens (2015) and The Last Jedi (2017), Williams introduced several new leitmotifs. Some of the more prominent ones include the "Rey Theme" and the "Kylo Ren Theme," which combine in an interesting way in The Last Jedi. I compare and contrast these leitmotifs as well as others in the movies, asking "In what context are they used?," "What topic/theme do they represent?," and "Do they differ in any way between the movies?" John Williams consciously engaged with previous films in the most recent iterations of Star Wars. A close comparative study will reveal this.

## 452 • Illiberal Democracy through Musical Censorship ♂

TAYLOR CHIOLA, TAYLER NGUYEN, NOAH WEISS FACULTY SPONSOR: BROOKE MCCORKLE, MUSIC We will be navigating the effect that musical restriction has on government and society. By exploring censorship throughout history within totalitarian regimes throughout the world, we will draw comparisons to the actions being taken today in the avoidance of composers such as Orff, Webern and Wagner, and the historical implications of these actions. Further examined will be the inclination of such self-censorship pushing toward "illiberal democracy," i.e. popular authoritarianism. In examining this phenomenon, we will discuss the ease at which otherwise democratic or popular movements may be hijacked by censorship, distorting the notion of a movement's true form as it progresses. The parallels between the Soviet Union and United States will be highlighted in this examination, especially in light of the recent governmental trends of the Visegrad Group of the European Union. The parallels will be examined in tiered, historically based arguments.

#### **PHYSICS & ASTRONOMY**

## **305** • Exploration of X-ray Tomography Using a CCD Detector

LAUREN FARRELL

FACULTY SPONSOR: DAVID MEISEL, PHYSICS & ASTRONOMY

**CLINT CROSS, PHYSICS & ASTRONOMY** 

Tomography is a technique to visualize the interior of a solid object. X-ray images are taken at various angles to create cross-sections of an object that can then be used to obtain information about its 3-D geometries and properties. The X-ray source and detector will be stationary and the sample (maximum size ~1 cm2) will be placed in the X-ray beam and twisted around a perpendicular axis, using a stepper motor, to take various images. The stepper motor is programmed to turn a precise distance so images can be taken at the same interval. A rectangular container made of aluminum was made to house the sample. Holes were drilled at opposite ends for the X-ray source and CCD camera. The container will prevent image interference. The diffracted X-ray picked up by the CCD will all be from the sample or the aluminum, which can be removed later. The CCD has been tested, and is able to detect X-rays. A thin sheet of aluminum covers the CCD to prevent stray visible light from the X-ray emitter being detected as well as cut down the X-ray intensity. The multiple images can then be used to reconstruct a 3D version of the sample.

## **306** • Unexpected Results from a Physics Demonstration Lesson by the Geneseo PENGUINS BLT Program

#### SAM BENZAKEIN, CLAIRE CORBEAUX, JULIA DIBERNARDO, JUSTIN D'SOUZA, MICHAEL GEILER, ETHAN SMITH, JONATHAN SPARLING FACULTY SPONSOR: KURT FLETCHER, PHYSICS & ASTRONOMY

Demonstrations are a staple in physics education. Literature on physics demonstrations indicates that student learning is improved when students are asked to record a prediction on the outcome of the demonstration before they observe it. We designed a physics demonstration based on simultaneously launched and dropped projectiles and asked high school students to predict the outcome and to describe the results. Our study yielded puzzling results in that, on average, students exceeded expectations in predicting the outcome but were deficient in describing what they observed. The results suggest that the participating students had a good grasp of the basic physics of projectile motion but little experience in describing observations using appropriate vocabulary.

#### 326 • Characterizing ICF Neutron Diagnostics on the nTOF line at SUNY Geneseo

#### LOUIS CAVES, KEVIN PALMISANO, COREY WILKINSON, HANNAH MCCLOW

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

Neutron scintillator diagnostics for ICF can be characterized using the neutron time-of-flight (nTOF) line on Geneseo's 1.7 MV tandem Pelletron Accelerator. Neutron signals can be differentiated from gamma signals by employing a coincidence method called the associated particle technique (APT). In this measurement, a 2.1 MeV beam of deuterons incident on a deuterated polyethylene target produces neutrons via the d(d,n)3He reaction. A BC-412 plastic scintillator, placed at a scattering angle of 154°, detects 1.75 MeV neutrons in coincidence with the 3.64 MeV 3He ions at an associated angle of 10°. The APT is used to identify the 1.75 MeV neutron while the nTOF line determines its energy. By gating only monoenergetic neutrons, the response of the scintillator can be determined free from background scattered neutrons and gamma rays. Selected for presentation at American Physical Society Division of Plasma Physics, Milwaukee, WI.

## 327 • Determining Light Decay Curves in a Plastic Scintillator using Cosmic Ray Muons

# SARAH MANDANAS, PRAVEEN WAKWELLA, JOHN WILSON

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

Plastic scintillators are used in HEDP and ICF research to measure neutron energies using a time of flight method. The energy resolution and sensitivity of an nToF system has a direct correlation to scintillation decay time of the plastic. To decrease the decay time, xylene scintillators are quenched with oxygen and consequentially become less efficient at producing light. As time passes, the scintillator becomes oxygen deficient, which increases light production and the decay time. Mono-energetic calibration neutrons are unavailable at most HEDP and ICF facilities to monitor these increases. As a result, it is difficult to determine if oxygen concentration has decreased within these systems. Here, a possible method of calibrating xylene detectors in situ is presented. If the detector's response to cosmic ray muons is studied, it can be used to determine the scintillation decay curve produced by a mono energetic neutron. As a result, the need for the removal of the xylene detectors is eliminated. Selected for presentation at Division of Plasma Physics, Milwaukee, WI.

## 328 • Enhancements to the Low Energy Ion Facility at SUNY Geneseo

## ZACH BARFIELD, STEVEN KOSTICK, ETHAN NAGASING

FACULTY SPONSOR: KURT FLETCHER, PHYSICS & ASTRONOMY

The Low Energy Ion Facility at Geneseo is used for detector development and characterization for inertial confinement fusion diagnostics. The system was recently upgraded to improve the ion beam quality by reducing contaminant ions. In the new configuration, ions produced by the duoplasmatron ion source are accelerated through a potential and focused into a new NEC analyzing magnet ,which bends the trajectory of the desired ions by 30°. A new einzel lens on the output of the magnet chamber focuses the beam into a scattering chamber. The analyzing magnet has been calibrated for deuteron, <sup>4</sup>He<sup>+</sup>, and <sup>4</sup>He<sup>2+</sup> ion beams at a range of energies, and no significant hysteresis has been observed. The system can accelerate deuterons to energies up to 25 keV to initiate d-d fusion. Charged particle spectra with protons, tritons, and <sup>3</sup>He ions from d-d fusion have been measured at scattering angles ranging from 55° to 135° using deuterated polymer targets. Ion implantation can be used to produce a deuterated target in a palladium substrate. In addition, a timeof-flight beamline has been designed to measure the energies of ions elastically scattered at 135°. Selected for presentation at Division of Plasma Physics Meeting, American Physical Society, Milwaukee, WI.

## POLITICAL SCIENCE & <u>INTERNATIONAL RELATIONS</u> **431** • Recidivism or Rehabilitation: The Options for Inmates in the United States Correctional System SHAWNA DIEHL

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS Recidivism is the act of reoffending or relapsing into criminal behavior for a person who has already been incarcerated. Most studies report that up to two-thirds of the inmates released will reoffend within three years of walking away from prison life. They will violate parole or probation or they will commit new crimes, being arrested and prosecuted and then placed back into the hands of the United States Department of Corrections. The issues with regard to recidivism are many and cross societal, legal and monetary boundaries. Countless policies aim to eradicate recidivism, but many involve a complete overhaul of societal values concerning justice, punishment, and second chances. Other proposals have little impact due to cost and resource issues and other constraints. Plausible approaches include but don't limit to: increasing the presence and quality of pre-release services that address factors associated with the crimes of the incarcerated, such as addiction treatment, mental-health counseling, education programs, vocational training, and increasing the presence and quality of community-based organizations that provide post-release/reentry services. Some people may view such a program as providing privileges for those considered undeserving.

#### 453 • The Effect the Role of Government has on Solving Environmental Issues ROSEMARY CAREY

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Many countries champion a limited government as a means to promote innovation in the private sector. But society cannot rely on the private sector to solve certain issues, as addressing them would be counter to the ultimate goals of companies, which are to make a profit. When something as detrimental as a natural disaster wreaks havoc on a community, it is expected that government will intervene. No one would feel secure knowing that only profit-hungry corporations were left to restore communities inflicted by a natural disaster, especially when costs of restoration are high. So why then should society leave crucial issues such as climate change to establishments outside of the government? This paper examines if socialist governments, or governments that promote public spending and intervention, solve environmental issues with more success than limited governments. It will do this by examining a case study of the socialist country of Finland and how effective it is in solving environmental problems and comparing it to the relatively limited government of the United States. Data used for this analysis will be gathered from a myriad of scholarly articles and journals, as well as other sources.

#### 454 • The Effect of Income Inequality on Student Debt Levels Across States S PERRY NESI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Student debt is a tremendous social problem in the United States and the problem is only expanding. Additionally, income inequality in the United States has also become more severe since the 1980s. Previous research has shown very strong correlations between income inequality and many social problems. As student debt has become a severe problem facing our society, my research will seek to find if states with higher levels of income inequality, or gap between the rich and poor, experience higher levels of student debt. My research will also seek to find other variables that may have a significant effect on student debt levels.

#### 455 ● The Effects of Devolution in Healthcare Policy *S* PATRICK MCKINNEY

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the United States, a large portion of healthcare legislation is passed at the federal level. However, how these policies and laws are employed is often decided by the states (known as devolution). This presentation seeks to demonstrate how devolution of healthcare policy affects citizens of different states -- focusing on the type of care citizens receive, how easy is it to qualify for government assisted healthcare, as well as a variety of other salient healthcare issues. This is then to be compared to the federal and state voting record by constituents to examine the inherent relationship between the states' federal electorate and the healthcare policies that are pursued in the state.

