

8-25-2023

2017 GREAT Day Program

State University of New York at Geneseo

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THE
ELEVENTH
ANNUAL



GREAT DAY

GENESEO

APRIL 25, 2017

Geneseo Recognizing Excellence, Achievement, and Talent

Welcome to SUNY Geneseo's Eleventh 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

What's new this year?

Session 3 ROUND ROBIN

This session will have three varied presentations in each room, with ample time to move from room to room between presentations. All sessions are in Welles and South Halls.

Block 1 • 2:25 – 2:40

Block 2 • 2:50 – 3:05

Block 3 • 3:15 – 3:30

The Changing of the Posters

GREAT Day has reached the point where all of the posters will no longer fit in the College Union. Thus, half the posters will now be displayed in the College Union Ballroom during Session 1, 11:15 am – 12:45 pm, with lunch and the other half during Session 2, 5:15 – 6:45 pm, with the reception.



The GREAT Knight Quest
Step one: Visit 3 or more GREAT Day Presentations
Step two: Take a picture at each event
Step three: Make a collage with said pictures
Step four: Post the collage to Instagram (use #uknighted & #WeAreGREAT) for a chance to win a FitBit!
Step five: Come to the Fireside Lounge at 7pm to find out the winner and enjoy refreshments!

studentLifez GENESEO GREAT Day 4-25-17



GreatDayGeneseo



@GeneseoGREATDay



geneseo.edu/great_day

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Poster Map.....back cover

Cover design by Joanna Walters '13

SCHEDULE

7:30 – 8:20 AM	Opening Coffee Hour Honoring 10 Year Supporters & 2016 Proceedings
Milne 1 st Floor	
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, Sturges, Welles	
9:55 – 11:10 AM	Concurrent Presentations • Session 2
Bailey, Brodie, Doty, Gazebo, ISC, Newton, South, Sturges, Welles	
11:00 AM	Music at the Gazebo
8:30 – 11:10 AM	Music Festival • Part 1
College Union Hunt Room	
11:15 – 12:45 AM	Poster Presentation 1
College Union Ballroom	
12:00 PM	Buffet Luncheon/Geneseo String Band
College Union Lobby	Sponsor: Geneseo Student Association
1:00 – 2:15 PM	Keynote: Dr. Erich Jarvis
	<i>The Jack '76 and Carol '76 Kramer Endowed Lectureship</i>
Wadsworth Auditorium	
2:25 – 5:05 PM	Music Festival • Part 2
College Union Hunt Room	
2:25 – 3:40 PM	Concurrent Presentations • Session 3
<i>ROUND ROBIN</i>	<i>Block 1 • 2:25 – 2:40</i>
<i>South, Welles</i>	<i>Block 2 • 2:50 – 3:05</i>
	<i>Block 3 • 3:15 – 3:30</i>
3:50 – 5:05 PM	Concurrent Presentations • Session 4
Bailey, Brodie, College Union, Doty, ISC, South, Sturges, Welles	
5:10 PM	Geneseo Winter Guard
College Union Plaza	
5:15 PM	Hula Hoop Exhibition
College Union Lobby	
5:15 – 6:45 PM	Poster Presentations & Reception
College Union Ballroom	
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
7:00 PM	GREAT Knight Quest Awards
College Union Fireside Lounge	

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 .

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.

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 11th 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:

BIOLOGY

Jennifer Apple
 George Briggs
 Harold Hoops
 Susan Muench

CHEMISTRY

Cristina Geiger
 David Geiger
 Eric Helms
 David Johnson

COMMUNICATION

Meredith Harrigan
 Atsushi Tajima

ENGLISH

Melanie Blood

GEOGRAPHY

Jim Kernan

GEOLOGICAL SCIENCES

Dori Farthing
 Scott Giorgis

MATHEMATICS

Andrzej Kedzierawski

POL SCI & INTERN RELATIONS

Jeremy Grace

PSYCHOLOGY

James Allen
 Monica Scheinder
 Joana Zook

SCHOOL OF BUSINESS

Leonie Stone



**THE PROCEEDINGS OF
 GREAT DAY 2016
 IS NOW AVAILABLE!**

greatjournal.geneseo.edu

Featuring original student research and interviews, including an exclusive interview with Patty Hamilton-Rodgers!



**These Students and Their Faculty Mentors have been
 Published in the Proceedings of GREAT Day 2016:**

PETER BENSON

TZE-KI HON, HISTORY

THOMAS GARRITY

TZE-KI HON, HISTORY

DILLON FEDERICI

JENNY KATZ, PSYCHOLOGY

TAYLOR POWERS

CHRISTINA AGOSTINELLI-FUCILE,
 LANGUAGES & LITERATURES

FELICIA RYAN

STEVE DERNE, SOCIOLOGY

KAITLYN MORGAN

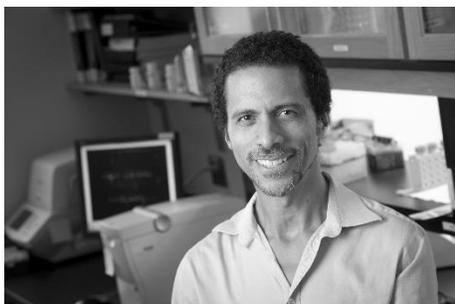
MELANIE MEDEIROS,
 ANTHROPOLOGY

KATHERINE ZASLAVSKY

ATSUSHI TAJIMA, COMMUNICATION

**NANA BOAKYE, ELIZABETH
 BOATENG, SEUNG KIM, JENNY
 SOUDACHANH, SKYLER SUSNICK,
 & JAWAD TAZARI**

MARK BROOMFIELD, THEATRE &
 DANCE

The Jack '76 and Carol '76 Kramer Endowed Lectureship**KEYNOTE ADDRESS****Wadsworth Auditorium • 1:00 – 2:15 PM*****Introductions by President Denise Battles and Jack & Carol Kramer*****Dr. Erich Jarvis – Dissecting the Molecular Mechanisms of Vocal Learning and Language: A Personal Journey****About Dr. Jarvis, Professor, Rockefeller University and Howard Hughes Medical Institute Investigator**

Erich Jarvis' diverse academic path began while studying dance at the School of Performing Arts in New York City. Upon graduation, he had to choose between continuing his passion as a dancer and beginning his journey to become a scientist. He found that the discipline and creativity of his dance training were equally applicable to scientific study, leading him to choose science. Since then, Jarvis received his degrees in Biology and Mathematics from Hunter College and further pursued his Ph.D and postdoctoral work in Molecular Neurobiology and Animal Behavior at Rockefeller University. Jarvis has continued his scholarly adventure as an Associate Professor at

Duke University, and now, through his current role as a Professor and Head of the Laboratory of Neurogenetics of Languages back at The Rockefeller University.

His lab studies how the brain controls complex behaviors, in which they focus on the molecular pathways involved in vocal learning in songbirds. Through an integrative approach, Jarvis collectively uses behavioral, anatomical, electrophysiological and molecular biological techniques to study the molecular pathways involved in the perception and production of learned vocalizations. Through his research, he hopes to advance the understanding of the neural mechanisms for vocal learning and basic mechanisms of brain function. Along with his extensive research and over 100 scientific publications, he has been the recipient of a number of significant honors such as his recent recognition in 2015 with the American Society for Cell Biology Ernest Everett Just Award, highlighting his impact on diversity in science.

Erich Jarvis' journey has allowed him to engage in a variety of professional endeavors. For example, through the Science Outreach Program of New York, Jarvis provided laboratory research experience to inner-city students of underrepresented backgrounds. Additionally, he has served in multiple societies and committees such as the National Advisory Mental Health Council and was a founding member of the Black Collective at Duke University in 2001. Furthermore, Jarvis has been featured for his remarkable achievements when he was listed as one of ten most trailblazing scientists in *Mental Floss* magazine in 2007 and was named one of 50 most powerful men and women of Duke University in 2009.

There will be a reception for Dr. Jarvis in conjunction with the poster session in the College Union Ballroom at 5:15 pm.**All are welcome.**

CONCURRENT PRESENTATIONS DEPARTMENT/ROOM QUICK VIEW GUIDE**SESSION 1 • 8:30 – 9:45 AM**

PAGES 5 TO 13

A	BUSINESS	SOUTH 338
B	ANTHROPOLOGY	BAILEY 104
C	MATHEMATICS	SOUTH 340
D	BIOLOGY	ISC 115
E	ENGLISH	WELLES 138
F	CHEMISTRY	ISC 131
G	THEATRE & DANCE	DOTY RECITAL HALL
H	EDGAR FELLOWS MISCELLANY 1	BAILEY 102
I	EDGAR FELLOWS MISCELLANY 2	BAILEY 103
J	EDGAR FELLOWS MISCELLANY 3	BAILEY 202
K	EDGAR FELLOWS MISCELLANY 4	BAILEY 203
L	ENGLISH	BAILEY 101
M	ENGLISH	WELLES 119
N	GEOGRAPHY	BAILEY 201
O	ENGLISH	WELLES 128
P	POLI SCI & INT REL	MILNE 105
Q	HISTORY	STURGES 108
R	ENGLISH	WELLES 115
S	POLI SCI & INT REL	WELLES 121
T	POLI SCI & INT REL	WELLES 123
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X	MATHEMATICS	SOUTH 328
Y	EDUCATION	NEWTON 204
Z	ENGLISH	WELLES 24

SESSION 2 • 9:55 – 11:10 AM

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B	BIOLOGY & MATHEMATICS	ISC 131
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D	BUSINESS	SOUTH 340
E	BUSINESS	SOUTH 338
F	EDGAR FELLOWS MISCELLANY 5	BAILEY 102
G	EDGAR FELLOWS MISCELLANY 6	BAILEY 103
H	EDGAR FELLOWS MISCELLANY 7	BAILEY 202
I	EDGAR FELLOWS MISCELLANY 8	BAILEY 203
J	LANGUAGES & LITERATURES	ALICE AUSTIN THEATER
K	ENGLISH	BAILEY 101
L	ENGLISH	GAZEBO
M	ENGLISH	WELLES 128
N	GEOGRAPHY	BAILEY 201
O	GEOLOGICAL SCIENCES	ISC 115
P	ENGLISH	WELLES 134
Q	POLI SCI & INT REL	WELLES 121
R	HISTORY	STURGES 109
S	HISTORY	STURGES 108
T	LANGUAGES & LITERATURES	BAILEY 105
U	THEATRE & DANCE	DOTY RECITAL HALL
V	EDUCATION	NEWTON 204
W	THEATRE & DANCE	WELLES 138
X	MATHEMATICS	SOUTH 328
Y	ENGLISH	WELLES 119
Z	ENGLISH	WELLES 140
AA	ENGLISH	WELLES 24

SESSION 3 ROUND ROBIN • 2:25 – 3:40 PM

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Block 1 • 2:25 – 2:40

Block 2 • 2:50 – 3:05

Block 3 • 3:15 – 3:30

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C	COMMUNICATION, GEOGRAPHY, CIDD	WELLES 115
D	POLI SCI & INT REL, BIOLOGY, ENGLISH	WELLES 134
E	ANTHROPOLOGY, ENGLISH, BUSINESS	WELLES 119
F	GEOGRAPHY, MATHEMATICS, PSIR	WELLES 128
G	LANG & LIT, COMM, CHEMISTRY	WELLES 131
H	BIOLOGY, ANTHROPOLOGY, ENGLISH	WELLES 132
I	POLI SCI & INT REL, GEOGRAPHY, BIOLOGY	WELLES 133
J	COMMUNICATION, MATH, PHYSICS & ASTRONOMY	SOUTH 338
K	BIOLOGY, HISTORY & CIDD, ENGLISH	SOUTH 340
L	MATH, CIDD, POLI SCI & INT REL	WELLES 138
M	CIDD, ENGLISH	WELLES 140
N	SUSTAINABILTY, CIDD, BIOLOGY	SOUTH 328
O	ANTHRO, PHYSICS & AST, ENGLISH	WELLES 24
P	MUSIC, ANTHROPOLOGY	WELLES 26

SESSION 4 • 3:50 – 5:05 PM

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F	ENGLISH	BAILEY 105
G	SOCIOLOGY	BAILEY 104
H	POLI SCI & INT REL	WELLES 121
I	GOLD	MCU 114
J	HISTORY	STURGES 109
K	HISTORY	STURGES 108
L	MATHEMATICS	SOUTH 340
M	MUSIC	DOTY RECITAL HALL
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P	SOCIOLOGY	BAILEY 203
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R	SOCIOLOGY	BAILEY 202
S	EDUCATION	BAILEY 102
T	THEATRE & DANCE	BRODIE 154
U	THEATRE & DANCE	ALICE AUSTIN THEATER
V	POLI SCI & INT REL	WELLES 24
W	MATHEMATICS	SOUTH 328
X	MATHEMATICS	SOUTH 338
Y	BUSINESS	DOTY TOWER ROOM
Z	POLI SCI & INT REL	WELLES 26
AA	WOMEN & GENDER STUDIES	WELLES 140

CONCURRENT PRESENTATIONS 1 • 8:30 - 9:45AM**1A • BUSINESS SOUTH 338****Alternative Facts: Economic Truths and Myths in the Trump Era**

FACULTY SPONSOR AND SESSION CHAIR: LEONIE STONE, BUSINESS

SARAH COMERFORD, AMMAN WEAVER, ALEXANDRA BASILE, BEN SWISHER, BRENDAN MAHONEY, CONOR KIRBY, EMILY DELSIGNORE, EMILY HURLBUTT, EMMA HOLTZMAN, FRANCESCO CUPELLI, GRAHAM HARRISON, JAMES ANANIA, MICHAEL SLATTERY, PAUL CUMONE, RAFAEL ZIOTTO, SHIXING FAN, SYDNEY LEVINE, THOMAS BROCK, WILSON TAN

The Fed Challenge team discusses the state of the economy, 2017, with attention to many of the current economic debates: immigration and globalization, financial deregulation/tax cuts/infrastructure spending, long term growth and productivity, free college tuition/health care/meaningful employment, as well as other issues, and, as always, Fed policy!

1B • ANTHROPOLOGY BAILEY 104**Anthropologists Perspectives on Contemporary Social Issues**

SESSION CHAIR: MELANIE MEDEIROS, ANTHROPOLOGY

Understanding Diversity

STELLA ODURO

FACULTY SPONSOR: MELANIE MEDEIROS, ANTHROPOLOGY

As a result of segregated school environments, largely due to differences in socioeconomic, college may be the first place where some students learn to work with people from different races and ethnicities (Park, 2014). Interracial friendships not only help to develop the racial climate of a campus, but also helps students develop positive learning, increases critical thinking, and enhances college experiences (Tanaka, 2003). Students do not benefit if homophily forms; homophily is the "tendency of like to attract like" (McPherson et al., 2001; Park, 2014). Homophily can occur if students lack precollege experience of interacting with students of other ethnicities and races or if the college's racial climate does not encourage students to interact with others from different racial groups. In this presentation, I will present data on whether homogeneity on the Geneseo campus is influenced by racial climate and/or homophily in student's precollege experience.