#### 456 • Obamaphone: Bringing Social Welfare into the 21st Century S PATRICK VULLO

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the 21st Century, being connected is increasingly important. The cell phone has evolved from the brick-sized mass of plastic it was in the 1980s to a slim, nearly weightless piece of metal and glass that fits in your pocket. It contains our lives: photographs, the numbers and information of our friends, family and business associates and even gives us directions as we drive. In short, the cell phone has drastically changed life in the United States of America, and in the world as a whole. During the Obama presidency, this did not go unnoticed. The architects behind the Federal l ifel ine program, colloquially known as "Obamaphone," viewed access to a cell phone as more of a right than a privilege. Thus, the government was able to see that thousands of free cell phones, each with free monthly service was to be given out to the needy. This poster presentation will outline Obamaphone, its pros and cons, and highlight the impact the LifeLine program has had on America.

#### 461 • Recidivism Rate and Prisoner Education ♂ LIAM TANCHICK

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In my poster I will highlight the problem of the extremely high rates of recidivism, inmates who finish their sentences and shortly after become reincarcerated, in the United States. I will show how this is harmful, not only for the prisoners (my target population) and their families, but also to taxpayers and society as a whole. I will include research on programs in action that are attempting to address this problem, particularly state (and some federal) prisoner education programs that allow prisoners the opportunity to attain education behind bars. I will analyze whether these programs are effective in lowering the recidivism rate, and why they are or are not effective.

#### 465 ● Recidivism: A Policy-centric Approach ♂ AARON COHEN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

My poster will focus on a few things. First, it will discuss why the government needs to intervene in the issue. It will look at policies used previously by the U.S. government to combat recidivism, discuss the positives and negatives of these policies, and how effective they've been. The main point of the poster, however, is a policy that I believe would fix the issue, and I will support that belief with comparisons to successful past policy, and explain why the policy is different from failed past policy.

#### 466 ● American Social Welfare Policy: Immigrant Welfare Policy KAREEM EID

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The United States has been built practically on the backs of refugees, from the very earliest of pilgrims to the present-day Syrian Civil War refugees. The government is spending loads of money on people who may one day not even become citizens.

Refugees have entered our country based on the fact that they cannot return to their country because of fear that their return would cause persecution. Every year the United States accepts between 70-80 thousand refugees. We currently have certain processes put in place, and these processes have different procedures based on the country the refugees are coming from. Recently the clock has been turned back on a progressive all inclusive refugee policy. I propose one that is based on merit and degree of severity of the situation that the refugee is coming from. On top of this, and in addition to the comprehensive screening process employed, I propose a program where the individual and their family is closely monitored and provided with a social service worker. This would create jobs and aid in assimilation of the individual. We as a nation would be less worried about refugees being a threat and their failure to assimilate.

#### 467 ● Marriage Equality and its Effect on Transgender Rights *S* ARAM PEERS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

A retrospective look at how marriage equality moved through the United States from starting as a state issue to becoming a federal issue. With marriage equality now legal, one may expect transgender issues will likely follow a similar path from state based legislation towards national legislation for equal rights. For marriage equality there seems to be a clear cut line where as soon as marriage equality appeared to becoming the status quo, the issue became federal. Transgender issues have continually blurred the line over whether it should be treated as a federal or state issue. Like most things, it was state centric at first, but now it is being discussed at the federal issue. There hasn't been a clear progression, especially in a positive way, as the federal level has continually proven to anti-transgender under the he current administration.

#### 468 • Evaluating Bathroom Policies Across America ⋬ MARIA CENTO

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This project will seek to examine why certain states are more likely to pass bathroom policies that would prevent transgender individuals from using their desired bathroom. It will look at states' ideology, religiosity as well as other factors to determine why some states would enact these restrictive policies. Furthermore, this project will also look at the outcomes of certain "bathroom bills" at the state level, and look into the idea of Bathroom Policies becoming a federal issue.

#### 469 • Reefer Madness: The Federalism of Marijuana Legislation BRIAN PATTISON

# FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the past decade American beliefs concerning marijuana have changed drastically. Its medical qualities have been researched and proven to be effective at helping a wide variety of health problems, from chronic pain to PTSD. States have proven this to be true as they have circumvented federal laws to legalize medical, and in some states recreational, marijuana. This paper examines the process by which states adopt legislation for medical or recreational marijuana from a federalism standpoint and to examine the groups that attempt to keep legislation from passing. Key points: states that have passed medical marijuana laws; states that have passed recreational marijuana laws; out-groups fighting to see that legislation does not pass (Big PHARMA, tobacco, Republicans, etc.); what states adopting new laws look to adopt when creating new legislation; Economic effect of legalization; taxes, jobs created, research funding; how legalization affects smaller communities; states that have legislation in progress; states that have not passed legalization; The effect of decriminalization on populations in states with decriminalization; The effect of federal illegality and how businesses operate against federal law.

#### 470 • Should TANF be State Controlled or Federally Regulated? ダ CARLOS CIRIACO

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Temporary Assistance for Needy Families (TANF) differs between a state such as New York that is more accepting of documented immigrants compared to a state such as Utah, which has been stricter in laws and programs. This study wants to see what the two programs react to when a state has a bigger minority population or a bigger immigrant population. The ideas and parts that will be included will be as follows: what immigrant social policy is and how it relates to state politics; the meaning behind "race politics" - if it affects state policy and if legislators pass laws because of the group threat felt by the white majority against documented Immigrants; introduction to TANF, the structure before and after the 1996 Welfare Reform. Showing the change of it being more federally controlled towards more state run; the number of immigrants in both states compared to the larger majority and the percentage of whites in these programs compared to the number of immigrants; the cost and benefits for a state to exclude immigrants from these programs, and the policies such as the Work and Responsibility Act used to exclude immigrants from this program.

## 471 • The Role of Federalism in the Gun Control Debate

#### DELANEY NOLAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Interstate and intrastate variables will be analyzed to explain the variance of gun laws and where we stand as a nation on gun control.

#### 472 • American Social Welfare Policy & DEVIN MURPHY

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The public problem I have chosen to research is the growing rate of obesity in the United States. Obesity has been prominent in America for a long time and it has been continuing to grow since the problem first started. Obesity causes more than 300,000 deaths per year alone in the United States, and this number is continuing to rise. The main population that is affected by obesity in the United States is middle-aged adults. In 2014, around one in three adults were considered to be obese. Another population that has been greatly affected is the youth. Recently, around one in six children are considered to be obese. The children of America are very unhealthy and inactive. This causes the rate of obesity to continue to increase in the country. Something must be done to stop this increase in obesity. So far, the government has done very little to help this situation.

#### 473 • Mental Health and Illness in Foster Children g HANNAH LABEDZ

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Recent studies have shown that there are approximately 437,000 children in foster care in the United States. Children are placed in foster care when their parent is determined to be unfit as a result of abuse, neglect, substance abuse, and various other reasons. It has been found that, compared to the general youth, foster children are more likely to suffer from mental illnesses such as depression, anxiety, and post-traumatic stress disorder (PTSD). Although the government is responsible for a child who is in foster care, not all states have implemented policies to help foster children who are suffering from mental illnesses get the proper medical help they may need. In order to prevent these conditions from worsening and negatively impacting a child's life, it is important for the United States government to address this issue and work to find solutions to the problem of mental illness in foster children.

# 474 • Title X: The Family Planning Program g

#### HANNAH MORLEY

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The Problem: Low-income families lacking access to health services and counseling. What is the cause of the problem? Women and these families lack the financial stability to obtain these services, which leads to pregnancy or expansion of the family. The expansion of the family puts these family in even more economic difficulty. Without family planning programs women might not receive proper reproductive health care ,which could lead to sexually-transmitted diseases, death from pregnancy or other diseases, and other medical issues if not treated properly. What are the proposed policy alternatives and what do they intend to accomplish? The policy alternatives include the enabling of states to be more free to choose where Title X funding goes, which will lead to the defunding of Planned Parenthood. This alternative action intends to abolish the action of abortion and give more freedom to conservatives and pro-life advocates. Currently, President Trump has constructed a bill that looks to defund Planned Parenthood and the Affordable Care Act.

To what extent will the proposed policies address the need? Title X is a network that depends on all of its parts to cooperate and pull together for it to function.

# 475 • Gun Control in the United States

#### IAN STEWART

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Gun control is a divisive issue in the United States. Different court rulings, such as Heller and McDonald, defined the right to bear arms under the second amendment and applied this right to the states, respectively. This has created problems for states and the federal government when it comes to regulating firearms. This poster shall look into how the federal government treats gun control compared to the states and similar issues.

# **476** • The Opioid Crisis in America JAFFRE AETHER

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS My poster will be on the opioid crisis currently happening in America. This poster will compare two states to each other and the methodology utilized by both states in solving the opioid crisis. Alongside this, the poster will attempt to explain how drug addiction is seen in America, and how this image can be changed.

## 477 • When the Garbagemen Never Come: An Exploration of the Public Health and Environmental Consequences of Waste Disposal Practices in Uganda S RACHEL DAVIS

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Economic growth and increased industrialization in Uganda have led to greater access to material items, especially plastics and other synthetic materials. Coupled with Uganda's high population growth rate (the fifth highest in the world), solid waste production has increased immensely over the past few decades. The waste management systems in place in urban centers (especially Kampala) are unable to properly dispose of waste throughout the entire city. Outside of Kampala the vast majority of communities have no access to waste management services. As a result, the most common practices for disposing of waste are illegal dumping and burning. Sufficient resources are not allocated to waste management because the current administration prioritizes other issues as more pressing. However, the environmental and public health consequences of these practices are dramatic, widespread, and disproportionately affect Uganda's most poor and vulnerable citizens. I will explore these consequences through an

analysis of quantitative and qualitative data based on several studies conducted in Uganda during the past decade.