Former Refugees' Perspectives on Current Issues of Migration & Refugee Displacement

NATHALIE KALUMBWE, MAMTA SHARMA

FACULTY SPONSOR: GWENDOLYN FAULKNER, ANTHROPOLOGY

The recent refugee crisis has reignited various debates and conversations on migration dynamics of both countries of origin and destination. Whether voluntary or involuntary, the various responses to migration of the international community has raised issues about global responsibilities and refugees'/migrants' rights. This

 Promotes sustainability

has also reinvigorated the discussion on past and present migration policies and reactions of different U.S administrations, which have been deemed ambiguous at best. Political turmoil in particular and globalization in general are two of the numerous factors contributing to this increased movement/displacement of human beings across national boundaries. This presentation will explore factors that act as facilitators as well as obstacles to this phenomenon. On a micro level, new environments often mean migrants have to navigate shifting identities while also maintaining identity aspects of their home country. As such, this presentation will likewise focus on transnationalism and other creative ways that migrants are using to capitalize on their experiences and new surroundings.

1C • MATHEMATICS SOUTH 340**Applications of Mathematics**

FACULTY SPONSOR AND SESSION CHAIR: JEFF JOHANNES, MATHEMATICS

Who's the Real Number 1?

BEN REINER

In NCAA football and basketball the ranking system has become something of a controversy; the ranking have been shown to have inherent flaws. In this talk I will be discussing an alternative to this system, namely the Colley ranking system. We will review the mathematics behind the Colley system as well as looking at how it differs from the current system. Lastly we will look at the two compared to each other and the advantages and disadvantages of both in order to determine who is the real number one.

If You Are Sick, Stay Away from Me

MICHELLE EAMES

Have you ever wondered "What are the chances I will get sick while at school?" Influenza spreads based on the number of social contacts people have during the week. Through the use of differential equations, mathematicians create an epidemiological model to predict the spread of a virus. These equations can be used to predict an epidemic or test the effectiveness of a vaccine.

Can You Check that Digit?

ASHLEY HERNANDEZ

Have you ever looked at a barcode and wondered where those numbers come from and why they are important? In this talk, I will speak about identification numbers and how they are related to mathematics. I will be speaking specifically about the identification numbers found on library books and on grocery items. This talk will be centered on check digit schemes used to find check digits on such items. I will also speak about how we can make sure the identification numbers are correct and how we can identify errors made.

A Socialite, a Lover, and a Mathematician in the 1700s

SAMANTHA SEARS

Émilie le Tonnelier de Breteuil, Marquise du Châtelet-Lomont is most commonly known as Émilie du Châtelet. She is also more known for her

many relationships, including her fifteen-year affair with Voltaire. However, her contributions to various scientific and philosophical fields are often downplayed when discussing her life. In this talk, I will be highlighting the mathematical work Châtelet did while alive. I also hope to discuss why Châtelet spent her days academically in a time when French women were expected to take care of the house and be a socialite.

1D • BIOLOGY ISC 115

FACULTY SPONSOR: HAROLD HOOPS, BIOLOGY
FACULTY SPONSOR AND SESSION CHAIR:
HRISTINA NEDELKOVSKA, BIOLOGY

The Use of *Saccharomyces cerevisiae* as a Model for the Study of Prostate Cancer: A Novel Mechanism for the Nuclear Localization and Activation of the Androgen and Glucocorticoid Receptors

ARIEL YUSUPOV

Saccharomyces cerevisiae is one of the most important eukaryotic model organisms in molecular and cell biology. Its short generation time, ease of transformation of new or deletion of existing genes, and the full functionality of human tumor suppressor genes, protein kinases, steroid receptors, transcription factors, and many metazoan proteins make it the ideal model for the study of the androgen (AR) and glucocorticoid (GR) receptors. Sxm1 is a yeast protein most homologous to human Importin 7, which has until now been thought to inhibit the nuclear localization of the androgen receptor. Using Δ Sxm1, wild type (W303), and Sxm1 overexpressing yeast, transformed with AR-HRE-LacZ and GR-HRE-LacZ plasmid constructs, our yeast model has shown that not only is Sxm1 required for the nuclear localization of the AR and GR, but also DHT has opposite effects on the two receptors. Possibly a regulating mechanism, DHT induces AR and inhibits GR activity. A γ CPGal1-Importin 7 plasmid was constructed through PCR cloning of Importin 7 into a Gal1 vector (pS310) and transformed into Δ Sxm1 yeast containing the AR/GR reporter plasmids. Betagalactosidase assay has shown that Importin 7 reconstitutes androgen and glucocorticoid receptor activity in Δ Sxm1 yeast and is required for their activation and nuclear localization.

1E • ENGLISH WELLES 138**Black British Writing**

FACULTY SPONSOR: MARIA LIMA, ENGLISH
SESSION CHAIR: ELIZABETH MESSANA

The Deformation of an English Rose

DANIELA CREGAN

Andrea Levy's short story, "Deborah," showcases how the abuse of a young girl causes her descent into violence. Through the narrative voice of Fern, her young black friend, Deborah is portrayed as having the potential to become an English Rose. However, the abuse and neglect she suffers make

her instead a vulgar and dirty child who subjects Kenny, their younger playmate, to horrible violence. The story works to expose how flawed conventional expectations of whiteness and white families are, ultimately questioning Englishness as a white-only club.

Fantasy Is the New Reality

MARLO SESKIN

In Leone Ross' "Covenant," the protagonist, Sarah refuses to conform to traditional feminine expectations, despite efforts by both father and husband. Having a child and migrating to England do not improve her situation, as her story highlights the distinction between fantasy and reality, a life of pain and discomfort ultimately providing the foundation for her trust in the Covenant, a cult of sorts. As Sarah tells the Covenant interviewer, inflicting pain on others becomes her normal. Readers will have to decide at the end whether the murder of her son is justified to satisfy a dream deferred as long as hers.

Mrs. Mason's Makeover

HEATHER LUBEY

Sheila Auguste's "Mrs Mason's Monologue" offers a first-person narrative of the protagonist's married life, which is strictly structured by patriarchal norms. It is not until she finds herself belittling other women for their physical appearance that Mrs. Mason suddenly sees herself in these unnoticed women, recognizing how much she has internalized such misogynistic lens. Upon this recognition, Mrs. Mason makes a vow to change her position in the world and stop accepting her husband's affairs. It is her daughter (appropriately called Angel) who takes her for a physical makeover to match her internal changes. Mrs. Mason finally achieves validation and learns to love herself, leaving her husband, she is finally ready for the next stage in her life.

Critical Essay: Emphasis on 'the

Polite'

DANIELLE KAHN

This paper explores the protagonist Blossom's use of self-assurance as a coping mechanism during her journey to England from the Caribbean. Throughout "The Polite Way that British People Have" from Six Stories and an Essay by Andrea Levy, Blossom constantly asserts her minimal knowledge of English culture as a reason why she should ameliorate from Caribbean lifestyle, but unfortunately falls short as the English people in Jamaica and on the boat see through her façade and take advantage of her. This is exemplified through Blossom's fixation on hot and cold climates, and the use of a coat to protect her from the coldness. I assert through this paper that Blossom is in fact aware of her shortcomings, illustrated by her attack of Petal, another Jamaican woman on the boat. When Blossom finally arrives in England, her coping mechanism finally breaks when she learns that the coat she bought isn't a "fine coat" like she thought, and that the politeness the English people have used with her is actually manipulative rather than kind.

1F • CHEMISTRY

ISC 131

SESSION CHAIR: AMBER CHARLEBOIS, CHEMISTRY

Synthesis of Stercobilin: A Potential Biomarker for Autism

JORDAN COFFEY

FACULTY SPONSOR: AMBER CHARLEBOIS, CHEMISTRY

Autism Spectrum Disorder (ASD) is a condition that is currently only diagnosed by psychological tests and observations or by parental assessment. To date, there is no quantitative method to diagnose autism. Dr. Troy Wood (SUNY Buffalo) has preliminary results that indicate children with autism have a lower concentration of urinary stercobilin (a bile pigment synthesized in the small and large intestines). In collaboration with the Wood group we have synthesized an internal standard to quantify the stercobilin in a patient's urine. We have established and optimized a two-step method for synthesizing stercobilin from bilirubin that has deuterium (heavy hydrogen) incorporated. This synthetic isotopomer of stercobilin has been analyzed using carbon and proton Infrared Spectroscopy (IR), Nuclear Magnetic Resonance (NMR) and Mass Spectrometry (MS). Analysis shows complete incorporation of deuterium with an increased mass of 13 amu. *Selected for presentation at ACS National Conference, Washington, DC.*

Chain Link Dependence on Non-Steroidal Biphenyl Gelators

WILLIAM ROBERTS

FACULTY SPONSOR: CRISTINA GEIGER, CHEMISTRY
A series of biphenyl methyl and ethyl diester derivatives of varying chain length were synthesized and their gelation abilities and properties were compared to similar biphenyl cholesterol diesters previously reported. 4,4'-bis-(5-methyloxycarbonyl)pentyl)oxy)biphenyl (BBO6-Me) produced a weak gel in octanol and no gel was obtained when 4,4'-bis-(5-ethyloxycarbonyl)pentyl)oxy)biphenyl (BBO6-Et) was tested in several organic solvents. X-ray diffraction of single crystals grown from slow evaporation of BBO6-Me and BBO6-Et in octanol provides insight into the difference in their gelation ability. Stronger and more stable gels were obtained from the longer alkyl chain gelators 4,4'-bis-(7-methyloxycarbonyl)heptyloxy)biphenyl (BBO8-Me), 4,4'-bis-(7-ethyloxycarbonyl)heptyloxy)biphenyl (BBO8-Et), 4,4'-bis-(9-methyloxycarbonyl)nonyloxy)biphenyl (BBO10-Me) and 4,4'-bis-(9-ethyloxycarbonyl)nonyloxy)biphenyl (BBO10-Et). Methyl ester gelators in general produced better gels than the corresponding ethyl ester gelators. SEM was used for the investigation of the morphology of the xerogels. BBO6-Me xerogel displayed platelet-like aggregates and the longer alkyl chain xerogels showed more typical entangled twisted ribbon-like aggregates. All gels formed exhibited chirality as observed by induced circular dichroism (ICD) spectroscopy. On the basis of XRD data and molecular modeling, we propose a packing mode for the formation of the organogel aggregate. *Selected for presentation at Undergraduate Research Symposium, Rochester, NY.*

1G • THEATRE & DANCE

DOTY RECITAL HALL

Dance Composition: Choreographic Projects

FACULTY SPONSOR AND SESSION CHAIR: JONETTE LANCOS, THEATRE & DANCE

I Found

TERESA BECKMAN

This piece is about falling in love and the heartache associated with the experience. The message applies whether it's falling in love with someone who is not good for you or simply falling in love at the wrong time. The movement is meant to reflect the bittersweet longing associated with memories of past relationships. *Selected for presentation at 2016 American College Dance Association Conference, Brockport, NY.*

Give/Take

BRYNN DAVIE

Although it is important to be selfless and give to those around you, it is imperative to take care of yourself at the same time. It is necessary to ask for help sometimes; to lean on others in your own time of need; to reach out when you feel like you can't go through something alone anymore. Give/Take depicts various emotions experienced by an individual and a group as they attempt to not only give, but also accept care, love, and support. "Accepting help is its own kind of strength." - Kiera Cass "One of the most important things you can do on this earth is to let people know they are not alone." - Shannon Alder

Vita Incerta

LAURA DOLAN

As we go through life we often have a plan of where we think we want to go, what we want to do, and who we want to be. It is often hard to let go of these plans as we grow and change. It is important to let yourself embrace who you are and where your life is leading you in order to be truly happy. "I may not have gone where I intended to go, but I think I have ended up where I needed to be." -Douglas Adams

1H • EDGAR FELLOWS MISCELLANY 1

BAILEY 102

SESSION CHAIR: DAVID LEVY, PHILOSOPHY & EDGAR FELLOWS

Veganomics: Reducing Meat Consumption Through Public

Policy

ERIK MEBUST

FACULTY SPONSOR: CHRIS ANNALA, BUSINESS

Few tenets of the current environmental movement garner devotion as fervent as that professed by proponents of veganism. Yet, devotion alone cannot ameliorate the serious environmental threat that veganism aims to address: bringing the United States to sustainable levels of animal product consumption will require structural changes to the systems that produce our food and the environments in which we consume it. In pursuit of these changes, this project explores the role of price mechanisms, government nudging, and information campaigns in reducing the consumption of animal products. On the surface, price mechanisms including taxes and the elimination of relevant subsidies seem to hold the most promise of a behavioral shift. Lowering meat consumption in the long-term, however, requires permanent changes in attitudes, and information

 Promotes sustainability

campaigns will play an important role in accomplishing this objective. The aim of the policies presented here is not to eliminate the practice of meat consumption completely, but to prompt consumers to substitute meat with plant-based alternatives until a sustainable level of consumption is reached. Though there is strong evidence of likely health and ethical benefits from such a shift, this argument is presented in terms of eliminating externalized costs on the environment.

Scrapable Insights: How Twitter Can Inform on Kenyan Electrical Grid Growth and Development

SHAYNE O'BRIEN

FACULTY SPONSOR: CHI-MING TANG,
MATHEMATICS

While reports have shown that Kenyan electrical connectivity rates have increased significantly over the past few years, there is little known about how the electric grid and its reliability have changed over time. In this study, the research team utilizes a Twitter API to scrape tweets from the national electric company Kenya Power and Lighting Company (KPLC). Using machine learning algorithms and techniques rooted in time series analysis and inferential statistics, scraped tweets are given a binary classification as to whether or not they are power outage related. Outage related results are visualized and analyzed in an effort to determine how the Kenyan electrical grid has changed between 2013 and 2017, as well as gain insight into what can be learned via the public customer service communication medium.

Energy Storage for a Sustainable Future

CARA GANNETT

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS
& ASTRONOMY

Two photo voltaic solar panels and a wind turbine have been successfully installed on the eGarden site to produce energy to run any number of electrical devices on site. However, these technologies only produce energy under certain circumstances, making energy storage a necessity to ensure energy when it is needed. For this reason, a variety of storage systems will be studied at the eGarden during the next few years to determine the most efficient means of storage. Currently, the solar panel energy is being stored in a bank of four 12 volt deep cycle batteries placed in series. Although batteries have shown to be effective storage devices, they are energetically costly to produce and may not have an effective energy return in their lifetime. In this talk, I plan to address different forms of energy storage, specifically lead acid batteries and hydrogen gas energy storage, as well as the importance of energy storage in developing a more sustainable community.