## 478 • Drug Possession Sentencing and the Variation Among States JOSEPH VUCIC

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Inmates incarcerated for drug offenses make up around 20% of the population of all individuals in state prisons. These are typically non-violent individuals, with an addiction problem; addiction would be characterized as a disease according to most health professionals. These inmates, despite high rates of addiction are not very likely to receive treatment once they are in prison. Once released, they aren't equipped with any of the necessary tools to help them get back on their feet and avoid relapse. What states fail to do, especially states with poor drug sentencing policy is address inmates' substance abuse, mental health, education, and employment issues that directly correlate with drug abuse.

#### 479 • Sanitary Supply Policy S KATHERINE PETER

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

My project will analyze the resources provided specifically to homeless women and women of little means. Most specifically, they have a need for sanitary supplies like tampons and pads. While women make up a large percentage of the homeless population, services for homeless people is primarily geared towards the experiences of homeless men. Even when women are not necessarily homeless, they may have very low incomes and other members of a family to support. Sanitary supplies, which can cost at anywhere from 5-30 dollars per month, are often not their first priority when buying only necessities. Moreover, young girls in low income families are also in need of these supplies. Government money is not spent on tampons and pads. They cannot be purchased with food stamps. Donations are the primary way shelters get these materials, and even then, it is hard for the women to acquire and use them. In some cases, it is difficult for homeless women to even have access to a bathroom frequently enough. My research would propose a policy that would give supplies and aid to women and young girls.

#### 480 • State Voting ID Laws and the Voter Turnout Rate S MADELINE STOKLOSA

## FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Eligible voter participation in elections is essential for democracies to function fairly. Disenfranchisement is the main objection for enacting any voting laws, especially the ones that deal with voter identification. If someone does not have the form of identification a state needs to be eligible to vote, they are turned away and denied participation. This discussion is relevant considering more than half of the fifty states either request or require voter identification in various degrees as of 2018. Some states are more strict than others and specify for photo ID while other

states do not. The best way to gauge how voting ID laws affect voter participation is to measure the voter turnout rate. Essentially, the question at hand is whether voting ID laws suppress voter turnout. My hypothesis asserts that the more stringent the state law, the lower the voting turnout rate, especially among marginalized groups. Comparing the demographics of the fifty states to the voter turnout rates from the 2012 November general election will make it possible to determine if a correlation between voter ID laws and the voter turnout rate exists.

## 481 • The Inadequate Access to Healthcare for the Rural Poor Population MARISSA HIGGINS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Medicaid recipients in rural areas do not have adequate access to medical centers for the longterm care and programs they are eligible for, creating inefficiency in the program and problems for those denied of their benefits based on geographic location. The disparities in access to providers of healthcare between the urban and rural poor populations greatly affect the individuals and their communities, as the rural poor often do not have access to community health centers and mental health centers, which are prominent in cities. There is decreased access in rural areas is due to barriers such as the decreased number of such centers as well as the lack of public transportation. Such barriers to access limit the effect and efficiency of Medicaid benefits for this marginalized population of rural poor individuals and families. Proposed solutions to the lack of access to healthcare for the rural poor includes a model of telemedicine being adopted as a versatile and low cost mechanism for delivering care and creating a health network with the help of technology to better connect people in different geographic areas.

## 482 • The Supplemental Nutrition Assistance Program Addresses Child Food Insecurity in Rural Counties MAURA MULLEN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

My research paper aims to address the problem of food insecurity faced by children in rural areas. Rural counties face higher-than-average foodinsecurity rates due to socioeconomic factors. Children in these areas are more likely to struggle with school, development, and overall health. I will compare policies and programs such as the National School Lunch and Breakfast Programs, the Child Nutrition and WIC Reauthorization Act, and the Supplemental Nutrition Assistance Program in order to determine their effectiveness in terms of decreasing food insecurity.

### 483 • The Impact of State Policies on the Success of Charter Schools MAX BURMAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS I studied what makes different states have charter schools that are or are not successful. By comparing multiple different variables - including but not limited to - racial makeup of charter schools, political ideology of the states, and the number of charter schools in a state, I was able to see the potential causes for charter schools to be closed. I believe that studying charter schools, which have become so ingrained into education today, is very important. My research takes note of the racist/segregationist overtones that exist in charter schools. While not seeking to find the source of the segregationist ideologies, it is important to recognize so that it can be corrected. This research is a way to expose the idea that charter schools aren't always successful, even though that is what is preached by both sides of the political aisle. Instead what this research tries to do is take an unbiased look at what state policies impact charter school success.

## 484 • Deviation from Federal Immigration Policy Through Sanctuary Cities and States MILES CUNNING

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In response to the nationalistic rhetoric of President Trump, several states and major cities have declared themselves to be "sanctuaries" for illegal immigrants and their children. This project seeks to determine what truly motivates these actors to take such drastic action that is directly against federal policy. This project will analyze the economic, demographic, and ideological environments in each state in an attempt to determine what factors most motivate states to challenge federal policy in such a direct fashion.

#### 485 • Social Welfare Program: Early Cancer Screenings for Low-Income and Uninsured Women g MOLLY HIGGINS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

I have chosen to research a policy that will provide low-income and uninsured women the opportunity to receive early cancer screenings because it will improve their well-being. The policy will also aid women after they have been diagnosed. People's chance of survival increases directly with early detection, and that is why this policy is so important. This is a public policy problem for numerous reasons. For example, if more women are getting sick, then they will not be able to participate in the workforce and U.S. healthcare expenses will increase, both of which are negative externalities that will hurt the economy. Additionally, if they are single-mothers and do not have the money for treatment, their children will be negatively affected. The justification for government intervention with this issue is equity. It is only fair that all women are given the right to know what is happening within their own body. The target population will be all women within the ages of 20-70, because they are all at risk of cancer. To ensure utilization, this policy will also offer informational tools to educate women on how important early detection is.

## 486 • American Federalism and Marijuana

#### PATRICK CALDARELLI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

I would like to present my research on my paper, which analyzes the variance in recreational marijuana laws across states. Marijuana is unique in that there are conflicting state and federal laws regarding its prohibition; even in states where marijuana is legal there is often limited uniformity among those laws. The issues of conflicting and varying laws on marijuana is important to both recreational and medical users. These individuals are obeying state but not federal law. The object of this work is to examine the variance of recreational marijuana across states. A logistic regression was conducted to provide empirical evidence, explaining the variance of marijuana laws across the nation. Initiatives and the ideology of the state government both proved to be statistically significant with a positive relationship. States with a more liberal government or initiatives were more likely to have laws permitting recreational marijuana. Interest groups in the state and the legality of medical marijuana had no meaningful impact on laws permitting recreational marijuana. Allowing states to act as laboratories for marijuana legislation may be the ideal way to create policies that are effective and fair.

#### 487 • States Restrictions on Abortion Laws RACHEL COONS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Federalism has enabled states to vary targeted regulation of abortion providers (TRAP) laws. State-by-state divisions are important because regional divisions reflect different value orientations in different parts of the county (Bessett et al. 2015). There is a direct relationship between the liberal ideology of a state and its political support of legal abortions. A public opinion poll from the constituents of each state on the abortion issues does not exist (Medoff 1989). Inferences can still be made indirectly about the variation states have on TRAP laws and why, by looking at the abortion education, religious groups, race, and poverty in each state. Different exposure to abortion laws and values and sources of information and misinformation lead people to form different political ideologies (Bessett et al. 2015). The more TRAP laws a state imposes on abortion providers, there will be less political support for abortion and the state will be conservative.

## 488 ● Public Transportation Access for People with Disabilities in Major Cities S

#### **RACHEL MORRIS**

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The Americans with Disabilities Act, was signed into law by president George H.W. Bush in 1990. This helped people across the United States who have a disability find work, get better access to healthcare, and live a life with equal opportunities. However, there should be more of a push to make areas accessible to all people, especially with public transportation. Americans who live in large cities rely on public transportation to get around and that includes people who are disabled. In New York City, more than 75% of the subway stations do not have elevators. This prevents people, who may not have the ability to walk up or down steps, from using public transportation that their tax dollars go to support. The government must intervene to create an equal opportunity world for every citizen. Lack of elevators and accessible stations can be signs of larger problems with how the government deals with people who are disabled. Public transportation is government run, so it should be fixed by the government to accommodate all people, not just those who do not have a disability.

#### **PSYCHOLOGY**

#### 400 • Cooperation and Competition During Caribbean, Latino, and Anglo Sibling Interactions DOMINIQUE ELLIS, SABRINA CHAN, DIMITRI WING-PAUL, BRYAN SOMAR, SABRINA BRAMWELL

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY This poster will present findings on the differences between Caribbean, Latino, and Anglo children's sibling and peer interactions in terms of their cooperative and competitive behaviors during a series of tasks. Cooperation was measured in terms of how much the children harmoniously worked together towards a unified goal, while competition was measured by the levels of rivalry present within pairs. These tasks were given in the form of construction, free-play, and board games; the purpose of the board game was to elicit competition while the construction task was meant to elicit cooperation. Although the tasks had an effect on the children's competitive and cooperative behaviors, the differences in the task scores were inconsistent within each cultural group. The Anglo children's competitive behavior varied more according to task compared to Latino and Caribbean groups, Latino levels of cooperation did not significantly differ across tasks, while Caribbean and Anglo children's levels were influenced.

#### 401 • Cohort Differences in Adolescent Aggression Toward Siblings and Friends MADELINE KLOTZ, BRIANNA FOSS, OLIVIA TRUNFIO, NIKI LAM, KATHLEEN ATTEA, JACKSON TATE

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY The purpose of this study is to compare generational differences between aggression and rough-and-tumble play (RTP) in adolescents. Aggression and RTP are categorized in three domains, being physical, relational, and verbal. The study included 131 white, middle-class 17-yearolds. Adolescents were videotaped at home in separate cooking sessions with a sibling and a friend. The videotapes were transcribed and coded for all types of aggression and RTP, comparing data from the target, the sibling, and the friend. We hypothesize that newer generations will higher instances of aggression and RTP in both the sibling and friend relationships.

#### 402 • Communicative Functions of Adolescents' Use of Verbal Irony with Siblings and Friends WILSON MEI, MEAGHAN BARRY, SABRINA SALETA

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY As part of a longitudinal study, we examined communicative functions of two forms of verbal irony (sarcasm and jocularity) in adolescents' sibling and friend interactions. Both gender and interaction partner played a role in the communicative functions for which sarcasm and jocularity were used. Sarcasm involves ridicule aimed at a specific target that appears to be hurtful whereas jocularity involves light, bantering teasing. Both sarcasm and jocularity can be used for various communicative functions, including dominance, affiliation, covering embarrassment, or distancing the speaker from an utterance. The present study sought to explore the communicative functions for which adolescent boys and girls use sarcasm and iocularity in interactions with siblings and friends. Selected for presentation at Association for Psychological Science, San Francisco, CA.

## 407 • The Interaction Between Meaning and Forgetting

ADAM WEAVER, MOLLY BRADY, KYLE WALSH FACULTY SPONSOR: JASON OZUBKO, PSYCHOLOGY

Memory can be broken down into two categories, recollection and familiarity. Familiar memories tend to be influenced by semantics during encoding, storage, and retrieval, while recollected memories are more independent of meaning. Past studies (Seli & Ozubko, 2008) have shown that familiar words with meaning are forgotten at a slower rate than nonwords or pseudowords, while recollected words are unaffected by semantics. The present study investigated the effect of semantic encoding on the rate of forgetting in recollected and familiar sets of words. During the study phase, participants were shown sets of three words either semantically related or random, then asked to rate how confident they were if the set was new or old, and which type of memory (familiar, recollected, or neither) they had for the set. Some sets repeated 10-12 trials later, then a third time during the test phase. The probability of decline was determined by the likelihood that a set would be rated a lower confidence in the test phase compared to study phase rating. Results revealed that semantically related sets of words were more likely to be remembered than random words. Selected for presentation at Lake Ontario Visionary Establishment Conference, Niagara Falls, Canada.

## 408 • Motivation in Learning: How Self-Selection Influences

## Achievement

ALEXANDRA MAJKA, HELEN MERRIWETHER FACULTY SPONSOR: JASON OZUBKO,

PSYCHOLOGY

"Grit" can be defined as an individual's level of perseverance through challenges to achieve longterm goals and high grit levels were found to be correlated with academic achievement (Duckworth et al., 2007). This suggests that high-

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grit individuals may be more effective learners however, traditional school environments do not take students' interests or desires into account. Hence, one could ask whether grit would still be related to achievement if individuals were allowed to select specific class topics. To investigate this hypothesis, participants learned and were tested on several informational topics in the lab. One group of participants was given a choice and allowed to select between several options for each topic they learned, the other group was given no choice. Level of grit was determined with both a survey and computerized task. We hypothesized that individuals with high levels of grit would perform well regardless of whether they had choice in topics, whereas low-grit individuals would benefit from choosing topics. However, preliminary results show that regardless of grit, individuals were better off when forced to learn about a given topic. Interestingly, this effect emerged only for the last topic learned and most strongly for low-grit individuals.

#### 409 • Bystander Responses to Sexual or Physical Assault CLAIRE EDGINGTON, TESS RAMOS-DRIES

FACULTY SPONSOR: JENNIFER KATZ. PSYCHOLOGY Bystanders tend to intervene in clearly dangerous situations. Based on the altruism born of suffering literature, bystanders who have experienced personal victimization may show prosocial responses to situations involving partner violence. We hypothesized that women would report greater intent to intervene in response to an apparent physical assault, which would be perceived as more dangerous than a sexual assault. We also hypothesized that bystanders with histories of personal victimization would report greater intent to intervene, regardless of the type of assault, than those without personal victimization histories. Undergraduate women at a Northeastern college (N = 240) provided selfreport data on their own victimization experiences. They also were randomly assigned to respond to a vignette depicting either physical or sexual conflict. Overall, women reported greater intent to intervene in response to a physical assault than a sexual assault. However, personal victimization moderated this effect; women with personal victimization histories reported greater intent to intervene in the sexual assault condition than those without personal victimization histories. These findings provide additional evidence for altruism born of suffering and also extend past bystander research by showing that personal characteristics of bystanders may predict intervention in certain types of situations.

#### 410 • Just Joking? White College Students' Confrontation of Different Types of Racist Speech & MEAGAN CENTENO, CLAIRE GRANT

FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY CHRISTINE MERRILEES, PSYCHOLOGY

When communicated in a humorous way, racially prejudicial comments may be dismissed as "just jokes." We investigated white, non-Hispanic students' responses to different types of prejudicial speech. Participants (N = 252) were randomly assigned to read about a peer who denigrates Black students by either joking or

making a non-joking statement. Compared to those in the statement condition, participants in the joke condition reported less intent to confront the peer. Participants' own symbolic racist attitudes moderated this effect. That is, participants who endorsed stronger racist attitudes reported less intent to confront the peer, but only in the joking condition. To encourage prosocial responses to disparaging humor, educators may challenge white students' racist attitudes and promote critical thinking about the functions of humor.

## 411 • Effects of Group Status and Implicit Beliefs about Human Nature on Bystander Responses to Anti-Gay Bullying SYDNEY KLAINBERG

# FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY DILLON FEDERICI, OTHER

Students who identify as lesbian, gay, bisexual, or transgender (LGBT) are at high risk for bullying and other forms of victimization. Bystanders who witness bullying may respond actively, such as confronting the perpetrator, which should help to promote victim safety as well as a more positive campus climate. This study assessed the effects of group status and bystanders' own implicit beliefs about human nature (as malleable) as predictors of responses to anti-gay bullying. Participants (N = 199) at a small Northeastern college in the U.S. were surveyed on their beliefs about human malleability (i.e., incremental beliefs) and randomly assigned to react to a hypothetical antigay bullying scenario in which they were alone or with three friends. Results suggested that group status and bystander beliefs interacted such that higher incremental beliefs about change among lone bystanders predicted significantly greater intent to confront a perpetrator and less intent to withdraw from the perpetrator. In contrast, bystanders in groups reported similarly low intent to confront and withdraw regardless of their incremental beliefs. These findings may inform educational programs aimed at promoting active bystander behaviors on college campuses. Selected for presentation at International Family Violence and Child Victimization Research Conference, Portsmouth, NH.

## 412 • Interacting Effects of Social Altruism and Political Beliefs on Environmentally Friendly Attitudes

## ANNA WEST, JACQUELINE MILLER

FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY This paper describes an exploratory analysis of how social altruistic values and political beliefs interact to predict environmentally friendly behaviors. Participants were a group of 135 SUNY Geneseo students who partook in the study voluntarily. Data was gathered by administering a questionnaire that gauged participants' demographics, values, attitudes, and environmentally friendly behaviors. Results showed a statistically significant interaction between social altruism and political beliefs on environmental attitudes. Exploration of the interaction indicates that for liberal students, the degree to which they demonstrate social altruism has no effect on their environmental attitudes. For conservative students, however, having high levels of social altruistic values greatly increases their environmental attitudes in an environmentally-friendly direction, in comparison to having low levels of social altruistic values. These results imply that political conservatives can be persuaded to have positive intentions towards the environment, if their attention is drawn towards the consequences that environmental problems have on society at large. Further exploration of this relationship may contribute to theory on how to increase environmentally friendly behaviors.

## 413 • Materialism Mediates the Relation Between Dispositional Empathy and Environmental Intentions S

CELIA FREIDA, JACQLYNN HALSTEAD, KELLNER KRYSTA, JACQUELINE MILLER, MARY SULLIVAN, VICTORIA ALLEN, NICOLE SPENCER, JAMIE MCQUILLER, ANNA WEST

FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY Research shows that dispositional empathy is positively related to environmentally friendly behaviors. However, it is not clear what mediates this relation. The present research examined materialism as a potential mediator. Participants were college students who completed a questionnaire assessing personality characteristics (including empathy). materialism. and environmentally friendly intentions. Results indicated that materialistic values partially mediate the relation between dispositional empathy and environmentally friendly behaviors. Specifically, empathy predicts lower levels of materialism, which in turn predict greater commitment toward protecting the environment. Future research should investigate other facets of materialism in order to determine whether the construct as a whole mediates the relation between these variables, or whether only specific aspects of materialism mediate. Future research should also investigate other variables, unrelated to materialism, which might mediate the empathy/environmentalism relation. Selected for presentation at Association for Psychological Science, San Francisco, CA.

#### 414 • Empathy, Life Satisfaction, and Environmental Values in College Students JACOLYNN HALSTEAD, CELIA FREIDA

#### JACQLYNN HALSTEAD, CELIA FREIDA

FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY In the face of continuing environmental problems

it is important to investigate motivations for environmentally friendly values. Previous studies have shown that life satisfaction and emphatic concern are positively correlated with environmental values (Welsch & Kuhling, 2010; Welsch, 2013). We conducted post hoc analysis of survey data from 235 students assessing life satisfaction, environmental values and empathy, among other variables. Results indicated that life satisfaction and empathy interacted to predict environmental values. Inspection of this interaction indicated that participants low in both empathy and in life satisfaction had significantly weaker environmental values than did all other participants. These results suggest that environmental values are enhanced by either high

life satisfaction or by the ability to understand how others are feeling (empathy). Either of these factors are sufficient to prompt positive environmental values by themselves. But the post hoc nature of these analyses demand that the results be replicated before firm conclusions are drawn. Theoretical and empirical issues are discussed.