11 • EDGAR FELLOWS MISCELLANY 2 BAILEY 103

SESSION CHAIR: LISA MEYER, SOCIOLOGY &
EDGAR FELLOWS

A Two-Stage Vehicle Routing Algorithm Applied to Disaster Relief

Logistics after the 2015 Nepal

Earthquake

MOVED TO SESSION 21

STEPHANIE ALLEN

FACULTY SPONSOR: CAROLINE HADDAD,
MATHEMATICS

Disaster relief distribution can be optimized across a variety of objectives such as time, coverage, and the fulfillment of demand. Regardless of the objective, operations research models can enable users to find more efficient ways of distributing supplies to affected areas. After the 2015 Nepal Earthquake, the Himalayan Disaster Relief Volunteer Group (HDRVG) distributed supplies to affected areas and, during this distribution, the organization kept detailed records of their missions and made the information public. In this project, we model the organization's delivery of supplies to areas as a vehicle routing problem (VRP) - whereby we seek to find the quickest way of routing the delivery vehicles to the locations the organization identified. The VRP has an extensive literature regarding possible modeling and solution techniques. We focus on a two-stage method which first allocates locations to vehicles via an integer program and then routes the vehicles according to a specific algorithm. In the routing stage, we explore multiple metaheuristics to find the one which minimizes the distance traveled by the vehicles. We will present the results of this two-stage method for each of the 26 days during which HDRVG distributed supplies and will discuss the sensitivity of the model. *Selected for presentation at State University of New York Undergraduate Research Conference, Fredonia, NY.*

Nonbinary Gender in Public Relations

JADE BROWN

FACULTY SPONSOR: ATSUSHI TAJIMA,
COMMUNICATION

The perception of gender as a spectrum rather than a binary opens opportunities for gender identity and expression. It can help some people to realize that they are nonbinary by informing them of the genders other than male or female, and it can also help men and women to think about themselves as on a spectrum as well, and broaden their idea of their genders. People look to the media to reflect and inform them about society, and so a high-profile celebrity openly speaking about nonbinary gender identities could facilitate these processes. The purpose of my capstone is to help prepare me for a career in music public relations, in which I hope to eventually specialize in LGBT+ clients. Fall semester entailed research, including reading academic sources and conducting focus groups, one-on-one interviews, and a survey with people in and around the nonbinary community, and concluding with the creation of a hypothetical "client," a musician about to come out as nonbinary and who has hired me to help field the process and to best utilize their platform for trans/nonbinary advocacy. Spring semester entails the implementation of this research through a strategic plan that I would propose to my "client."

Bodies in Society and Dance

ELIZABETH OHMAN

FACULTY SPONSOR: LISA MEYER, EDGAR FELLOWS
Although embodiment and physical experience have historically been excluded from the discipline of sociology, there has been a push in recent years to recognize the body as a sociological phenomenon worthy of study. In my presentation, I will be discussing the various theoretical approaches to the body within sociology. In addition to giving a brief overview of the history of the sociology of the body, I plan to focus on theories which conceptualize the body as a mechanism through which social institutions exert control on individuals. I will then connect the sociological perspective on the body with theoretical work on embodiment in the performing arts to form an interdisciplinary understanding of the role of the body in society and performance. I also plan to include examples of how choreographers have explored these social issues of embodiment through dance, with reference to my own choreographic work exploring the idea of institutional control over bodies.

1J • EDGAR FELLOWS MISCELLANY 3 BAILEY 202

SESSION CHAIR: MICHAEL MASCI, MUSIC

A Night at the Movies: An Analysis of Film Music

JOHN COACCI

FACULTY SPONSORS: BROOKE MCCORKLE,
MICHAEL MASCI MUSIC

What has become so captivating about the movies? Why are we so attracted to the action and the drama? What drives us to the movie theater every time a new trailer airs? Often, we forget that it's not always what we see, but also what we hear. Film music is becoming increasingly popular, but its power lies in its manipulative capabilities. Music has the power to alter our perception of visual cues, but that often goes unnoticed to the viewers. This presentation will focus on the manipulative power of music in film. We will discuss musical techniques and styles that composers use, as well as form and structure. Through this analysis of film music, we can see its true power and influence.

Contextualizing Contemporary Chicana Art

KIAYA ROSE DILSNER-LOPEZ

FACULTY SPONSOR: LYNETTE BOSCH-
BURROUGHS, ART HISTORY

From comics to street art, Chicana artists have responded creatively and politically to cultural straddling between Mexican and U.S. identities. Alongside contemporary U.S. immigration policy, the contextualization of Chicana art recognizes how perceptions of the Mexico-U.S. border influence Mexican-American art and culture. While Donald Trump's presidency illuminates anti-immigration sentiment, U.S. perspectives of Mexican-Americans contain a history of creating and enforcing boundaries that limit access to a recognized personhood. This presentation intends to expose the continuous work of Chicana artists in their work to deconstruct and challenge systems of oppression through the creative and social work of art.

Old Faces, New Perspectives: The Role of Studio Art in a Liberal Arts Education

MAYA LUCYSHYN

FACULTY SPONSOR: LYNETTE BOSCH-BURROUGHS, ART HISTORY

Among liberal arts colleges, why are studio arts classes and majors so underfunded and underappreciated? I explore this phenomenon, as well as the now-hidden artistic talent of my college campus, through a project that is part research, part visual exhibition. The exhibition, "Old Faces: New Perspectives," is curated using artwork that students created in their free time, instead of in a structured artistic environment. More than half of featured artists were women, and Native American, Asian, Hispanic, LGBTQ+, and Jewish students were represented in the gallery space. The themes exhibited in the show--belonging, identity, cultural divisions--reflect the lessons that liberal art students experience in a traditional class setting. In my presentation, I will explore the history and reasoning behind the devaluing of studio arts in a liberal arts education. I will also explore its benefits in educating about different cultures and perspectives in an approachable way, as well as its usefulness in the mental health and personal growth of students. Finally, I will draw examples from the exhibit I curated, "Old Faces: New Perspectives," and analyze its worth to its artists and attendees, and particularly the value of its diverse representation when compared to the traditional art museum.

1K • EDGAR FELLOWS MISCELLANY 4 BAILEY 203

SESSION CHAIR: SHUO CHEN, BUSINESS

The Effect of a Flat Tax on the American Tax System

SARA NILES

FACULTY SPONSOR: MICHELLE STAEBELL, BUSINESS

Although taxes seem an ingrained aspect of American society, the current income tax was not established until 1913 with the ratification of the sixteenth amendment. Since then, many attempts have been made to improve the system, and one type of recurring proposal is that of a flat tax. This project evaluates the tax system based upon three criteria: simplicity, equity, and efficiency. It compares the current tax system with two flat tax proposals. The first is the Hall-Rabushka proposal, which was originally published in 1983 and brought attention to the idea of a flat tax system for America. The second is H.R. 1040, which is currently waiting to be brought before the Committee on Ways and Means. By comparing these systems to the current system in three areas: effect on average rate of taxes paid by taxpayers, effect on compliance costs, and effect on revenue, this paper attempts to find answers to which type of system is better based upon the established criteria.

Career Exploration Project

MARIELLE BURNETT

FACULTY SPONSOR: ROBERT BOYD, BUSINESS

The Career Exploration Project is designed to inform and remind students of the range of

professional opportunities ahead. Geneseo students can learn about the technical and personal aspects of careers in marketing, consulting, public relations, civil litigation, and more. In this portfolio of transcribed interviews, Geneseo alumni and other professionals bring to light the day-to-day tasks, challenges, and rewards involved in each of their fields; they also share their backgrounds, interests, priorities, and insights. Ultimately, understanding the responsibilities and motives of these professionals can help Geneseo students take an intelligent and active role in planning their futures.

Uncovering Trends in Campus Food Purchasing using Data Mining Techniques and Correlation Analysis

CAMRYN LIEB

FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Campus Auxiliary Services (CAS) is a not-for-profit company that serves the SUNY Geneseo community in a number of ways, and is perhaps most well known for their dining program. Nine different vendors on campus provide varied dining options for students, faculty, and visitors alike. Every day CAS amasses data on thousands of transactions. Data from the 2015-2016 school year were analyzed using a few specific techniques. A prominent contemporary data analysis technique is market basket analysis, which is a data mining tool that analyzes individual baskets that consumers buy and identifies frequently bought itemsets. Market basket analysis was performed for the following six campus vendors: Starbucks, Southside Café, Mary Jemison, Letchworth, Fusion Market, and Books and Bytes. Frequently bought itemsets were identified for each vendor for both the Fall 2015 and Spring 2016 semesters. Correlation analysis of popular items and seasonal weather patterns was performed. Moving forward, we hope that the results of these analyses can help CAS optimize the selling of their frequently purchased items and minimize food waste.

1L • ENGLISH BAILEY 101 Guided Poetry Source Tours 1

FACULTY SPONSOR AND SESSION CHAIR: LYTTON SMITH, ENGLISH

Where is Lori Maddox?: A Tour of Poetic Source

GABRIELLA GARCIA

On November 3, 2015 Thrillist Entertainment released an interview with Lori Maddox titled "I Lost My Virginity to David Bowie," in which Maddox reveals that at fifteen-years-old she had sex with David Bowie and her friend who was fourteen. In my presentation, I am going to guide audience members through an interpretation of my experience learning that my beloved idol who shaved space for gender queer people was a pedophile. As a poet, I have used this negative experience to create poetry, but it has not been easy as Maddox retells the story as a positive experience and I feel preserving her agency as a woman is also crucial. Since I have found that no one really talks about this after Bowie's death, I will be presenting the interview over Bowie's music

and exploring poetic source as internally conflicting and also as an archive which cannot be overly tampered with. I will also be using footage of Bowie to emphasize his role as a sexual idol and gender-fluid performer. This is part of the Guided Source Tour group for Dr. Smith's poetry workshop.

Grace's Museum of Source

GRACE GILBERT

In forming a tour of my own sources of poetry, I thought about seeing life as a collection. Poetry is a collection of my life experiences intermingled with artifacts and found language that have infused and directed the poems. In brainstorming how to guide others through the incorporation of source into my craft, I immediately went to the thought of crafting a mind museum. This would involve an empty room with enough wall space and table space to create "exhibits" that show the sources I regularly turn to (books, found language on cereal boxes, butterfly paraphernalia, etc.) I would be playing music that acts as source, and I would simply let the audience wander around the museum, poke around the exhibits, and read the poetry that has spawned from source. As a real museum-type simulation, and fitting for my personality, people would be guided by the exhibits and their descriptions, able to look around at their leisure and explore the room in whatever way they deem best, without me having to talk them through it. It is a quiet but powerful way to display my sources and poetry to the general public, and to show poetry as a collection.

1M • ENGLISH WELLES 119 Gaps and Flaws in the Human Soul, From Medea to Trump

FACULTY SPONSOR AND SESSION CHAIR: GRAHAM DRAKE, ENGLISH

Gender Disparity and Sexual Assault in Ancient Greece and Modern American Politics

JESSICA PICONE

A comparative analysis of two texts and their relevance to representation of women in today's politics. The two texts are Euripides' play *Medea*, and the second is "Why Sexual Assault Persists in Politics" by Sheryl Stolberg. *Medea* was written during the Greek's Classical Era and is considered one of the earliest texts alluding to feminism in Athens at the time. Despite the amount of time between the two texts, many of the actions were justified by the attitudes (both implicit and explicit) of Jason and the other members of the play. Stolberg's article specifically outlines some key behavior and attitudes in American Politics that both insinuate an uncomfortable environment for women and have the potential to deter women from politics. This essay draws parallels between the texts to demonstrate the progression of Classical Era Grecians and outline the gender disparity in politics currently.

What Dante Would Have to Say to Donald Trump: Examining Trump's Politics in the Context of Dante's *Inferno*

EVA PELLEGRINO

This paper compares Donald Trump's changing policies and political tactics to characters in Dante's *Inferno* that were punished for similar inconsistencies. In the paper, I reference a news article written in the *New York Times* that discusses many of Donald Trump's policies that he has changed since he has been elected, which I used as the basis for my argument that his views are constantly changing. In this essay, I assert that because Dante punished many of his sinners for similar wrongdoings, he would be extremely critical of the presidential elect. The purpose of this essay is not to dissuade anyone's political beliefs, but rather to compare a literary text to a modern issue.

The Flaws of Sir Lancelot and the Red Cross Knight

QUINN COUGHLIN

This paper discusses the flaws of two distinguished knights in literature, Sir Lancelot from Sir Thomas Malory's *Morte D'Arthur*, and the Red Cross Knight from Edmund Spenser's *The Faerie Queen*. Lancelot's story shows how the combination of chivalry and courtly love is a failure in that both values cannot be unified in one single code, as seen in the deterioration of Lancelot's chivalry as a direct result of his inability to keep his love for Queen Guinevere chaste and platonic. Similarly, The Red Cross Knight's, in his desperate attempts to prove himself as a worthy hero to his love and the world, makes irrational and reckless decisions that cost him dearly. However, their faults do add depth and dimension to what would have been a flawless hero, uninteresting and perfect. By giving both characters faults, whether or not it leads to their demise or not, it makes Lancelot and the Red Cross Knight more believable as human beings.

1N • GEOGRAPHY BAILEY 201

Cultural and Social Geography I

FACULTY SPONSOR AND SESSION CHAIR: DARRELL NORRIS, GEOGRAPHY

Couchsurfing the Nile

ALISON COGGINS

What began as a research project on the Egyptian Governorates bordering the Nile River turned into a report and analysis regarding the demographics of cities along the Nile River in both Egypt and Sudan. Throughout my research, I utilized a website called 'Couchsurfing', which is a medium for tourists to stay with locals as opposed to having to stay in a hotel, or motel. The number of Hosts per city, the overall population of the city, and the city's proximity to the Nile itself as factors of analysis. What determines a location's popularity to Couchsurfers? Does proximity to the Nile River itself, or proximity to the Nile Delta determine popularity? Is the location of historical or archeological sites more important to Couchsurfers than location in terms of Egypt or Sudan? These questions prompted my research, and thus became the focus of my analysis.

Parsing Seppuku

THOMAS MAGNUS

When a member of the Western world imagines a suicide victim in Japan, they typically think of a stressed out salary man slaving away in one of Japan's largest cities. The data, however, suggests

otherwise. This study has used statistics available on Stats-Japan.com, correlations and regressions run in SPSS, and a literature review regarding the work-place and traditional suicide culture of Japan to identify surprising trends in suicide across the country's 47 prefectures. It has been found that Japanese suicide more often occurs amongst the elderly in rural settings rather than the middle-aged in urban settings.