## 415 • Evidence that Social Altruism Mediates the Relation Between Egoistic Environmental Concern and Environmental Values S

NICOLE SPENCER, JAMIE MCQUILLER

FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY According to Shultz (2000), the value people place on plants and animals (biospheric concern) is based on the values people place on themselves (egoistic concern), and other people (social altruistic concern). However, Shultz did not specify how egoistic and social altruistic values work to predict biospheric values. We tested the two possible models that can be generated from Shultz's theory. The first model predicts that egoism mediates the relation between social altruistic concern and biospheric concern, and the second model suggests that social altruistic concern mediates the relation between the other two variables. Results of regression analyses supported the second model which stipulates that social altruistic concern mediates the egoism/biospheric relation. These results suggest that when people see the environment's effect on the self, they may also see the environment's effects on others, and finally, the effects on nature, plants, and animals.

## 417 • Attachment, Hookup Motives, and Situational Context as Predictors of Reactions to Hookups ERICA KANE, LESLIE TETTEH, DINETRA GOWDIE

FACULTY SPONSORS: MONICA SCHNEIDER, PSYCHOLOGY

#### JENNIFER KATZ, PSYCHOLOGY

We examined students' attachment orientations and hookup motives as predictors of their psychological and emotional reactions to their most recent hookup experience. Participants completed a survey assessing demographics, dating and sexual history, attachment orientations, hookup motives, circumstances surrounding their last hookup, and psychological reactions to their most recent hookup. Correlations revealed that one attachment orientation underlying secure and anxious attachment (proximity-seeking) predicted relationship-centered outcomes. Attachment orientations associated with anxious (jealousy, anxious-clinging) and both types of insecure styles (frustration w/partner, ambivalence) predicted worry-centered reactions. Furthermore, intimacy motives mediated the relationship between proximity-seeking and relationship outcomes, suggesting that individuals high in proximityseeking (secures, anxious-ambivalents) are more likely to experience positive relationship-centered reactions in their most recent hookup because they engage in hookups for intimacy. Several hookup motives (intimacy, partner approval, peer approval) partially mediated the relationship between attachment orientations underlying insecure attachment (frustration w/partner, ambivalence, jealousy, anxious-clinging) and worry-centered reactions, suggesting that individuals with certain avoidant and anxious attachment orientations are at risk for negative emotional reactions to hookups, in part, because of the decreased intimacy and increased approval hookup motives associated with these orientations. Implications of our results for promoting healthy hookup behaviors among college students are discussed. *Selected for presentation at Association for Psychological Science, San Francisco, CA*.

#### 418 • Egocentrism and Violent Media SUCHETHA WAKWELLA

FACULTY SPONSOR: STEVEN KIRSH. PSYCHOLOGY Background research has suggested that there is a possible correlation between the use of violent video games and egocentric tendencies. The purpose of this study is to replicate these findings and test the effects of violent media consumption, ego-centrism, and exposure to violent video game summaries on responses to hypothetical vignettes in which college students are wronged. Participants will complete questionnaires that assess their level of ego-centrism, and media violence use in the last 6 months. The video game history form assesses how frequently participants play video games. Participants will read either video game descriptions that highlight the vengeful nature of the protagonists or identical descriptions without the vengeance component and rate the attractiveness of the video games on a 5 point unipolar scale. Finally, participants will read 5 hypothetical vignettes and report the likelihood that that would try to get back at the antagonist. The hypothesis for this study is that media violence use and ego-centrism will be positively correlated with vengeful responding on the vignettes. In addition, it is expected that participants reading the video game descriptors containing vengeance will provide more vengeful responses than participants reading the descriptors without the vengence component.

#### SUSTAINABILITY/TESLA HOUSE

#### **314** • Geneseo Gives Back JAMES CANNING, OTTO JUNIOR FACULTY SPONSOR: EUGENE DEZARN,

SUSTAINABILITY

Launched in 2005, the Geneseo Gives Back program is designed to reduce the waste created by the needless discarding of usable items when the residence halls close in May. Every year, as students are moving out, the Geneseo Gives Back team collects clothing, non-perishable food, and dorm decoration items from all of the residence halls. We also pick up furniture from students who live off campus, and we bring it all to the Interfaith Center to be sold at affordable prices during the annual Interfaith Center Tag Sale at the beginning of the fall semester. This way, we prevent hundreds of items in good condition from being thrown out each year, and also help students and community members buy clothing and household items for reduced prices.

315 ● Waste Minimization at SUNY Geneseo \$

#### EMILY POLIZZI, ABI O'CONNOR, WILLIAM REICHMAN, ALAINA OUGHTERSON, MARIA LEONARD

FACULTY SPONSOR: MARGARET REITZ, TESLA HOUSE

The United States produces an average amount of 500 billion pounds of waste per year. This amount of waste is harmful because it pollutes our water supply, takes up land for landfills, and is harmful to ecosystems. We first investigated Geneseo's policies that are in place in order to reduce food, energy, and water waste on campus. Many students don't finish food and it gets wasted when it could be composted. In some buildings, campus lights are left on all night while in other buildings lights are set on timers to dim and are motion sensitive. In residence halls like Monroe Hall, there are rain-water harvesting stations, but in other buildings on campus there is not efficient use of water. We took these findings and then explored ways to mitigate the amount of waste (e.g., recycling, composting, conservation, and investments in technology). Many students are not aware of Geneseo's contributions to reduce waste and they don't understand how impactful their personal contributions could be. One of the proven ways to decrease waste is to increase awareness and visibility of current efforts; we recommend

## 316 • The Power of Stress: An Exploration Into the Suffering of College Students

etc. highlighting specific efforts.

campus-wide campaigns on social media, flyers,

HUNTER ALLEN, JONAH STINER, JENNA SYPOSS, REBECCA RODRIGUEZ, GIOVANNI CELLAMARE FACULTY SPONSOR: MARGARET REITZ, TESLA

HOUSE

Our group is comprised of five first year students of varying majors. As college students, we have experienced a variety of stressful situations throughout the semester ranging from tests to awkward social situations. On the national level stress and anxiety among college students has been on the rise for the past decade. This study identifies factors that influence one's stress level and inform people on how to reduce their own stress at SUNY Geneseo. In order to do this, we first answer the following questions: 1) what factors influence stress, 2) how do these factors influence one's stress level, and 3) what can we do to help? Reports about mental health compiled from the Lauderdale Student Health & Counseling Department and a survey we sent out about mental health to SUNY Geneseo students indicate that the Lauderdale Student Health & Counseling Department is overloaded with counseling cases and the student stress levels are alarmingly high. There is a positive correlation between student stress levels and visits at SUNY Geneseo's health centers.

# **317** • Far From the Final Draft JOSEPH CILENTO, EAN COSTELLO

FACULTY SPONSOR: MARGARET REITZ, TESLA HOUSE

The NFL draft was created in 1936 and has been an effective way to keep teams competitive, but how much of an effect does the draft really have on teams' and individual's success? The purpose of our project is to delve into the process and

#### Posters 2 • 5:15 – 6:45 PM

outcomes of the NFL draft, how it works, how players are chosen/evaluated, and what it means for their careers. There are committees within the NFL that are dedicated to evaluating players and projecting their success. We wanted to know: what would be the impact of changing the order of the draft? We went in to the draft itself and picked out a few 2017 draft picks and used them as case studies to see how a good early draft pick can impact the season. After investigating, we found that players taken within the first few rounds of the draft have a greater chance of being a determining factor in how successful a team's season will be. If the draft rules were to be changed to give all rounds an equal chance of having an outstanding rookie, the entire process would be trivialized, and the 'good teams' wouldn't be checked, and would unbalance the league.

#### College Union Ballroom • Stage Poster Session 2

## Historical Homestead – a Virtual Reality Tour

Virtual Reality Demonstrations

#### ZACHARY VEITH

#### FACULTY SPONSOR: KIRK ANNE, COMPUTING AND INFORMATION TECHNOLGY

Historical Homestead utilizes virtual reality technology to create digital representations of the objects and rooms of the Wadsworth Homestead. Examining select rooms, and the objects within, illustrates connections between the Wadsworth family and larger historical contexts.

## Living Locally - a Virtual Reality Art Gallery

#### JULIA TANNENBAUM

#### FACULTY SPONSOR: LYNETTE BOSCH-BURROUGHS, ART HISTORY

Living Locally is a virtual reality art gallery exhibiting the strides and struggles of sole proprietors in the local Livingston and Wyoming County community. The purpose of this presentation is to show a glimpse of what it takes to run a local business. In addition it will bring awareness and inform students and faculty about what is outside of our small campus. After being involved with Adopt-a-Business for the past four years, this is my thank you to the businesses that I have been so lucky to work with. Our goal at Adopt-a-Business is to educate the local businesses on the importance of technology and digital media. I have incorporated the advancing technology of our society in my presentation by showing this presentation through projection of the gallery, and also utilizing the expertise of Dr. Kirk Anne to build a virtual reality gallery through Photoshop that is then transferred to Google Cardboard. This will allow the observers to physically be immersed in the gallery.