The Impact of Interstate 70 on the Population Decline of Places Along US 36 in Kansas

KALEB ALEKEL

In 1956 President Eisenhower signed the Federal-Aid Highway Act. The goal of the Act was to construct interstate highways and facilitate motorist travel across the country. The first stretch of interstate to be opened to traffic was part of what is now Interstate 70 in Kansas. Prior to the construction of I-70, the primary route to drive across Kansas was the old federal highway, US 36. These two highways run parallel to each other across Kansas. The goal of my research was to show how the construction of I-70 heralded a steep decline in the populations of places located along US 36. Using census data for 44 such places, I determined to what extent I-70 caused them to decline, as well as what other factors influenced this process. **Selected for presentation at Middle States Division of the Association of American Geographers 2016 Annual Meeting, Altoona, PA.**

10 • ENGLISH WELLES 128

Literary Representations of Disability and Communication

FACULTY SPONSOR: GILLIAN PAKU, ENGLISH
SESSION CHAIR: MELANIE WEISSMAN

Autism and Theory of Mind in *By the Light of the Moon*

MELANIE WEISSMAN

In his science fiction novel *By the Light of the Moon*, Dean Koontz links Shep O'Conner's mystical powers to his autism to the point where both conditions achieve the same overall effect in the narrative: emphasizing that Shep's deviations from the norm can be both a blessing and a curse. Koontz creates this connection by presenting Shep's disability primarily as one that impacts his ability to communicate with others. There is truth in this characterization, according to the many scholars who stress the connection between autism and a weak "theory of mind" -- that is, the ability to theorize about and attempt to comprehend the unspoken thoughts and feelings of other individuals. However, Shep is not the only character who struggles visibly with this skill. By showcasing other characters' difficulties in their efforts to read Shep's mind rather than only Shep's difficulties in his efforts to read theirs, Koontz stresses that the effective communication necessary for the heroes of *By the Light of the Moon* to save the day requires a strong theory of mind from both autistic and non-autistic parties.

The Third Policeman's Postmodernist Critique of Sign

Systems and their Categorization of the Disabled

MARISSA BELLUSCI

Language is a system that operates according to formalized rules, which the linguistically impaired do not always follow. In his postmodern novel, *The Third Policeman*, Flann O'Brien questions a system of language where the disabled are excluded and consequently categorized as the "other"--something that deviates from the norm. O'Brien deconstructs this system of language by disabling the narrative of his protagonist, an anonymous narrator, and thrusting him into a new system where the relationship between signifier and signified is abnormal. By manipulating the novel's sign system in unusual ways, O'Brien deconstructs the concept of naming in a system of language while simultaneously criticizing the way that our symbolic system often excludes the linguistically impaired.

Psychological Interference in the Epistolarity of *The Perks of Being a Wallflower*

JENNA COLOZZA

In *The Perks of Being a Wallflower*, Stephen Chbosky employs what Michael Bérubé calls a "disabled narrative" by delaying the reveal of the essential detail that the main character, Charlie, was molested by his aunt at a young age. Charlie's resulting trauma interferes with the narrative and sequence with which Chbosky reveals important plot details, and affects Charlie's ability to productively assess human relationships, thereby disabling the narrative. However, the very same conventions--or non-conventions--Chbosky uses to disable the narrative also produce a transgressive and subversive narrative identity that confronts ideological norms that silence child sexual abuse survivors and repress emotion in young men.

1P • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

MILNE 105

Mock Trial of the Year: Riley Winter v. TBD, Inc.

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

Riley Winter v. TBD, Inc

DARRELL GETMAN, MICHAELA OMECINSKY, PATRICK KANZLER, MEGAN METZ, KATRINA TILLAPPAUGH, MEREDITH CONDREN, HARRISON NEIDISH, ERIN LIEBERMANN, JILLIAN O'CONNOR, MATT BROWN, NICHOLAS DEON, NELLIE BLACK

Come see the trial of the year this GREAT Day as the Geneseo Mock Trial team takes multi-billionaire CEO Sawyer Shaw to court over alleged workplace discrimination. Sawyer Shaw is a serial entrepreneur who took over TBD Inc. in January 2014, quickly upgrading the flailing magazine company from a print publication to an online platform publishing the hottest and latest news on everything from politics to Kim Kardashian. But after Shaw fired the top paid and most famous writer Riley Winter in December 2015, allegations arose that Sawyer Shaw actively discriminated against older writers at the company in a

deliberate effort to make the workforce at the company younger. Now, Riley Winter has his day in court and you, the jury, must decide if this incomparable culture writer lost his career because of Sawyer Shaw's prejudice, or if he was simply unable and unwilling to adapt to a new and rapidly evolving digital marketplace.

1Q • HISTORY STURGES 108

New York Histories: Tonawanda Economics, Cayuga Removal, and Perceptions of Prostitutes

FACULTY SPONSOR AND SESSION CHAIR: MICHAEL OBERG, HISTORY

How the Cayugas Became the Only Iroquois Nation Without a Home, 1774-1795

BRANDON GAYLORD

In 1774, the Cayugas were one of the Six Nations of Iroquois Indians. During the American Revolution, they allied with the British and found themselves the target of an extermination expedition in 1779 known as the Sullivan Campaign. General Washington's desire to remove the Cayuga from the lands, prompted by the need to pay soldiers for their service in land, became one facet of life facing the Cayugas in the time of the Americans. While the U.S. government attacked their land with force, the State of New York preferred the use of treaties and rum. Claiming to act on behalf of the Cayugas and under the guise of preventing white "settlers" from encroaching on Cayuga lands, the State promised the Cayugas peace and tranquility on smaller reservations in exchange for cession from their ancestral homelands. The State's purpose was the same as the federal government - the removal of the Cayugas and the selling off of their lands. The difference was in the method used. This combination of State and Federal attacks proved successful and by 1795, the Cayugas became the only Iroquois people without any land.

Tonawanda: Economics and Interconnection, 1850-1892

CALEB WEISSMAN

My thesis addresses the Tonawanda Band of Seneca Indian's complicated relationship with nearby communities of New Yorkers, as well as their economic situation, in the late nineteenth century. I will first be briefly describing the contentious circumstances of the Tonawanda Band's separation from the rest of the Seneca Nation. Using local newspapers, I will then discuss the social connections between the Tonawanda Reservation and the surrounding communities. Next, I will be using the Report of the Special Committee to Investigate the Indian Problem of the State of New York, which includes transcripts of Native American testimony, as well as other documents to address the economics of the Tonawanda Reservation. Finally, I will use information from the U.S. Census, as well as the 1892 Extra Census Bulletin regarding the Six Nations of New York, to draw comparisons between the economic situation of those residing on the Tonawanda reservation and the surrounding communities.

Constructing the "Social Evil": An Analysis of Prostitution in New York, 1875-1920

COLLEN CUMMINGS

This presentation will focus on the way prostitution was addressed in New York from 1875-1920. Throughout this period, the societal attitudes toward prostitution shifted in many different ways, however always against the practice of prostitution. Various groups such as: the police, policymakers, suffragettes and religious institutions each held different beliefs as to the best way to deal with prostitution. This presentation will highlight each different perspective and the implications these perspectives placed on prostitutes.

1R • ENGLISH WELLES 115

Perspectives in 20th-Century

American Drama

FACULTY SPONSOR AND SESSION CHAIR: THOMAS GREENFIELD, ENGLISH

Strange Stage Fellows: Miller's Willy Loman (*Salesman*) and Harold Pinter's Max (*The Homecoming*)

ERIN CARLO, VERONICA TAGLIA

"Strange Stage Fellows" presents a rare Miller/Pinter comparison: parallels between Willyand Max's reliance on ancestral archetypes to legitimize their respective claims topatriarchal authority.

The Apple and The Snake: Reinterpretation of Myth and White Women in Early Drama of

Amiri Baraka

VERONICA TAGLIA

"The Apple and The Snake" brings much-needed clarity to a half-century of controversy overcross-currents of black aesthetic self-determination and violently misogynistic mythologies that inform Baraka's canonical early dramatic works.

1S • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 121

PLSC/IR Honors Theses

FACULTY SPONSOR: AARON HEROLD, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
SESSION CHAIR: ROBERT GOECKEL, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Public Opinion and the Capital Punishment Question

CLAIRE SHANKLIN

Judicial review empowers judges to invalidate laws that violate the Constitution- a task which traditionally supposes that judges will be insulated from public opinion. However, sometimes these lines blur as judges feel obligated to consider public opinion, and tension surfaces between the courts and the legislatures. This dilemma unfolded in the question of whether capital punishment is unconstitutional, and began when the Supreme Court established the "evolving standards of

decency test" for the Eighth Amendment in *Trop v. Dulles*. More specifically, the court asserted that the interpretation of "cruel" and "unusual" must change with the "evolving standards of decency of a maturing society." Thus, courts are tasked with discovering a public consensus on punishments to interpret the Eighth Amendment. This test challenges the traditional method of judicial review, which relies on precedent to formulate decisions, because it necessitates judges to take current public opinion into consideration. This paper examines the impact that using public opinion in judicial review has on capital punishment decisions and the balance of power in our Nation. Furthermore, it analyzes whether it is desirable or necessary to insulate the judiciary from public opinion.

Comparative Analysis of the Pillars of Contemporary American Republican Ideology and the Tenets of Catholicism

CASSONDRA MCCORMICK

This study examines the beliefs and voting behaviors of modern American Republican constituents from the last two decades. Through the lens of Catholic writings, this analysis will examine how voters understand the Republican platform as an aggregate of their own political, social, and spiritual beliefs. This examination will address issues including abortion, the implications of conservative social policy, and the potential loss of life brought about by war.

Déjà vu all over again? Millennials and the Alt-Right Across the Western World

AIDEN COFFEY

The spread of the "alt-right" across the Western World signifies the greatest shift in western politics since the onset of the Industrial Revolution. The old paradigm of right/left was developed as a framework to handle the central organizing question of the 19th and 20th centuries - the response of societies industrialization. For the 21st century, the battle lines will be drawn between globalists and nationalists over fundamental questions of identity. Many wishfully assume that the alt-right phenomenon is a phenomenon born of the old and resentful, but that is wishful thinking. The unpleasant reality is that in both Europe and America millennials drive its political strategy and shape its ideology by drawing from eugenicists and radical intellectuals of the "French New Right." Decades of growing economic inequality and rapid social change have left millions of millennials in the "forgotten" parts of the West ripe for radicalization. Since the conflict centers on issues of identity, the chances of civil conflict increase dramatically. The possibility of domestic terrorism, civil war and the even return of totalitarianism cannot be dismissed.

1T • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 123

Political Science & International Relations

SESSION CHAIR: KARLEEN WEST, POLITICAL
SCIENCE & INTERNATIONAL RELATIONS

The Invisible Minority: International Human Rights & LGBT Equality

MATTHEW BURLEY

FACULTY SPONSOR: JEREMY GRACE, POLITICAL
SCIENCE & INTERNATIONAL RELATIONS

On 30th June, 2016, the United Nations Human Rights Council passed a groundbreaking resolution establishing a new independent expert to investigate human rights violations against LGBT individuals worldwide. This proposal, which faced major opposition from culturally conservative member states, marked the first time that LGBT rights were formally institutionalized into the human rights mechanisms of the United Nations. However, while this resolution marked a rousing victory for the LGBT cause, the current system of international human rights law does not include specific provisions aimed towards the protection of the rights of LGBT individuals, who face persistent discrimination on the world stage. This presentation will examine the current state of international human rights law in relation to the protection of LGBT individuals, and will demonstrate, through the use of case studies from the European Court of Human Rights, that the lack of explicit language in the International Bill of Human Rights and similar legislation has contributed to a disturbing trend of ongoing discrimination, and that further treaties must be drafted to ensure that members of the LGBT community are afforded the rights that they are owed.

Cambios: The Rise of Mauricio Macri

ADAM DOHRENWEND

FACULTY SPONSOR: KARLEEN WEST, POLITICAL
SCIENCE & INTERNATIONAL RELATIONS

Argentina's 2015 presidential election ushered in a tsunami of change at Casa Rosada. Mauricio Macri was elected President of the Argentine Nation--the first democratically-elected non-Radical, non-Peronist President since 1916 (Morss, 2016). Macri's advantages in his native Buenos Aires combined with factionalism within Peronism and fatigue with the leftist Peronist flavor called Kirchnerismo all factored in his historic ascendance to the Presidency. Without garnering support from disillusioned lower-class Peronists whose faction was eliminated in the first round, Macri's victory would have been impossible. Using GIS, statistical analyses, and regional case studies, this complicated election and various socioeconomic indicators at the regional and provincial level will be dissected in order to illustrate the importance of the anti-Kirchnerismo Peronist vote in Macri's winning runoff formula.

1U • HISTORY STURGES 109 Research in Gender and Sexuality History I

FACULTY SPONSOR AND SESSION CHAIR: RYAN
JONES, HISTORY

Modern City, Vice City: Workers, Sexuality, and Social Control in Interwar Detroit

EVAN GOLDSTEIN

The Paper explores working-class culture in Detroit in the interwar period (between roughly 1918 and 1942). The essay examines the relationship between the working-class in Detroit and the city's unparalleled expansion under industrial capitalism beginning around 1920. This industrial growth led to Detroit's rapid urbanization, and reorganized the city along a class-basis (a change from early Detroit's ethnically-separated family neighborhoods). This reorganization, in turn, led to the birth of a working-class culture that encouraged social and sexual freedom, allowed spaces for the development of a "gay" culture, resisted bourgeois notions of gender and sexuality which were forming at the time in Detroit and in America at large.

The Queen City: The Progress of Prostitution within the City of Buffalo during the Late 19th and Early 20th Centuries

DEREK KACZOROWSKI

This paper examines the City of Buffalo's economic and societal development in relation to the city's actions towards prostitution. As the city continued to develop throughout the early 1900s, societal groups and city law enforcement increasingly stifled the expansion of Buffalo prostitution. This paper argues that Buffalo's repressive actions against prostitution occurred because vice imparted an underdeveloped, and immoral image upon the city and its peoples. Citizen initiative was the determinative factor that induced productive prostitution reform within the City of Buffalo. The paper presentation can include a brief examination of the development of Buffalo, the creation of Buffalo vice districts, and the passive regulation of vice by city officials. The presentation will focus on the expansion of prostitution within Buffalo, and the consequential social crusade to suppress the immoral stain. The institution of prostitution was not a threat to the city of Buffalo; prostitution demoralized the image of the developing city.

From the Shtetl to the Streets: Transforming Jewish Womanhood on the Lower East Side, 1890-1925

ISABEL OWENS

Turn of the twentieth century Lower East Side, Manhattan lives classically in the Jewish-American imaginary as a mystic "Jewish place." The Jewish woman, by incorporating both modernity and traditionalism, transformed herself and the place around her. How did the Lower East Side create a space to both shape and defy notions of Americanization and secularization of the working-class, first generation Yiddish family? Through the eyes of mothers, daughters, and popular representations of each, this paper traces the story of the New Jewish Woman of the Lower East Side and seeks to nuance her. *Selected for presentation at Phi Alpha Theta Western New York Regional Meeting, Brockport, NY.*

1V • SOCIOLOGY BAILEY 204 Sociology of Emotions

FACULTY SPONSOR AND SESSION CHAIR: STEVE
DERNE, SOCIOLOGY

State Terror: How Totalitarian States Control The Emotions of Citizens

DAYNER HACKSHAW

In *Darker than Midnight: Fear, Vulnerability, and Terror Making in Urban Burma (Myanmar)*, Monique Skidmore discusses how the government of Burma sponsors fear in their citizens. This is done through violence and propaganda, which makes the people of Burma unable to fight back due to fear. The reading neglects to talk about other possible emotions that the state may also create. Initially, my question asked if state sponsored fear may also lead to feelings of unity among the citizens. After doing research on North Korea, another totalitarian state, I found that depending on the duration of the totalitarian state, citizens may not be able feel other emotions aside from fear.

Meditation in a Group: Emotional Effects

SHANNON MAHONEY

Mukerjee (1937) states that meditation is a solitary act in which the participant enters a state of disconnect from their surroundings and looks inward. He also states that meditation leaves the participant in a state that is void of all emotions. I studied the effects of meditation in a group setting--specifically looking into the emotions and emotional connections with the other members of the group that was meditating. To study this, I used sociological introspection. I participated in a group meditation and journaled about the experience, and then participated in meditation by myself and journaled about it. I then looked at both journals and compared the results to see if there was a difference in the emotions I experienced during the solitary meditation and the group meditation. I found that there was no difference between meditating alone and meditating with a group--neither settings produced emotions of any kind.

The Ability of Group Meditation to Facilitate Emotions

EMMA GERROL

This study is based on Mukerjee's proposition that meditation is a solemn experience in which emotions transcend the person practicing; but it neglects to address the possibility that emotions are in fact involved in meditation, especially when the meditation is practiced in a group setting. The method applied to answering this question was meditating as a group and observing my own feelings during and after the meditation. The results of this study indicated a slight difference in emotions including: relief from life's daily stressors, a feeling of calmness, and a feeling of accomplishment caused by successful practice of meditation. However, my group members and I did not experience a feeling of emotional connection to the other group members, as we had predicted there would be. This study allowed us to look deeper into the emotions involved in meditation and the possibilities to heighten those positive

emotions as well as whether it is possible to experience an emotional connection without actually speaking to other people, but simply by sharing an experience.

The Difference in Emotional Effects Elicited by Communal Meditation Compared to Solitary Meditation

GIOVANNA DONAHUE

In her book, *Deep Listeners* Judith Becker discusses the act of meditation. She explains that meditation is supposed to be done in solitude, silence and stillness in order for an individual to be freed of emotions. She does not address the effects of meditation in a group setting rather than in solitude. This study aims to address the difference in emotional responses and emotional connections provoked by communal meditation versus solitary meditation. I used sociological introspection to test this difference. I participated in a communal meditation followed by a solitary meditation a few days later. Each meditation held Becker's factors constant, except for being in solitude. After each meditational experience, I documented my emotions and then analyzed them. After comparing and contrasting the difference between the two emotional experiences, I found that communal meditation had a more positive emotional response compared to solitary meditation and feelings of emotional connectivity to others were increased during communal meditation compared to solitary meditation.

1W • LANGUAGES AND

LITERATURES

BAILEY 105

Spanish in the US: The Acquisition and Use of Spanish in Educational Contexts

FACULTY SPONSOR AND SESSION CHAIR:
CHRISTINA AGOSTINELLI-FUCILE, LANGUAGES
AND LITERATURES

Special Education and Language Learning: Why We Should Give Students with Disabilities the Opportunity to Learn a Second Language

HANNAH MILLICH

Students with disabilities often do not receive the opportunity to study a second language while students without disabilities do. This paper examines why students with disabilities do not often have the opportunity to learn a second language. It explores the various reasons why students with disabilities haven't been placed or been able to take a foreign language class in their education. These students have a difficult time being accepted and it is said that foreign language is the environment of acceptance that would benefit these students in schools (Wight, 2015). My findings showed that there were no cognitive differences between the students with disabilities and the students without disabilities in a foreign language classroom (Sparks, 2006). Based on this finding, there are still no students with special needs sitting in a foreign language classroom. I will discuss important techniques and recommendations that teachers can use to support

these students in their foreign language classroom to make them successful. Teachers have already implemented accommodations and modifications when they try having a student with special needs in their classroom (Kleinert, 2007). This paper seeks to raise awareness of how vital giving the students this opportunity is.

Spanish-English Bilingual Education in the United States

ELENA BEIDECK

While the advantages and disadvantages of different educational models at times remain opaque, the problem is clear: there are significant educational disparities between native speakers of the majority language -- in this case, English -- and native speakers of minority languages -- in this case, Spanish (Hamilton, 2006). The current body of literature on this subject indicates that the suggestions that bilingual education may impede English learning are largely unfounded (López, 2006), and that bilingual education programs may improve academic performance (Marian, Shook, & Shroeder, 2013). Beyond strict measure of academic achievement, other important yet subjective factors, such as personal identity development, self-confidence, and bilingualism, are favored by bilingual education programs (Lindholm-Leary & Borsato, 2001). Current literature indicates that the model which best supports development of this characteristics is two-way bilingual education (López, 2006; Lindholm-Leary & Borsato, 2001). However, a significant issue in this study is the lack of a standardized way in which to compare the different models, and different researchers use different definitions of "bilingual education." Considering these issues, this paper suggests ways in which parents can evaluate these programs in order to choose the most effective program for their children's education.

Linguistic Ideologies of Spanish/English Code-Switching in Schoolchildren in the U.S.

MARISSA CASSARO

This presentation investigates the linguistic phenomena of code-switching and the variety of ideological and scholarly responses to its place in the education of Spanish-speaking schoolchildren in the United States. Code-switching is the use of two languages in one sentence and/or conversation. It is used to mark a change in topic, for emphasis, for clarification or translation, and for direct quotations (Escobar, 2015, p.119). According to Becker (2001) and Reyes (2004), children who use code-switching have greater sociolinguistic competencies, greater vocabularies in both languages, and strong cultural identities. On the other hand, Martinez (2009, 2013) found that as a result of community-based stigmas against code-switching, some students perpetuate dominant ideologies that switching from English to Spanish represents a deficit rather than a bilingual ability. Accordingly, it is important to entertain the possibility that students have different social forces that contribute to whether they use code-switching in school contexts. Future research should focus on individual tendencies of the students in various contexts and it should include information about the linguistic ideologies that

teachers maintain because this information may explain or support the students' ideologies. Moreover, this information can be used to educate teachers about the benefits of this practice in their classrooms.

Factors Affecting the L2 Acquisition of the Spanish Vibrants <r> r: Age of Acquisition, Learning Contexts, and Linguistic Background

MARIA PRIORE

The critical period hypothesis (CPH) of linguistics postulates that there is an ideal age range during which individuals are most prepared to acquire languages (Hakuta et al., 2003). Prior research on this subject has found that factors including country of origin, age at migration, similarity of mother tongue to L2 (Chiswick & Miller, 2007), amount of formal language instruction, residence in a host country, student's prioritization of pronunciation (Shively, 2008), usage of L2 in class and outside (de Carli et al., 2015), motivation for L2 acquisition, and socioeconomic factors (Gursoy, 2011) can have an equal or greater impact on L2 learning than age of acquisition (AoA). Does AoA have a meaningful effect on L2 Spanish pronunciation? This study examines the factors that affect the acquisition of [r r] by evaluating the production of these consonants by 93 university students from a range of Spanish ability levels. Participants also filled out a background questionnaire regarding language acquisition factors and linguistic background. This presentation will discuss the results of a statistical analysis of correlation between the accuracy of production of [r r] and the factors that affect pronunciation, with a focus on AoA and exposure to pronunciation through instruction or social interaction. *Selected for presentation at National Conference of Undergraduate Research, Memphis, TN.*

1X • MATHEMATICS SOUTH 328

Topics in the History of Mathematics 1

FACULTY SPONSOR AND SESSION CHAIR: GARY TOWSLEY, MATHEMATICS

Introducing the Riemann Hypothesis: The Puzzling Primes

ROBERT TUMASIAN

The Riemann Hypothesis is one of the six remaining Millennium Prize Problems that has yet to be proven. The hypothesis offers insight on the distribution of the prime numbers, and specifically links the zeros of analytic functions and the primes in a linear manner. This presentation will serve as an introduction to the Riemann Hypothesis, and preliminary theorems and conjectures necessary to investigate the mysterious primes. This includes the definition of a prime number, the Prime Number Theorem, the Zeta Function, the Möbius Function, and related material. Proof of this hypothesis would completely alter the foundations of cyber security and international banking systems that highly depend on prime number patterns for protection.

Hamilton: Not the Musical

MARGARET MALONEY

In 1843, Sir William Rowan Hamilton, an Irish mathematician from Trinity College, Dublin, discovered a non-commutative number system that extended the complex numbers into three dimensional space. The following is the exploration in Hamilton's discovery of the quaternion and laws of the symbol and how they obey algebraic properties: including sums or differences, multiplication, distributive property, powers, roots, and logarithms.

A Glimpse at Bayes' Theorem**ASHLEY MORAN**

Bayes' theorem allows one to predict the likelihood of one event occurring given the probability of another event having happened. It commonly appears while studying probability and statistics. From its origins in the early 18th century, the theorem has been utilized and developed for use in many fields. I will give a brief background on Thomas Bayes, Bayes' theorem, and discuss its modern use.

Patronage in 17th Century Europe: How Tycho Brahe Influenced Johannes Kepler's Research**DANIEL WOLFANGER, MAUREEN HENRY**

This presentation will explore how Johannes Kepler's personal research was affected by Tycho Brahe's patronage of Kepler. In addition it will show how the countries that they chose to do their research in directly influenced the availability of resources to them during the Protestant Revolution. Johannes Kepler had a background in mathematics and science, particularly, the computational aspect of science. Brahe on the other hand worked with direct observation and theory. In 1600, Brahe was in Prague due to his commitment to the court of the Holy Roman Emperor, Rudolf II. When Brahe and Kepler met in Prague, Brahe was in conflict with his patron; the king of Denmark. Moreover Brahe hired Kepler as an assistant, and their combined efforts allowed both to expand their research. After Brahe's death in 1601, his connection with Kepler helped enable Kepler to continue to build on and revise Brahe's

research until he finally refuted Brahe's initial thesis and discovered his own Laws of Planetary Motion.

1Y • EDUCATION NEWTON 204**Using An Authentic Literacy Approach To Teach Students With Disabilities**

FACULTY SPONSOR: BRIAN MORGAN, EDUCATION
SESSION CHAIR: KELLI PANARA

Using Literacy to Teach Independence**KELLI PANARA, VIRGINIA ELEY, JORDON MCKINSEY**

This presentation will focus on how literacy instruction should be formulated for adults with intellectual and developmental disabilities. It will discuss the limited amount of research currently available on the topic and how the available research has advocated for the students to have more exposure to literacy experiences. The presentation will discuss the findings from peer-reviewed research articles to provide evidence for strategies and methods that have proven effective for teaching students with disabilities. It will provide suggestions for educators on how literacy instruction should be formulated for adults with disabilities. Lastly, the presentation will focus on the implementation of a Literacy Magazine into a classroom setting to create an authentic approach to instruction when teaching adults with intellectual and developmental disabilities. The magazine will be available to view during the presentation while two students from the L.I.V.E.S. program share their work as well as the works of their peers.

1Z • WOMEN'S AND GENDER STUDIES WELLES 24**Women's and Gender Studies: Gender in Film and Gaming**

FACULTY SPONSOR AND SESSION CHAIR: MELANIE BLOOD, ENGLISH

The Politics of Gender and Sexuality in Modern Film**RACHEL CRAIG**

This project is an in depth look into how the rating and censorship of modern film works to show and support only certain representations of gender and sexuality. Because of these monitoring mechanisms, the general public faces barriers to consuming diverse material that presents lifestyles counter to accepted and traditional ideologies concerning gender and sexuality. There will be a specific focus on film from 1990 to now.

Repealing the Hays Code: Black Activism and the Pursuit of Representation**LIZ KUZMAN-MCRAE**

Kuzman-McRae is studying the legacy of the Hays Code during the golden age of Hollywood. She gears her research toward miscegenation laws and the lasting impact they may have.

Sci-fi, Feminism, and Queer Theory**THOMAS MCCARTHY**

McCarthy explores the history of Sci fi films in relation feminist film theory to determine what ways visions of the future imagine womanhood, bodies, sexuality, and humanity in different and even liberated ways.

In Search of Sliders: Gender and Character Creation in Video Games**NICOLE PERO**

How does the protagonist of a video game and their gender affect the player's experience? Is it really possible for players outside the gender binary to reach verisimilitude with their protagonists? These are the questions Pero will be trying to answer across many contemporary games.

CONCURRENT PRESENTATIONS 2 • 9:55 AM – 11:10 AM**2A • HISTORY & CIDD BAILEY 204
Ambassador/History**

KARIE FRISIRAS, CENTER FOR INQUIRY, DISCOVERY AND DEVELOPMENT

Frankenstein's Review**BRENDAN MAHONEY**

FACULTY SPONSOR: JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

The publishing industry (and to an extent the culture industry as well) is an entirely selfish place. Authors are used by publishers to bolster the reputation of their magazine and publications are used by authors to bolster the reputation of their own writing. Frankenstein's Review is an experimental multimedia magazine that has been created over the course of the past year to address

this selfishness. Thanks to the Geneseo Student Ambassadorships, an online magazine was successfully built, submissions were successfully received, and an issue was successfully cobbled together with the express goal to, in simplest terms, not be selfish. This presentation will be one part discussion of the culture industry, one part blueprint of the magazine's creation, and one part successes and failures from the endeavor. This project is supported by the Geneseo Student Ambassador Program.