## **GREAT DAY MUSIC FESTIVAL**

## DOTY RECITAL HALL

#### 8:30 AM - 9:00 AM

## Geneseo 9:00 Combo "The Combo Plate"

A Night In Tunisia, Dizzy Gillespie

My Funny Valentine, Lorenz Hart

Go Daddy-O, Big Voodoo Daddy

#### Sesame Street, Joe Raposo

NOAH WEISS, JOSEF DIGIORGIO, BRIAN VARGAS, PETER JESPERSEN, BENJAMIN MICHALAK, LUCAS SMITH, CODY ESPOSITO FACULTY SPONSOR: BILL TIBERIO, MUSIC

#### <u>9:05 AM – 9:35 AM</u>

Geneseo 6:00 Combo

Doxy, Sonny Rollins

Totem Pole, Lee Morgan

Rumpus Time, Huntertones

*Twin,* Christian Scott NOAH WEISS, WILLIAM BARRIE, BRIAN VARGAS, JACOB HOUSEKNECHT, ROBERT MARINO, JAMES AMBALAVANAR, DOMINIC FLORIO FACULTY SPONSOR: BILL TIBERIO, MUSIC

#### <u>9:40 AM - 9:55</u>

Geneseo Flute Choir SARAH MANDANAS, JULIA DIBERNARDO FACULTY SPONSOR: EMLYN JOHNSON, MUSIC

#### 10:05 AM - 10:50 AM ACAPELLA HOUR

#### Emmelodics

ABBY GRIFFIN, ALEXANDER WEBBER, BETHANY LIANO, CAITLEN EPPERSON, CAROLINE HOUSE, CLAIRE PRUNIER, DENIS HARTNETT, GAGE MATYASOVSKY, JACK MCALEVEY, JASON HANDY, JEREMY DAVIES, KAILA MCKIERNAN, KENNETH COLE, SAM HUNT, WILLIAM BLANDING, MACKENZIE HINTZ, MEAGHAN BARRY

#### Exit 8

SEAN RYAN, EMILIOS PAPAS, SARAH BISSEL, MADISON KEMLER, MADI BOWEN, EMILY CATALDO, EMELY AQUINO, CHRIS MILLER, THOMAS VANGELLOW, SIAGE HORVATH, MICHAEL MASETTA, COLINE SUGRUE, KATE KELLER, RYAN ANDREWS, MATT CRAWFORD, ALLISON ALTSCHILLER, MARIA RUIZ

#### **Hips and Harmony**

ALLISON SEMMEL, CHLOE TERREL, CHRISTIE CONNELLY, EMILY MCMAHON, ERIN HOGAN, HANA SMITH, HANNAH GRIFFIN, HANNAH VAN WERT, ISABELLA HIGGINS, MADELINE REILLY, MARISSA MARASH, MEGAN ANDERS, MIKA SWANSON, NATALIE BUCHOLTZ, RACHAEL THORP, SARAH PLOOF, SYDNEY SHERIDAN, TAYLOR STUART

#### **Between The Lines**

MELISSA FRANK, TREVOR GRECO, MADISON MURPHY, MEGAN KENNEY, CARL TREIBER, RAPHAEL ELMASRI, VINCENT MECCIARELLO, KEVIN PIERCE, DESTINY PARSONS, GABRIELLE OWEN, EVAN BURR, EMILY HURLBUTT, GRETTA CAVATASSI, JOSEF DIGIORGIO, RYAN ZIPPER, MICHAEL KELLY, KAZMIRA PITZRICK

#### 11:00 AM - 11:20 AM

The Butterfly Lovers

String Quartet no. 14 in D minor, D. 810 "Death and the Maiden" - I. Allegro, III. Allegro molto, IV. Presto, Franz Schubert

String Quartet in F Major - I. Allegro Moderato - Très Doux, Maurice Ravel

EVELYN WELCH, STEVEN YEE, ERIC WANG FACULTY SPONSOR: ANDREW BERGEVIN, MUSIC

#### 11:25 AM - 11:45 AM

## **String Quartet**

Por Una Cabeza, Carlos Gardel

String Quartet no. 6 in B-flat major, Op. 18 - I. Allegro con brio, Ludwig van Beethoven

String Quartet no. 12 in F major, Op. 96 "American" - I.

Allegro ma non troppo, Antonin Dvorak TAYLER NGUYEN, BRIDGETTE SROKA, AMANDA SALADINO, CHARLES PEDERSON

FACULTY SPONSOR: ANDREW BERGEVIN, MUSIC

#### COLLEGE UNION LOBBY 12:00 PM

#### **Geneseo String Band**

LEEANN BRUESTCH, GABRIELLE ANGELORO, TORI BARONE, LINA CLIFFORD, GIANCARLO DENAROSO, TAYLOR FRITZ, HANA GARTY, ABRAHAM HAUSER, ADAM KOVLER, RYAN LEE, ROBERT MATIGZECK, AMELIA MINDICH, KAZMIRA PITZRICK, AMANDA SALADINO, KAYLA SCHUM, BRIDGETTE SROKA, MOLLY SQUIRES, GREG VINAL, PAIGE WALSH FACULTY SPONSOR: JAMES KIMBALL, MUSIC

## THE GREAT BATTLE OF THE ARTISTS

### MACVITTIE COLLEGE UNION KINETIC GALLERY 9:00 AM - 6:30 PM

The GREAT Battle of the Artists is a multi-media art contest that is a partnership between GREAT Day, GCAB Arts & Exhibits and Nassau Hall. Winners were selected by a panel of faculty staff and student judges and will be announced at 6:00 pm.

## JESSICA LISI

**Animal Skull:** This is a pastel still life of a variety of miscellaneous items. Created in the fall of 2014, it was used as a practice for still life, which then became a full-fledged piece of work after the mixture and layer of the pastels brought new life to the remnants of a deceased creature.

#### The Unheard Voices from the War

on Terror: This piece is a mural located in Fraser - it has been dedicated to the Muslim Student Association and the Geneseo History Department. The materials used were acrylic paints, created in December of 2017. This was the final project for Dr. Abbas's "Voices from the War on Terror" directed study. The inspiration for this mural was derived from the many interviews I conducted with the different Muslim members within our Geneseo community; the focus was to show how the War on Terror has impacted Muslim identity. This mural was created as a way to give these community members a voice, and as a message to the campus to show it is a diverse, inclusive, and welcoming place. It is a way to bring to light the many wonderful Muslim students and faculty on this campus, a way to say they are here, and they are an integral part of what makes Geneseo, Geneseo.

**Daisey Ridley as Rey:** This piece is created from Prisma Color Colored Pencils, created in the summer of 2018. It was created as an homage to the brilliance of Daisey Ridley as a talented actress in a successful, male-dominated franchise. It also is to commemorate the greatness, intensity, and creativeness of the *Star Wars* universe.

#### EMILY BRASS

In Your Backyard: chalk pastel

Nose: chalk pastel

Left Behind: sharpie marker

#### TIMOTHY WILLIAMS

**Top of the Roc:** This is a portrait I had Michael Slattery take of me on top of a parking garage in Rochester. It was taken on my Minolta XD-11 with 35mm Kodak Tri-X, developed, and then optically printed on Ilford photographic paper. I wanted to go back to the start of photography to learn about the process firsthand. The total time it took for me to produce this single image probably amounted to around 6 hours. The darkroom process is really interesting, yet it is very time consuming and expensive. I now have a real appreciation for how far technology has progressed.

#### SONIA BARTOLOMEO, JENNA COBURN

**Persephone's Purpose**: Persephone was the daughter of Zeus and Demeter and the Greek goddess of spring. She was abducted by Hades, the god of the underworld. While Persephone remains in the underworld, her mother refuses to let any plants grow. **Finding Fuller**: The title for this photograph was influenced by the 19th century modern dancer, Loïe Fuller, who was inspired by the the beauty of the stained glass windows in the Notre Dame Cathedral in France.

**Sleeping Swan:** The pose in this photograph is considered a *Swan Lake* arabesque based on the romantic ballet *Swan Lake*. Swans have the ability to sleep on one leg, usually with their heads tucked under one wing.

#### MARISA SANQUINI

The Wall: In present-day Palestine, there is an illegal wall up in the Gaza strip. Remarkable artwork and messages of peace are present on the concrete structure for miles. Interestingly, many people do not know about the structure that towers over the Gaza strip. My project is a mural of the wall with accompanying graffiti, artwork, and messages to render a lifelike rendition of the structure. The painting will walk the line between Palestine and Israel with an overall message of peaceful relations. I intend to start a conversation that is not rooted in opinion but fact. The mural will house the wall with the central graffiti piece being a young child and accompanying doves, peace symbols, and cartoons. On the top of the wall, the message "Borders are the scars of history" will be displayed. In the distance behind the wall, the skyline of Jerusalem will be visible (although this is not visible from the wall in life it will get the message to the viewer of where this is taking place). I hope this piece will invoke an emotional reaction to the viewer and enable them to learn more about what is happening in Palestine.

#### DIANA DEFILIPPIS

**Seascape:** An Australian coastline. Charcoal on paper. (2017)

**Reclining Figure**: A study in figure drawing. Charcoal on paper. (2018)

**New Era**: An interpretation of modern resource dependency. Ink on paper. (2018)

#### JANELLE CLEMENTS

**Forest Nymphs (Series)**: My inspirations in life are the women in my life. These black women, my friends, my role models, my mother have shown strength, vulnerability, determination, and beauty and it is my desire in life to showcase them, who exude these encompassing qualities. This day was so important to me. We all spent the last few days reeling from heartache, numbness, moving on. It is evil what the world makes black women go through. But going with my sisters to Mama Earth, going with my sisters to Heaven's feet, I felt at peace again. We're artists. We're warriors. We carry light and positivity all around us. We suffer, yes, but we suffer together. Love you girls. That day was the first day of my life.

#### CAITLIN CASTELLETTI

**Harvey:** This piece is a mixed media representation of the effects of Hurricane Harvey on Houston, TX. Photographs were taken during Spring Break of 2018.

**Views:** This photograph was taken with a Canon T5 Rebel at the top of Bald Mountain during sunrise. August 2015.

**Frigid**: This photograph was taken with a Canon T5 Rebel at Letchworth State Park. January 2018

## LUZ MELO

## Inaugural Brushstrokes: Compact

**Edition:** This is a set of mini paintings made with acrylic paint. These paintings are very special to me since they are my first paintings. Before college, I never tried to do paintings. However, one of my friends had a bunch of painting supplies and since I loved to draw, I decided to give it a try someday. One day I went to Walmart and saw some mini canvases. I didn't think it twice and I bought the necessary supplies to do my first painting. Now, I love to paint as much as I love to draw.

**Charcoal Photos:** I always liked to draw. In fact, when I was little I used to draw my favorite anime and cartoon characters all around the walls (even though my mom wasn't really happy about that). However, while I was in high school I stopped drawing. Now that I'm in college I decided to start drawing people instead of animated characters. What a better way to start drawing than drawing my first college friend?