2B • BIOLOGY & MATHEMATICS 1 ISC 131

FACULTY SPONSOR AND SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY
FACULTY SPONSOR: CHRISTOPHER LEARY, MATHEMATICS

Modeling the Transmission and Dispersion of Syphilis in California**EMMA BODE, MATTHEW BRENNAN, CAMRYN LIEB, ALIDA MOONEY, SYDNEY NG**

Syphilis is a sexually transmitted infection (STI) caused by the *Treponema pallidum* bacterium. This STI is passed through direct contact with symptomatic sores and remains an issue unless successfully treated with antibiotics. Left untreated, it can progress through four distinct stages and may result in serious health problems such as damage to internal organs and eventually death. Data for cases of syphilis in the United States indicated an increase in syphilis contraction in the past two decades. Using these data, we modeled the spread of syphilis in a contemporary system in California using a difference equation model and then analyzed the effect of various

prevention techniques on disease transmission. In addition, we made a bipartite network model to simulate heterosexual transmission of the *T. pallidum* bacterium and a lattice network model to simulate transmission through time and space. We were able to determine the susceptible population threshold and a critical number of sexual partners in a population for the breakout of syphilis.

Modeling the Cholera Outbreak After the 2010 Haiti Earthquake

JUSTEN GEDDES, MEGHAN PRUSINOWSKI, JENNIFER ROWAN, JOSEPH TADROS

On January 12, 2010, an earthquake in Haiti devastated the country. Following the earthquake, damaged infrastructure and contaminated waters aided in the spread of cholera to epidemic levels. It was determined that a peacekeeping volunteer who entered the country was the initial vector for *V. cholerae* that led to the epidemic. By 2011, the epidemic had reached the peak number of recorded cases in Haiti. We created models to understand the dynamics of the spread of cholera for this outbreak. We used multiple data sets from papers to create continuous, network, and discrete models. We then tested the variability of several of these parameters by completing error propagations. Our models suggest that if responding organizations had taken different actions, the epidemic could have been better controlled. Understanding models such as these can help to explain the spread of cholera and aid in the implementation of preventative measures for future epidemics.

Describing the Dynamics of Schistosomiasis Transmission through a Deterministic Model

ZACHARY KOENIG, ALEXANDER DECKER, JEFF DOSER, KYLE FLETCHER

Schistosomiasis is globally the second most debilitating human parasitic infection. *Schistosoma* is a genus of trematodes which comprises the causative agents of Schistosomiasis. Schistosomiasis spreads to humans through skin contact with contaminated fresh water in tropical and subtropical areas. We developed a compartmental model that includes human hosts, intermediate snail hosts, and the free-living reproductive stages called cercariae and miracidia. Using a system of differential equations we modeled the life cycle and transmission of *Schistosoma*. Our model takes into account factors such as density-dependent birth rates and reduced fecundity of snail hosts that make it more realistic. We explored how transmission dynamics change with differing prevention methods; including the introduction of clean water to high-risk human populations, regulation of snail populations, and the use of preventative chemotherapy on affected populations. By understanding the life cycle of *Schistosoma*, we compared the effectiveness of these treatment methods. Our model suggests that with the introduction of these preventative measures Schistosomiasis transmission rates will decrease.

Analyzing the Spread of Human Papillomavirus Using Difference Equations and a Network Model

ALLIE DANANBERG, DIANA DEFILIPPIS, IAN HENEY, MEGAN PRESTON

Human papillomavirus (HPV), is an infection spread through sexual contact. HPV is the most prevalent sexually transmitted infection globally, with over 150 genotypically different strains. Persistent HPV can cause pre-cancerous lesions that increase the risk for particular types of cancer, most notably cervical cancer. HPV cannot be treated. However, the body's immune system resolves most cases within 1-2 years. Some strains can be prevented via vaccination if administered prior to exposure. Not only does vaccination have the potential to reduce HPV risk, but also help reduce cancer incidence as a result, making HPV prevention an advantageous area of study. The main objective of this study was to model the spread of HPV as a consequence of human relations. Based on the biology of HPV, we developed an SEIRV (susceptible-exposed-infected-recovered-vaccinated) model to compute the dynamics of the spread of the virus both with and without vaccination. A network model was also created to analyze HPV transmission in a more realistic and controlled setting by incorporating the nuances of a social network. The results of these models were compared to develop a more comprehensive understanding of the spread of human papillomavirus and to analyze the efficacy of vaccination in reducing its spread.

2C • SOCIOLOGY BAILEY 104

Black Lives Matter: The Color of Justice in the United States

FACULTY SPONSOR AND SESSION CHAIR: DENISE SCOTT, SOCIOLOGY

Mass Incarceration or Modern Day Slavery?

RACHEL CRONEN

The targeting of black males for mass incarceration has been described as a human rights nightmare. This systematic oppression of young black men can arguably be considered a form of modern day "slavery," which, according to Michele Alexander, is defined as a condition compared to that of a slave with respect to exhausting labor or restricted freedom. The racial-caste system, criminality of young black men, politics, and the media all contribute to the seemingly never-ending issues of racial inequality and injustice in America. This paper examines the criminal justice system and how it maintains a racial-caste system in the United States; more specifically, it looks at the construction of "criminality," the practices and politics of policing, the media, and wealth and power. It argues that the criminal justice system, all of its moving parts, and its supporters are to blame for the current problems of mass incarceration, not the victims of systemic racism. This paper further discusses potential ways to stimulate change, such as "crashing the system."

The Narrative of the Media and Mass Incarceration

ZAKIYA ROSE

This paper explores the perceptions of black people, especially black men, in the American media and how these perceptions affect the treatment of blacks in the justice system and the black community as a whole. In The United States

it is the media that is the main power holder. Whoever has control over the media, controls the narrative the media can give to a specific group of people. For blacks, this is extremely dangerous and detrimental. This paper more specifically explores the older, more obvious racist narratives about blacks with the production of *The Birth of a Nation* in 1915. It also examines the negative narrative framed and used by the media with regard to civil rights leaders and the Civil Rights Movement during the 60s, and the seemingly innocent but very dangerous "colorblind" narrative the media currently uses for race relations. The paper also explores how the rise of social media gives a voice back to the black community. Social media puts power into the hands of those who choose to use it. It allows people to form new narratives about themselves and other groups of people without being swayed by the opinions of the power elite.

African American Women and Mass Incarceration

NELLIE BLACK

The "War on Drugs" has functioned for the past several decades as a means of legalized segregation. This campaign has disproportionately targeted African American men and has systemically isolated them from mainstream society through a system of mass incarceration. As with many social issues, women have been left out of our understanding of this problem. Although not in the forefront of the political discussion, African American women have been disproportionately affected by the system of mass incarceration through their connections to incarcerated men and through their own incarceration. Large populations of men have been removed from families and communities as a result of their mass incarceration, leaving African American women alone to manage families while also generating income. Moreover, the "War on Drugs" has also put large numbers of African American women in prison for nonviolent drug offenses, which has both social and economic long-term effects. This paper focuses on the social and economic ways in which African American women have been uniquely and disproportionately impacted by the system of mass incarceration.

Mass Media and Its Effects on Social Movements

DYAMOND SLATER

This paper examines how the formation of social movements is affected by mass media in America. It analyzes how mass media influence both modern day movements as well as ones that occurred during the Civil Rights Era. More specifically, it seeks to build a connection between the two time periods by examining the language used by the media and their portrayal of social movements to the public. Furthermore, it also examines how this connects more broadly to race and power in America. The particular social movements that are highlighted in the paper are Black Power/The Civil Rights Movement and The Black Lives Matter Movement.

2D • BUSINESS SOUTH 340
Impact of Managers on Employee Job Performance

FACULTY SPONSOR AND SESSION CHAIR: AVAN JASSAWALLA, BUSINESS

The Impact of a Manager's Emotional Intelligence on Organizational Citizenship Behavior (OCB) of Followers/Employers

HOPE RINALDI, JOSEPH BARILE

This presentation summarizes the key findings on how a manager's emotional intelligence plays a major role on the Organizational Citizenship Behavior (OCB) of their followers and employees. Based on the findings of our research, we discovered managers with a lower emotional intelligence did less self-reflecting and had employees that were less motivated in the workplace. Therefore, we recommend implementing more programs in emotional intelligence training for managers at work due to its high correlation on the OCB. As a manager, knowing how your Emotional Intelligence affects your employee's Organizational Citizenship Behavior will allow you to improve the psychological and social setting of the workplace. A workplace where employees have closer relationships with each other is likely to produce greater job satisfaction and performance. Emotional Intelligence is a measure of how well individuals can perceive, understand, and manage their own emotions, as well as the emotions of others. Having a high Emotional Intelligence has been found to increase employees' Organizational Citizenship Behavior. In order to maintain a positive environment where job performance is maximized, managers will need to increase their Emotional Intelligence.

Impact of Cultural Values (Hofstede's Dimensions of Culture) on the Link Between Job Satisfaction and Job Performance

ANH MAI, ARIANNA BORRIELLO, MEGAN HERRICK

This report provides insight on how businesses can become more globalized and be able to work efficiently with people from different cultures around the world. Based on Geert Hofstede's cultural dimensions, we will discuss how cultural values have a tremendous impact on job satisfaction and job performance depending on where you are in the world. We have also included recommendations for managers in various parts of the world.

The Impact of Managers Social Influence Tactics on Subordinate/Employee Job Performance

LAURA RICCI, CASSANDRA IACONO, KIARRA MONROE

This topic focuses on the methods or tactics used by managers which positively influences individual employees in ways that make them more productive in the workplace. We reviewed the existing literature and found that: (a) managers use different social influence tactics to increase employee productivity and job satisfaction, (b) these tactics by managers differ according to their

industry and must be adapted to fit employee needs, and (c) subordinates/employees are impacted by their managers'/boss' social influence tactics in a variety of ways. These findings hold implications for improving employee relations and work performance. Our presentation will provide further details of our findings and recommendations to managers and organizations on this important topic.

Impact of Employee's Perception of Fairness on Employee's Job Satisfaction

MICHAELA OMECINSKY, RACHEL CHOU, BRENNAN MACEY, MATTHEW BRYK

An employee's perception of fairness on their job satisfaction is a relevant topic for management to understand. Our first topic of research was the effect of performance appraisals on employee's job satisfaction. Fair and collective performance appraisals assist management in understanding employee's work habits. Our next topic of research was the effect of dissatisfaction on employee turnover and retaliation. Management aims for low levels of employee turnover and retaliation, to limit the waste of company's resources. Our final topic was an employee's perception of fairness on job stress and its effect on job satisfaction and performance. Management should seek to lower job stress because it prevents productivity in employees. An understanding of employee's perception of fairness on job satisfaction can help management create a more positive and productive work environment for all employees.

2E • BUSINESS SOUTH 338

Economic Problems: Income Inequality, Labor Force Participation, Expropriation, Welfare and Crime

FACULTY SPONSOR AND SESSION CHAIR: LEONIE STONE, BUSINESS

The Effect of Unconventional Monetary Policy on Income Inequality in the United States

VICTOR LAZARTE

The steady increase in income inequality since the 1980s has focused attention on the causes of that inequality, including the effects of government and central bank policies. Various studies have shown small impacts of monetary policy through a variety of channels, particularly portfolio effects. In this study, I focus on the contribution of unconventional monetary policy to income inequality in the United States. I first estimate GINI coefficients from BLS household survey data, and then use this data to estimate the effects on income inequality of the rounds of quantitative easing that followed from the initial shocks of the global financial crisis. While the implementation of unconventional monetary policies is a recent tool and the full scope of its effects will take many years to realize, initial results confirm reasons for concern. *Selected for presentation at Eastern Economic Association, New York, NY.*

Expropriation and Growth in African Economies, 1975-2015

MATHEUS FALIERO

This paper examines the historical relationship between economic growth and uncompensated expropriation in developing African countries. The general consensus is that states on the African continent experienced economic stagnation or decline in the post-independence period in part due to the common practice of domestic government takeovers of foreign-owned assets. Additionally, it is believed that only after the end of these expropriations were governments able to attract foreign investment in order to bring about income expansion. I compile a series of datasets recording expropriations, which collectively span a period from 1924 to 2016. This combined dataset is used to evaluate the impact of expropriations on short- and long-term economic growth in these countries. *Selected for presentation at Eastern Economic Association, New York, NY.*

Examining the Persuasive Power of Welfare Benefits Using the 1996 Personal Responsibility and Work Opportunity Act

DANIEL MAGGIO

On August 22nd, 1996, President Bill Clinton signed into effect the Personal Responsibility and Work Opportunity Act as part of the Republican Congress' Contract with America. The bill included a provision that imposed a lifetime ban on the granting of food stamps through federal SNAP and TANF benefits for anyone convicted of a drug felony. Effective July 1st, 1997, the bill included a state opt-out option, which also allowed for modifications. This has created a disparity between states, creating an opportunity for decomposition of the effects that the ban has had on crime. Using the between-state variation of the ban by year, as well as the FBI uniform crime reports, I find that the ban is associated with roughly a 1.5 percent decrease in drug crime. Furthermore, I find that this decrease has increased in magnitude as time has passed since implementation of the law. Finally, I also find that the effects of the ban have spillover influence on the rates of both property crime and violent crime. *Selected for presentation at Eastern Economic Association, New York, NY.*

Using Social Variables to Explain the Shifting Male Labor Force Participation Rate in Europe

JUSTIN FISCHER

For over four decades, the male labor force participation rate (LFPR) has been declining in advanced economies around the world. For most of that same period, the female LFPR has been increasing, which has largely offset that decline participation. However, female LFPR has since stagnated, and women are no longer a reliable source to replace the declining number of males working, and thus overall participation is falling. In the U.S., the prime-age male participation rate declined from 82.7% in 2000 to 77.4% in 2014. Some of this decline can be attributed to technological change and associated increases in structural employment, which eventually lead to exit from the workforce. However, other factors,

such as the health and social habits of the workforce, may play a role. I consider the prime-age male participation rate in a number of European countries and relate falling participation to changes in disability rates and education, among other related variables, to better explain the similarities and differences in these trends across advanced economies. *Selected for presentation at Eastern Economic Association, New York, NY.*

2F • EDGAR FELLOWS MISCELLANY 5 BAILEY 102

SESSION CHAIR: DAVID LEVY, PHILOSOPHY & EDGAR FELLOWS

Towards an Epistemology of Gender Identity

JESSICA HEPPLER

FACULTY SPONSOR: AMANDA ROTH, PHILOSOPHY
Most attempts at defining gender identity result in the circular definition, "the gender that you identify with." I attempt to escape this circularity by offering a philosophical account of what it is to know one's own gender identity. In defending an intuition-based view of gender identity, I hold that intuitions reflect our personal mental concepts, each of which have certain satisfaction conditions for whether something belongs to a kind like "cat" or "sandwich" or "human." Although our intuitions about what counts as a certain kind are mostly uniform, our intuitions about the conceptual boundaries of other kinds like "knowledge" or "man" are more variable. Such interpersonally variable intuitions are valuable by virtue of their ability to illuminate contentious conceptual boundaries, such as those surrounding "woman" or "man." I argue that an intuition-based understanding of gender identity illuminates some of the satisfaction conditions that drive individuals to identify as one gender or another. Further, I explore the social and political forces that shape our gender concepts and discuss the potential for these concepts to subvert or reinforce existing gender stereotypes.

Formula for Change: Methods of Successful Activism

THOMAS MCCARTHY

FACULTY SPONSOR: ALICE RUTKOWSKI, ENGLISH
My project is an analysis of effective methods for change on college campuses primarily dealing with activism related to LGBTQ+ students. I begin the paper by asking if there is a methodology for effective activism, and then I use that model to explore my own activism as well as other activism done on the campus and elsewhere. The end result will be both a traditional-multidisciplinary paper as well as a PDF guidebook for other collegiate activists.

These Invisible Landscapes

EVAN GOLDSTEIN

FACULTY SPONSOR: LYTTON SMITH, ENGLISH
In the summer of 2016, as part of an Ambassadorship of Innovation, I took an eight-week drive across America, through its highways and backroads, cities and small towns. I sought to begin a process of exploration--of seeing and documenting--that would allow me to create a document of social conditions in our time. Though I only scratched the surface of the vast American

landscape, I met people and saw places that showed me the complex evidence of social upheaval, economic devastation, and uneven redevelopment that has washed back and forth across America for decades. These poems are an excerpt from the document I'm working to create: an extended interrogation of how to look at America, how to look at ourselves, at what stories, what struggles, lay just below the surface of landscapes we all pass through--and how we might wake from these nightmares of history. This project is supported by the Geneseo Student Ambassador Program.

2G • EDGAR FELLOWS MISCELLANY 6 BAILEY 103

SESSION CHAIR: LISA MEYER, SOCIOLOGY & EDGAR FELLOWS

Kodak and the Deindustrialization of Rochester

JOSHUA DEJOY

FACULTY SPONSOR: KATHLEEN MAPES, HISTORY
This paper examines the role that the decline of the Eastman Kodak Company played in the deindustrialization of the city of Rochester, New York. In this paper, I examine deindustrialization in general, including how historians have studied it. I then briefly assess how and why Kodak declined, and compare this to the historical understanding of how deindustrialization "usually" progresses, through both historical monographs and government data, among other sources. I also examine the effects that the decline of Kodak and deindustrialization of Rochester more broadly have had on workers in the Rochester area.

The Eurasian Union

MARIA GERSHUNI

FACULTY SPONSOR: ROBERT GOECKEL, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The idea of the Eurasian Economic Union, or the EEU, was first brought up by Kazakhstan's President Nursultan Nazarbaev in 1994. By 2015, the Russian Federation, Belarus, and Kazakhstan signed the Treaty for the Establishment of the EEU, making the idea a reality. The EEU currently occupies nearly 15% of the earth's land, and is the 12th largest economy in the world. However, very little is known about this integration project. Criticized as Russian President Vladimir Putin's pet project, and a hollow imitator of the European Union, the EEU now faces challenges of imbalance, inequity, and further integration. However, the economic bloc is poised to expand, with talks of incorporating Iran and Turkey into the Union. With the European Union weakened by this summer's Brexit, the question remains whether the EEU will take the opportunity to expand into new spaces or whether integration projects all around the world are stalled in the anti-integration political environment. Looking at the history, politics, and possibilities for the EEU, this analysis will examine the nuances of this largely unstudied organization and predict its future.

From Sea to Holy See: Pope Francis and The Catholic Church as a Transnational Actor in International Relations

ELIZABETH MESSANA

FACULTY SPONSOR: ROBERT GOECKEL, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The latter half of the 20th century bore witness to a dramatic rise in international cooperation, a trend that has carried into the 21st century as well. This rise of interdependence in the international system has accorded a particular category of actors - transnational actors - a much more influential role in the social, economic, and political affairs of the global system. This presentation addresses the impact of one of the oldest of these actors and one with renewed influence, the Catholic Church. Through uniting over one billion individuals under a common belief system, maintaining open communication lines, and actively supporting its grassroots with finances, resources, and personnel, the Catholic Church has been able to maintain an active presence among many sovereign states, which may have critical implications for their foreign and domestic policies. Furthermore, as the current head of this actor, Pope Francis directly influences international affairs. In his time as pontiff, Pope Francis has pushed the role further. His active stance on several international issues, including global warming, human rights, and the refugee crisis, all exemplify a more activist role in incorporating the Church's values into global policy.

2H • EDGAR FELLOWS MISCELLANY 7 BAILEY 202

SESSION CHAIR: AARON STEINHAEUER, PHYSICS & ASTRONOMY

UBVRI Photometry of the Open Cluster M67

JOSHUA GALLARO

FACULTY SPONSOR: AARON STEINHAEUER, PHYSICS & ASTRONOMY

We present a five-color photometric analysis of the open cluster M67. Hundreds of images, taken with the WIYN 0.9m telescope were processed and individually reduced, finding and measuring the brightness of every object in every frame. Point-spread-function (PSF) algorithms were used to map the shape of each frame's light distribution, which were then applied to every star in the frame. There are five different filters and five different exposure lengths, with a frame for each combination per sky region. These data were combined into a single catalog, calibrated using Landolt standards taken on the same night. Cluster parameters such as distance, age, metallicity, and reddening were then determined from the resulting color magnitude and color-color plots. This project is part of a larger effort known as the WIYN Open Cluster Study (WOCS), a collaborative effort of astronomers to establish a standard database of open cluster photometry, astrometry, and spectroscopy.

The Effect of Anthropogenic Noise on Insect Communication

MICHELLE MARKOWITZ

FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY
For many organisms, a limiting factor in reproductive success is the ability to send and receive acoustic signals. This form of communication is being threatened by noise pollution. Research on acoustic communication can provide examples of how organisms adapt to

changing environments. Significant contributors to anthropogenic noise are roads, making roadside environments commonly studied areas in bioacoustical research. The first part of this study explores the relationship between background noise level and calling characteristics of the Short-winged Meadow Katydid (*Conocephalus brevipennis*). The second part of this study analyses the change in the calling characteristics of House Crickets (*Acheta domestica*) when artificial road noise is added in a controlled lab setting. In addition to the ecological and conservation aspects of this research, results could potentially provide evidence for the occurrence of microevolutionary changes taking place in these species as a consequence of human behavior.

The Role of Plant Respiratory Burst Oxidase Homologs (Rboh) in Susceptibility of *Brassica rapa* to *Botrytis cinerea* Infection

ADAM WEGMAN

FACULTY SPONSOR: MING-MEI CHANG, BIOLOGY

The first-line plant defense against pathogens is the hypersensitive response (HR), which results in cell death localized to the site of infection. Though being an effective mechanism against obligate biotrophic pathogens, the cell death response makes the plant vulnerable to necrotrophic pathogens including *Botrytis cinerea*, which utilize dead plant tissue as their food source. Necrotrophic pathogens can be major threats to important crops, such as rice, underscoring the need to understand the processes that govern cell death during infection. Previous studies have shown that the oxidative burst of reactive oxygen species (ROS) produced by plant respiratory burst oxidase homologs (Rboh) during HR is the primary driver of cell death in infected cells. We sought to test if DPI inhibition of Rboh prior to *Botrytis cinerea* inoculation reduces ROS-induced cell death and thus the spread of the pathogen. In order to eliminate the possible deleterious effects of DPI on *Botrytis* spore germination and growth, we measured its growth rate on agar medium impregnated with DPI. To verify the presence of plant Rboh and their enzyme activities, we performed a Western blot against RbohD and measured the corresponding superoxide production in *Botrytis*-infected *Brassica* plants as compared to the control.

2I • EDGAR FELLOWS MISCELLANY 8 BAILEY 203

SESSION CHAIR: MICHAEL MILLS, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

Colored Unlinking MOVED TO SESSION 11

JENNA ZOMBACK

FACULTY SPONSOR: JEFF JOHANNES, MATHEMATICS

In links with two components there are three different types of crossings: self-crossing in the first component, self crossing in the second component, and crossing between components. Previous work by Peter Kohn has mostly not made this distinction between the different types of crossings. In this talk we examine the minimum number of crossing changes needed to unlink without changing the crossings between

components. Therefore we restrict our attention to unlinking two component links with linking number zero and both components unknotted. We gather examples of links of this kind and use some technical tools to analyze them such as Conway and Alexander Polynomials, the Thistlethwaite Link Table, and branched covers. After observing the number of crossing changes needed to unlink in these cases, we generalize our results beyond examples by generating families of links. **Selected for presentation at Mathematical Association of America Seaway Sectional Meeting, Oswego, NY.**

3D Boundary Detection using Cellular Automata and Genetic Algorithms

WALTER GERYCH

FACULTY SPONSOR: DOUGLAS BALDWIN, MATHEMATICS

We designed and implemented an algorithm for boundary detection in 3D images that consisted of a cellular automaton optimized by a genetic algorithm. The method involves randomly generating an initial population of rule sets for cellular automata. The fitness of each rule set is determined by the PSNR of the image generated after running a cellular automaton using that rule set on a ground truth test image. A genetic algorithm then breeds the most fit rule sets together. After several successive generations, the most fit rule set is used to define the cellular automaton that acts as the boundary detector for the 3D images. The cellular automaton rule set derived from the genetic algorithm produced results that outperformed a previous method of 3D boundary detection when run on brain scans from the BRATS 2016 dataset. This project was motivated by the goal to create an automatic method of detecting brain tumors in 3D MRI scans. This method can be used as a diagnostic tool, as well as a method of determining the volume of brain tumors. An automatic method of determining tumor volume is of interest to medical professionals because tumor volume correlates to the stage of the tumor.

Clobetasol Treatment of Vulvar Carcinoma Cell Lines UMSCV-4 Show Evidence of Entering into Quiescence as Reflected by Decreased Cellular Metabolism

VARUN MEHTA

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 sclerosus, that is treated with the ultra-potent corticosteroid, clobetasol. However, there is some concern that clobetasol can promote carcinogenesis in vulvar tissue. Using MTT assays, we showed that clobetasol treatment of the vulvar carcinoma cell lines, UMSCV-2 and UMSCV-4, slows the metabolism of these cells. Removing the clobetasol results in reinitiation of growth, further suggesting that clobetasol is actually promoting a state of quiescence in which the cells become only temporarily dormant. This poses an obstacle to the methods of cancer treatment, which typically targets cells that are actively dividing. To further identify if clobetasol treatment results in

quiescence, RT-PCR was performed with markers of quiescence, cyclin dependent kinase 2(CDK2) and cyclin D1, in the treated cells. Both CDK2 and cyclin D1 exhibit repressed expression in quiescent cells. So, we expect both of these molecules to be down regulated in the clobetasol treated cells as compared to the untreated cells.

2J • LANGUAGES AND LITERATURES ALICE AUSTIN THEATER EN EL ACTO: One-Act Plays in Spanish

FACULTY SPONSOR: FELISA BREA, LANGUAGES AND LITERATURES

SESSION CHAIR: ROSE MCEWEN, LANGUAGES AND LITERATURES

El viejo celoso (The Jealous Old Man), a play by Cervantes, adapted to Modern Spanish and acted by Department of Languages and Literatures students.

AOIFE ANDREWS, MARISSA HARRINGTON-VERB, DIANA PÉREZ, SHAY BENEDETTO, LEILA BOCANEGRA, JONATHAN NIEVES, AARON KLUBALL, TIPHERETH HASSAN, TRISTAN JOHNSON, COURTNEY KING

Hyperjealous Cañizares, the play's elderly protagonist, confines his child bride Lorenza to their home, guarding her under lock and key - ever fearful that the outdoors may enlighten her of the marital delights he has yet to provide her. When Cañizares mistakenly leaves Lorenza's doors unlocked, Hortigosa, their crafty neighbor, timely enters the scene; she suggests to the young Lorenza that her circumstances would be pleasantly improved were she to allow the neighbor to deliver a young and willing suitor to the girl's bedroom. The ensuing scenes of this *entremés* (a type of humorous one-act plays that in Spain's Middle Ages and early Renaissance were inserted between two acts of a serious drama) prove most entertaining--and, ironically, still plausible 400 years after the work's publication. NOTE: Students in Dr. McEwen's Introduction to Hispanic Literatures course have adapted the play's dialog to reflect contemporary Spanish language usage and current Hispanic trends.

2K • ENGLISH BAILEY 101 Guided Poetry Source Tours 2

SUE RUBRIGHT, SPONSORED RESEARCH

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

Pedestrian Crossway

ALLISON FOX

Do we notice the people we walk past? Do we notice the surroundings we brush by? Do we pay attention? Typically when we venture out into the world we fail to notice the spectacles that sculpt our paths. In the effort to be more aware of my outside world, I have begun to observe the passersby. I wonder, is the one moment that we brush shoulders the single impact we will have on each other's lives? I will be leading a small group to 3-5 locations around campus in an effort to shed light on the people and places that may have been a sort of refuge, or may have been an insignificant blip en route to class. I will recite poetry and read

original works, beginning on Main Street by the fountain to witness pedestrians and motor traffic. If we start to focus our outlooks onto the accepted trivial surroundings, we create an opportunity to propagate the source.

Geneseo Sports & Poetry: A Lit Tour

DAVINA WARD

This presentation will focus on the sports world of Geneseo. I intend to create a video tour through the athletic sites located on campus to examine some of elements of sports at Geneseo that make for excellent poetry. These sites would include Softball Fields, Soccer and Lacrosse Fields, Pool, Tennis Courts, and Basketball/Volleyball Courts. I would like to create a panel of some head coaches and players from the various sports to discuss aspects of sports at Geneseo that they could see as acting material for poetry, as well as detail athletic moments in recent school history. Additionally, this video tour would act as a more in-depth look at the sports centers at SUNY Geneseo and determine some concrete moments and examples of how the particular locations of the Geneseo campus related to athletic activities are and have been the home to poetic source.

2L • ENGLISH

GAZEBO

Guided Poetry Source Tours 3

SESSION CHAIR: ARIANNA MILLER

Chasing Poetry Across Campus: a Performance and Workshop

ARIANNA MILLER, DAVID SABOL

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

We will write a slam piece using a poetically inspirational location on campus, specifically, the gazebo, which would also function as the launch point of our Guided Source Tour. We would perform our piece at the gazebo to our audience. After we have completed performing our piece, we will walk through Sturges Quad up into Wadsworth and into Welles. As we walk we'll mention aspects of each subject we find inspirational, hopefully conjuring up some inspiration. Following our tour, we will move to the College Green where participants will be given the opportunity to create their own pieces about where we visited or somewhere else on campus. We will create a writing exercise that will help our audience do this and help guide each writer if they need it. There will then be time for people to share their pieces and ask questions.