#### LEAH CHIN

Geography of Self I and II: Geography of Self I and II are a set of acrylic paintings that I did in celebration of the female form. I chose to work with grey and brown paints specifically when painting the figures in order to appreciate the black female figure, as a black woman myself. I incorporated contour lines that would usually be seen on maps of landscapes, as a reference to the details of the body that women might see as imperfections. The contour lines also show that the female figure is her own territory that has areas that are limited to herself, but can also be explored by others when given permission to do so. Although the contour lines are small, they are there and they have a presence. The blue paint splatters, and brush strokes are a representation of how society, and sometimes the black woman herself, has tried to taint the black female figure by trying to point out the details that might not fit into societal beauty stands. However, the black female figure always shines through. August 2017.

**Hand in Stone**: This piece was sculpture of out a soft white rock; however, I am not sure of the specific type of the rock. The rock itself was very soft, thus making it very fragile to work with during the sculpting process. The hand is in a cupping position as if it is offering something up. I made this because I wanted something simple and a soft piece to display in my room. 2014

#### SARAH BUCKSER

Level Up: This piece is a series of four panels in hung in sequence from left to right. The piece deals with my senior year of college which was particularly hard. I faced the death of my grandfather (represented by the loose pieces of ribbon), my brother's heroin addiction (indicated by disembodied hands and needles), accepting that I am gay (symbolized with flesh), countless medication changes (symbolized by the trippy color palette, falling teeth due to nightmarish side effects, and disembodied eyes caused by paranoia), and harassment due to my mental illness. It felt like this year has been full of hands holding me fast in place and forcing me to watch horrible things in my life unfold.I tried to create a world similar to a nightmare, but with hope at the end. The college life has been an extremely hard and dark time for me, but art has given me the hope to move forward when I graduate this may. It was a hell of a journey, but I have made it to the checkpoint and can finally level up.

#### JULIA TANNENBAUM

**The Old Man and the Sea**: Digital Photography, Subject matter: Henry Von Elm. This piece was inspired by his love of the water and the novel *The Old Man and the Sea* Over the years, this piece has captured his presence and livelihood. My freshman year of college, Uncle Henry was diagnosed with stage 4 leukemia and this image became my reminder of who he once was, and how one day he will be back to this position.

**Evolution:** 400ISO BW Film with in-camera manipulation. This image is a seven photo exposure displaying the evolution of the life of a plant.

**Bridge of Wonder:** 2D digital manipulation, All of Central Park in one image.

#### CHANDRA LABONTE

The Quiet Lion: Acrylic on canvas, 2016

The Car, The Cow, and The Classic: Acrylic on canvas, 2017

The Green "Hog": Harley Davidson Breakout Motorcycle

#### MAXFIELD LAWTHER

#### The Artist's Outlook (John Lennon in

**Charcoal):** I wanted to depict John Lennon's essence, not only in his profile but also his contribution to music. In this portrait, I arranged some of his most well-known song titles into a pattern not unlike his classic choice of glasses. Mixed Media. Spring 2017

The Tangles of Revolution (Marie Antoinette in Graphite): Here, Marie Antoinette – the lavish and foreign wife of King Louis XVI of France – is depicted with quotes from Victor Hugo's *Les Misérables*. Widely known by history for her extravagant hairpieces, she was sent to the guillotine October 16, 1793. Hugo's words capture the ideals of a group of students who led an uprising in 1832, nearly forty years after Antoinette's beheading. The uprising took these character's lives, as they galvanized the push towards individual freedom from oppression. Mixed Media , Spring 2017.

# A Caged Bird – No Longer (Maya Angelou in Charcoal): Maya Angelou was

an iconic figure in the civil rights movement, as well as a revered poet. Her 1969 autobiography, *I Know Why the Caged Bird Sings*, details how she overcame the trauma of racism that she experienced as a child. The bird is comprised of excerpts from her poem *Still I Rise*. Even after her death in the Spring of 2014, her message continues in her literature. Mixed Media, Spring 2017

## WHITLEY BRINCKA Alaskan Blooms: July 2017 Rochester Skyline: October 2017 New York City: March 2018

#### JASMINE CUI

**Kosher Feelings:** I am 12 when my mother tells me "sharp" can be used as compliment. Yes, the capacity to hurt has become synonym for the capacity for success. We value the knives – anything willing to kill. And yet, I refuse to believe in a future that is not radically gentle. Even in the darkest, most isolated places – tenderness always finds a way.

Origin Story, America: Like any wannabe God, America wears a long beard and a name pinned to his lapel. He claims to do this for our benefit. To keep us from addressing prayer to imaginary men. Men with louder voices. "Consider," he says, "the chaos that would ensue: a litany undelivered letters all sucked into ether." America knows the best way to claim any vacancy is to name it. Of course then, America has a name.Of course then, its name is God. This God never mastered subtlety. This God inflicts nine plagues' worth of bestial grief and demands a sequel. This God fills a world with brutal instruments. For every woman exists a man who wishes to break her. and so Every wedding, a magic act. the bridal veil becomes an immutable fixture. Everywhere, women become private ghosts. This God claims ownership through revision. Rewrites the world's mechanics in His native tongue and calls it Physics. Demands we never break from our own inertia. And so we never break, we bend.

JOHANNA CORONEL

**Just Look Up:** This image was captured on a busy autumn morning, one in which I rushed to catch my bus. But who can see that when what lies ahead is worth so much more than being late for a few seconds. Geneseo, October 2017.

**Take Me Back to Where I Belong:** Sometimes it's better to drive without a particular direction. Montauk Point State Park, September 2016.

**Escape:** This is my escape back home. Cold Spring, 2016.

#### HANA MEDA

**Clementine:** Etched plexiglass print, India ink on paper, 2015

#### H.D. UDESHI SENEVIRATNE

**Red-vented Bulbul**: 2018. Mother Nature designs birds meticulously. This is my attempt at recreating the marvelous details of a red-vented bulbul.

**Gentle Giant:** 2017. Acrylic painting. Inspired by photos and videos of Gunnar Freyr.

**Toucan:** 2018. Acrylic painting of a keel-billed toucan.

#### GEORGIA SCHNORE

**Barren:** Pencil on paper. An interplanetary explorer makes the first stop on their journey. They find nothing on this planet so they leave something behind to grow.

**The Nameless World**: Pencil on paper. On the surface of this world the explorer finds large and unusual structures created by an ancient race. There are no entrances or exits to be found on these buildings. The explorer sits down and watches the gas giant in the sky.

**Edge of Reality:** Pencil on paper. Once the explorer has traveled far away from their home they meet a magical Wurm. The Wurm presents the explorer with a gift.

#### BRITTNEY HEROLD

**Out of This World**: Chalk pastels are used to capture the beauty of outer space.

**Saturn:** Saturn with its rings and one of its moons done in pastels.

## **SPECIAL PRESENTATIONS**

#### Performing Children's Literature as Theatre

8:30 am – 12:50 pm, Brodie Black Box Theater SCOTT CASSIDY, MICHAELA DOOR, JOE EDIZEL, BENJAMIN GEIGER, LILA KATZ, SEAN MCPHILLIPS, STEPHANIE PEARL, KIMBERLY ROMANO, TESS ROMANO, ARISA THOMAS

#### FACULTY SPONSOR: RANDY KAPLAN, THEATRE/DANCE

Ten directing and education students will present performances of children's literature they have adapted from narrative to dramatic form with an emphasis on inclusion and diversity for Grades 1-5. Audience members have an opportunity to participate both in the plays and, time permitting, in brief talk backs after each mini-session.

8:30-9:45, 3 shows

Lila Klatz, "Du Iz Tak" Joe Edizel, "The Man Who Tricked a Ghost" Stephanie Pearl, "Mufaro's Beautiful Daughters"

9:55-11:10, 3 shows

Kimberly Romano, "El Cucuy" Scott Cassidy, "Zen Socks" Benjamin Geiger, "Jack and Jim"

11:20-12:50, 4 shows Arisa Tohma, "The Blessing Cup"

Michaela Durr, "The Princess and the Warrior" Tess Romano, "Clever Jack Takes the Cake" Sean McPhillips, "Take Me Out to the Yakyu"

#### Julia Walker Memorial Milton Reading

10:00 am – 1:00 pm, 2:15 – 4:00 pm, Gazebo <u>11:30 Literary Pieces in Honor of Julia Walker</u> ERIN LIEBERMAN, RAINA SALVATORE, HANNA ATKINSON, REBECCA FASCIANO, KATHRYN KLAPKOWSKI, KAILA MCKIERNAN, ADAM ONTIVEROS-OBERG, JORDAN PIERSHALSKI, BENNETT SOLYMOSY, NATHAN STIVERS FACULTY SPONSOR: ROB DOGGETT. ENGLISH

Students will be offering a continuous reading of "*Paradise Lost*" in honor of Professor Julia Walker, who passed away last month. The reading will begin at 10 and end at 4, with a break during the keynote address from 1-2:15. In addition, faculty from the English department will be gathering at 11:30 to read some short literary pieces in honor of Julia. All faculty, staff, and friends are welcome to attend.

#### **GEO Dumpster Dive**

#### <u>10 am – 12:30 pm Between MCU and Mary Jemison</u> CARA O'SHEA, PAUL MCDERMOTT, MEREDITH SAUCCI, SHEILA BARABINO BARABINO, KYLE HIGGS, JANE AULD, JENNIFER SCHULMAN, ALANNA

RICHMAN FACULTY SPONSOR: DAVE ROBERTSON, GEOGRAPHY Geneseo Environmental Organization will be performing a live, interactive performance art installation and reflection of consumption and waste disposal in Geneseo. This live installation will involve sorting through one bag of trash from each residence hall and academic building on campus and determining how much of that waste could have been recycled. The sorting process will be open to audience participation, and proper protective gear such as gloves, goggles and protective suits will be provided to anyone who wishes to participate. The bags will first be weighed as-is, and then reweighed once all the items in the bag have been properly sorted as landfill, paper, or glass/plastic/metal. This performance will be followed by an analysis of how much "trash" could have been recycled in our sample selection. This data analysis is not intended to be a highly accurate or scientific process, but rather the objective of this interactive art performance is to create a visual impact of consumption and waste at Geneseo. By doing so we seek to promote positive environmental action on an individual level by encouraging students and faculty in attendance to reevaluate their personal consumption and recycling habits.

#### The Geneseo Jazz Ensemble

## 11:15 am – 12 pm, South Hall Quad

rain location Wadsworth 21

NOAH WEISS, WILLIAM BARRIE, BRIAN VARGAS, JOSEF DIGIORGIO, DOMINIC FLORIO, ROBERT MARINO, ANDREW KEMLER, CODY ESPOSITO, JAMES AMBALAVANAR, JASON LANG, JONATHAN PASTORE, LAUREN ELLIS, LEORA DEISENROTH, PAUL OLEYOURRYK, PETER JESPERSEN, TIMOTHY SNYDER, MADISON RODGERS, SAMUEL DOLE, BEN MICHALAK, CESAR FLORES, LUCAS SMITH, RIE OTA, WILLIAM DORFNER, JACOB HOUSEKNECHT, SOPHIE YEOMANS FACULTY SPONSOR: BILL TIBERIO, MUSIC In the spirit of GREAT Day, the Geneseo Jazz Ensemble will be providing a sneak peek at our concert lineup, as well as other charts from the past and present, in our first outdoor concert in years. We hope provide a pleasant accompaniment to GREAT Day, as well as send our sound throughout South Quad and across the valley.

#### **A Tunnel Through Barriers**

#### <u>11:15 – 12:45, 5:15 – 6:45 MCU 3<sup>rd</sup> Floor East Lounge</u> KITRICK MCCOY

FACULTY SPONSOR: JOSEPH COPE, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

This art installation represents the culmination of Kitrick McCoy's John A. '87 and MaryGrace '84 Gleason Ambassadorship in Student Affairs. The project explored the integration of disability into a modern 21st century higher education and business environment, informed by a groundbreaking hypothesis. The installation coincides the release of a comprehensive report detailing project findings.

# Sustainability and Environmentalism at SUNY Geneseo presentation for SUNY Chancellor Kristina Johnson

#### 3:30 pm, Doty Tower Room

#### FACULTY SPONSORS: MARGARET REITZ, DAVID ROBERTSON, GEOGRAPHY PAUL MCDERMOTT, CARA O'SHEA, BRENDAN CULLEN, JOSHUA BOYER, JANE AULD

This session of presentations aims to report on student-run sustainability initiatives at SUNY Geneseo. Currently, the two main sustainability-focused organizations on campus are GEO (Geneseo Environmental Organization) and the SUNY Geneseo Office of Sustainability. These two organizations cover the majority of campus life, and each organization, although similar in mission, provide uniquely different opportunities for students. GEO is a student-run organization, which hosts events raising awareness for global and local environmental issues. GEO is a medium for students to get active in student life and join a community focused on environmentalism. GEO's presentation will highlight GEO's involvement with Sustainability Month and Earth Week. The Office of Sustainability is a staff of paid and volunteer student interns, who head sustainability initiatives at SUNY Geneseo. The Office of Sustainability provides opportunities for both students and faculty to develop and implement sustainability-focused projects at the campus level. Every department is connected to sustainability, and by working interdepartmentally, the Office of Sustainability creates changes that encompass all communities on campus. The Office of Sustainability's presentation will address developments made by the Office of Sustainability in recent years, highlighting the expanding Campus Grown Food Initiative and Campus Compost Program.

### Sapphire Winter Guard at Geneseo

#### 5:10 pm College Union Plaza (Outside)

#### JANE FENG, KAYLAN RUIZ, SHELBY SCHMIGEL, MARISSA CANARELLI, JANE BARANELLO, BROOKE MONFALCONE, SARAH CHANNELS, CECELIA GONZALES, SOPHIE HOLCOMB

FACULTY SPONSOR: LISA SMITH, MATHEMATICS

Sapphire Winter Guard at Geneseo is completely student-run and is under the direction of captains Jane Feng, Kaylan Ruiz, and Shelby Schmigel. It incorporates elements of dance and equipment spinning in a show that is performed in competitions within the North East Color Guard Circuit. This is Sapphire Winter Guard's fourth year participating in competitions as well GREAT Day. This year's show titled "Castle on the Hill," follows a group of friends throughout life. While hearts may break and things may be lost through the years, many find their way back to each other in the end.



## Geneseo Insomnia Film Festival

## 6:30 PM reception, 7:00 PM screenings Wadsworth Auditorium

The Seventh Annual Geneseo Insomnia Film Festival took place on March 23/24. Participants had 24 hours to write, shoot, edit, and post a video no longer than 3-minutes in duration using a set of elements provided. Teams competed for prizes against other SUNY Geneseo students in an attempt to create the wittiest, most interesting, and creative video. This was a chance for students of all talents to flex their creative muscles and demonstrate their skills, as writers, actors, videographers, or editors. Submissions were judged by a panel of Geneseo faculty and staff. Now we're inviting you to come see the videos during this special GREAT Day screening and awards ceremony! The event is open to all Geneseo community members and we encourage you to bring family, colleagues, and friends as we recognize the excellence, achievements and talent of our 2018 Insomniacs!

## **GIFF Teams and Participants**

#### [Team [Team Name]]

KADIN FAWCETT JACK GRANT JULIA CAMERON RICHARD JAMES

## The Secret Themes

GUS FORMATO HUNTER SIEGEL CHRISTOPHER CUMMINS ROBERT PIASCIK

#### **American Spirits!**

NATALIE HAYES JOHN MADSEN BRANDON SCHERHAUFER NADINE CAFARO

#### <u>Jennifer</u>

RACHEL MOLINO TREVOR GRECO BRANDON CHUNGATA ANNIE RENAUD

## **The Schuyler Sisters**

BRIDGET KELLEY MEGAN SHORTT

#### All Day Erde

ERDE YILDIZ NAWANG SHERPA MAURYS FLERY MICHAEL DISLA Vortex DOWON HWANG ASH DEAN MARIA REMILLARD MARISA GINGELLO

#### Panda Production SANG WOOK NAM ERWIN UY ERIC WANG XIAO JUN CHEN

#### Da Dino Duo

MIRANDA NEYERLIN BIANCA BOIANO TARA BREW ALIS URENA

## Team Rocket

CON ROCHE LOUIS CAVES STEVEN WILLIAMS SEAN MCPHILLIPS

#### Metropolis Pictures TIMOTHY WILLIAMS MICHAEL SLATTERY MUSTAFA AMINALHAQ

## The Knights Who Say

"Ni!" PATRICK BUCKLEY LEAH CHRISTMAN JULIA MCGAUGH RACHAEL FERRALORO

#### The Bunk Trumpets CAROLIEN MOSSEL JENNIFER BENDER CLAYTON SMITH LILY CODERA

Sam & Fred SAMUEL AVILES FREDERICK LIU

## I don't have enough

## money for Chicken

Nuggets BAILEY CHAPIN DANIEL BORG LYDIA FREGOSI SANDRA KRALIK

## The Lean Mean Meme

Machine CHARLES ROBERTSON ZACHARY VEITH JOHN ROBINSON

#### The Three Amigos

NICKOLAS SCHUESSLER ZACHARY GOODRICH NIAMH QUIGLEY

#### Newton's Knights

NICK LAURELLI CODY ESPOSITO MADELINE WEISBECK

## Team Sea

WEI YING CH'NG ANH MAI SAVANNAH WILLIAMS

#### **The Lenscaptures**

STEPHEN CARON THOMAS FIERRO OUSMANE SAM

#### **Golden Rose Production**

CESAR NUNEZ ERIK BUCKINGHAM MEGAN MACK SOFIA VILLALON

#### **Chromatic**

SHAUNA RICKETTSHANA SMITH DENIS MAZARIEGOS ELIZABETH JACOBS

#### Macaroni Rascals

AARON RODDY LILY SWANICK COLIN ELLIS

## AB123

ANGEL GONZALEZ BILLY RICHMAN

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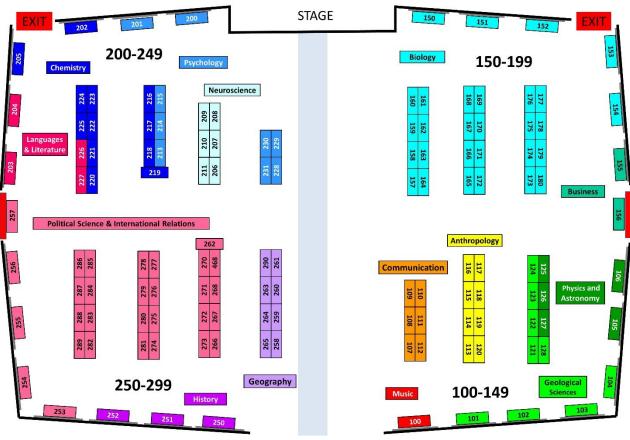
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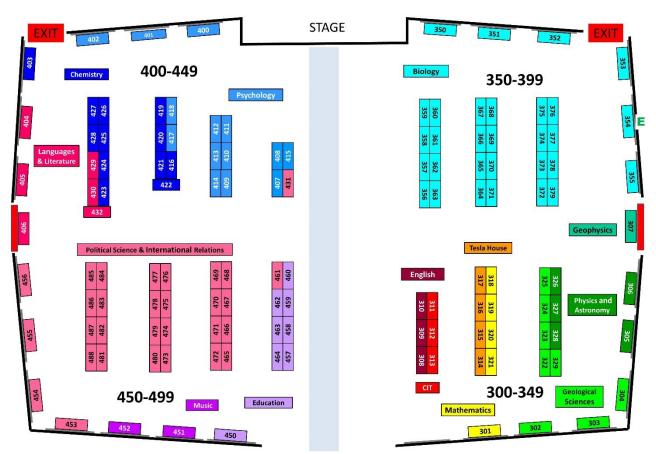




## **GREAT Day Session 1 Poster Locations**

ENTRANCE

## **GREAT Day Session 2 Poster Locations**



ENTRANCE