2M • ENGLISH

WELLES 128

ESOL Cultural Experiences

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

India, the Place Where My Heart Belongs

DHARTI THAKER, SHREYYA MALIK

India is a country rich in culture, languages, traditions and religions. It is the country believed to have one of the oldest civilizations like Harappa and Mohenjo-daro. India is the country of not only an amalgamation of traditions and religions but also hearts of people as well. India is the birthplace of Hinduism, Buddhism, Jainism, and Sikhism. It is the mixture and essence of all these religions put

together that constructs Indian Culture. The presenter Dharti Thaker and Shreyya Malik will be speaking about family structure and marriage, festivals, languages, art, sports, media, and clothing, etc. So, get ready to be painted with the colors of Indian essence "Indian- ness".

My Home Country, Spain

IVÁN GALLEGO HERNÁNDEZ

For GREAT Day, I have planned to deliver a presentation on my home country, Spain. In particular, I intend on focusing first on the country's geography, with reference to Spain's global positioning, as well as to my specific home town's location. In addition, I will further present the nuances of Spanish culture. For this section of my presentation I will touch on the topics of language, food, holidays, and some particularly interesting facts.

Who are TCKs?

YUKA KURITA, KEIKO ISHIZUKA

When people meet for the first time, they commonly ask "Where are you from?" and expect them to meet their expectations. However, this simple question is always a struggle for third culture kids (TCKs). TCKs are a new category of people who spent their early childhoods in cultures different from their parents'. Their definition of "home" is usually different from the norm and is not heterogeneous. The hegemonic stereotypes of TCKs' backgrounds and nationalities challenge them. People generally consider TCKs unique. However, they are not much different from others with more multicultural skills. The globalization increased the population of TCKs, even though the correct understanding of TCKs is still weak. This presentation will focus on hidden struggles of TCKs in college life and their home countries.

Coming of Age Day in Japan

AYUMI KONO, YURI TSUBOI

The following presentation will discuss the annual Coming of Age Day which occurs each January in Japan. Every year, the Coming of Age Day publicly honors those who have turned twenty years old over the course of the past year. In Japanese society, young adults officially complete their transition into adulthood at the age of twenty. Likewise, at this time they are also granted a new set of responsibilities and privileges which go along with their newfound status in society. In this way, turning twenty is an incredibly significant event for Japanese citizens. The presenters will begin by explaining the history of the Coming of Age Day, and more specifically, how citizens typically celebrate the holiday. In addition, the personal experiences of each presenter will be discussed in further detail with special attention given to certain experiences involving particularly interesting events, such as the traditional initiation ceremonies. The presenters are very much looking forward to sharing both their own personal stories, but also a piece of Japanese Culture with their audience!

Cultural Differences between

Argentina and USA

CECILIA CAMPOS, FERNANDO CALIARI

Presenters from Argentina will explain how cultural differences vary significantly from one country to

another. Being able to travel around the world makes you aware of all those differences and gives you a better understanding of how people behave, think and feel. We want to introduce some outstanding distinctions between the U.S. and Argentina. Some of the points that we are going to develop are related to social interactions: ways of greeting and communicating, formalities of the relationships, and how young people party. In addition, we are going to highlight some differences in college education, as well as different perspectives in cinema industry and in the importance of the material things. We hope that appreciating these aspects will provide the audience a better understanding of how cross-cultural differences influence our daily behavior.

2N • GEOGRAPHY

BAILEY 201

Cultural and Social Geography II

FACULTY SPONSOR AND SESSION CHAIR: DARRELL NORRIS, GEOGRAPHY

The Geography of Exclusivity: Golf in Singapore

ADAM DOHRENWEND

FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

Singapore, one of the most densely populated places in the world, is tasked with significant social, geographical, and environmental problems rooted in sport. Golf has made quite the footprint on the landscape of Singapore—with 2% of the country's very limited land being taken up by golf courses (Shih). This phenomenon puts a significant amount of Singapore's undeveloped land in the hands of the few who have climbed to the very top of the social ladder to play a game that further stresses the rest of Singapore's growing population. *Selected for presentation at Middle States meeting of the Association of American Geographers, Binghamton, NY.*

The Global Dissusion of Slum Tourism and the Issues it Raises

NICHOLAS MINETT

Slum tourism is a growing reality. It began at least in the nineteenth century, when London's rich would literally "slum it," and still thrives today all over the world. At least thirty major cities now offer slum tours to rich westerners to "how the other side lives." The argument rages on both sides of slum tourism, with many claiming that slum tours are simply human zoos while others argue against that notion and look at the positives of tours. Either way, slum tourism has been on a steady rise. I will focus on how the slums sustain themselves, how the tours operate, and the rich culture that each slum contains within itself. While looking at the slums themselves, what they have to offer during tours, and some of the other intricacies of the business, this paper will include logistics and first-hand perspectives from tour employees and different individuals who have participated in slum tours. My paper will also focus on giving outsiders a hard look at the reality of what life in these squatter settlements is. My goal is to raise awareness about what Slum Tourism is and bring attention to this subject and these ignored impoverished areas. *Selected for presentation at State University of New York*

Undergraduate Research Conference, Fredonia, NY.

20 • GEOLOGICAL SCIENCES ISC 115

SESSION CHAIR: JEFF OVER, GEOLOGICAL SCIENCES

Breakage and Dissolution of Conodonts in the Digestive System of a Modern Non-teleost Fish

ALLAN ENGELBERT

FACULTY SPONSOR: JEFF OVER, GEOLOGICAL SCIENCES

There is a distinct bias in the fossil record that preferentially preserves P1 conodont elements. A 2005 study compared a sample of conodont elements collected in South Carolina, U.S.A., to a given ratio of elements expected in a complete conodont apparatus. Of what was collected, there were 673% more P1 elements than expected relative to the ratio of P1 elements in a complete apparatus. Of the S, M, and P2 elements collected, 3%, 14%, and 49% were recovered compared to a complete apparatus, respectively. Structurally, P1 elements are larger and thicker than the other S, M, and P2 elements. It is possible that the less robust S, M, and P1 elements were damaged as a result of predation on conodonts by other carnivorous fish during the Paleozoic era. These pre-depositional factors would have an effect on the fossilization potential of these elements, and could be responsible for the overrepresentation of P1 elements in the fossil record. To test this hypothesis, two complete conodont apparatus will be fed to *Polypterus (Bichir)*, and then analyzed for breakage and dissolution after the conodonts have been digested. This experiment should yield similar results to the preservation statistics of conodonts in the fossil record.

2P • ENGLISH WELLES 134

Literature, High Art, and Serial Rape in the Classroom: Will It Be on the Midterm?

FACULTY SPONSOR: JUDY WELLES, ENGLISH
SESSION CHAIR: PAUL WELLES AND TYLER HERMAN

WITHDRAWN

Recycling the Rape of Europa

RAINA SALVATORE, MARIA SIMAS

Our presentation focuses on the shift from eroticism to violence in paintings of the Rape of Europa. While many early depictions of the narrative emphasize the erotic nature of Zeus' abduction of Europa, more modern works suggest that artists began to see rape as a criminal act. This move from hypersexualized versions of Ovid's narrative to darker interpretations may reflect a change in the mindsets and attitudes of the painters' perceived audiences.

Apollo and Daphne in the Renaissance: The Romanticization of Possession and Submission

MARTY BENZINGER, JENNIFER LIRIANO

The Apollo and Daphne story, as told in Ovid's *Metamorphoses*, is one of sexual aggression and unreciprocated love. Though these themes are evident throughout the text, art portraying the

Apollo and Daphne story often romanticizes the relationship between Apollo and Daphne, and therefore skews the viewers' response to the narrative. This is especially evident in Renaissance art, where instead of emphasizing the horror that Daphne feels in the moment of her transformation, artists paint the metamorphosis as being sexual, welcomed, and romantic.

Women's Place in Erotic High Art: The Necessary Glorification of Zeus in The Rape of Callisto

MARGARET PIGLIACELLI, EMMA WILLIAMS

This presentation shows the disparity between high art depictions of women and of men in erotic scenes. To show female homoerotic love in a positive light, artists often masculinize female figures or compose the painting in a way that suggests traditional gender roles. We examine representations of The Rape of Callisto in which the gender of the figures determines whether the painter emphasizes violence or beauty; beauty surpasses violence only when there is either an overt male presence or a woman acts in a traditionally male role. Women, seemingly, cannot exist in erotic spaces without a male presence.

2Q • POLITICAL SCIENCE & INTERNATIONAL RELATIONS WELLES 121

Honors Theses II

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
SESSION CHAIR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Political Culture, Interest Groups, and the American Gun Crisis: an Exploration of Contributing Factors and a Comparison to Australia and Germany

LISA KAASIK

The United States faces an unparalleled gun violence epidemic that claims the lives of over 30,000 people every year. In the last few decades, following a sharp increase in mass shootings, the gun control debate has emerged as one of the more polarizing issues in American politics. Gun control legislation in the U.S. is disparate and has done little to mitigate gun violence. In order to better explain the uniqueness of the American gun crisis, it is helpful to examine how other countries approach guns and gun ownership. Australia, a country with a similar firearm history, instituted massive gun control legislation following a mass shooting at Port Arthur in 1996, which resulted in a dramatic reduction in the amount of guns in circulation and rates of gun violence. Germany, despite the significant number of guns in circulation, has very low rates of gun violence due to their strict gun control policies. In this paper, I investigate the role that interest groups play in the creation of gun control policy and their influence on public opinion. I argue that the relationship between the state and interest groups is the most powerful explanation behind the differences in gun control legislation. I examine these differences with a qualitative evaluation of interest group

influence, as well as data on public opinion and government responsiveness.

Comparative Analysis of Public Policy of Sex Trafficking in the U.S., The Netherlands, Nigeria, and India RACHEL WILCOVE

The United Nations defines human trafficking as "recruitment, transportation, transfer, harboring, or receipt of persons by improper means ... for forced labor or sexual exploitation" (National Institute of Justice, 2017). According to the International Labor Organization (2017), approximately 4.5 million individuals worldwide (mostly women and girls) are trapped in sexual exploitation. Although it is illegal under international and national laws, many countries either do not take measures or are ineffective in addressing this heinous crime. This study examines the laws and law enforcement measures instituted by four countries to address sex trafficking: the United States, Nigeria, India, and (the only subject country where prostitution is legalized) the Netherlands.

Strategic Re-engagement: The Russian Federation's Reactive and Proactive Maneuvers in Latin America DAVID GOMEZ

After a short disengagement period following the fall of the Soviet Union in 1991, Russia now sees various opportunities in reactivating and cultivating new strategic relationships across Latin America. Since the early 2000's, Russia has engaged in a vast array of economic, military, and influence operations designed to achieve specific short and long-term goals. Russia's reactive, or short term, actions are a direct result of specific U.S. foreign policy stances and actions toward Russia, and these reactive measures feed and strengthen Russia's proactive, or long term, strategy which is shaped by the larger framework of the international system and Russia's history. These actions reflect the government's desire to reassert Russia's position as a global force, manage its own domestic and regional affairs, and counter what it sees as a preponderance of power in the United States and the West.

2R • HISTORY STURGES 109

Research in Gender and Sexuality History II

FACULTY SPONSOR AND SESSION CHAIR: RYAN JONES, HISTORY

Cross-Dressing as Comedy in Film and Television, 1950-1999: What a Joke Costs and Who Pays For It JENNA LAWSON

Cross-dressing as comedy in television and film was performed to the detriment of many transgender individuals in the 1950s through the 1990s and even into the present. In considering performances of drag, it is clear that they were and are markedly different from cross-dressing performed by straight men due to the position of marginality held by drag performers, who often inverted tropes and

stereotypes about queer behavior. This difference is expressed through the general drag performer view on their own reasons behind their performance, where they create humor out of alternative performances of gender instead of at the expense of it, while still taking the topic of gender performance very seriously. The consequences of cross-dressing as comedy can be measured through a growing anti-transgender sentiment that rejects transgender desire to access spaces that correlate with their gender identity, most notably in an anxiety about transgender bathroom use, and through an expressed lack of agency and sense of discrimination felt by transgender individuals during this time frame. While film and television were no means the only cause for this development, an examination of these films and the attitudes of filmmakers, viewers, and transgender people finds that they helped to propagate these

An bhfuil bean sa codagh: Gaelic, Gathering and Girls in the 1916 Easter Rising

THERESA GIBBONS

While the Easter Uprising of 1916 is one of the most discussed events in Irish history, discourse surrounding women's participation in the Rising is limited in both scope and focus. This study seeks to expand upon previous historiography in order to understand the effects that gender hegemony played in the development of women's involvement in the Rising. Rather than rehashing previous scholarship on the military achievements of women in the rising, this study aims to discuss the female fighters use of traditional gender roles and femininity as a method of gaining social, political, and military autonomy prior to and during the Rising.

History of Vibrators

ERIN SHEEHAN

This paper offers a new look at the history of vibrators, from their origins as a medical device to solve female (and at times male) physical and psychological health issues, including hysteria, to their shift into becoming a device associated with sexual pleasure.

2S • HISTORY STURGES 108 SNCC Digital Gateway and Geneseo: The Student Nonviolent Coordinating Committee Past and Present

FACULTY SPONSOR AND SESSION CHAIR: EMILYE CROSBY, HISTORY

THOMAS GARRITY, JENNIFER GALVAO, LAUREN PLEVY, TANAIRI TAYLOR, LAURA BROWN

The SNCC Digital Gateway is an online digital resource for documenting and sharing the work of the Student Nonviolent Coordinating Committee. SNCC was formed out of the 1960s sit-in movement and was an organization of college-aged activists on the cutting edge of the Civil Rights Movement. Four Geneseo students are working as interns on the SNCC Digital Gateway, helping to incorporate Geneseo recordings of civil rights movement speakers and using social media for promotional and educational purposes. The four

interns will introduce the audience to SNCC and the SNCC Digital Gateway as well as their individual contributions and understandings. You can find the SNCC Digital Gateway at snccdigital.org and one student, Laura Brown, will reflect on what she learned from the website.

2T • LANGUAGES AND LITERATURES BAILEY 105

Spanish in the US: Spanish and English in Contact

FACULTY SPONSOR AND SESSION CHAIR:
CHRISTINA AGOSTINELLI-FUCILE, LANGUAGES AND LITERATURES

Why do Bilinguals Code-switch?: Examining the Causes and Benefits of Speaking Two Languages at the Same Time

MEGAN MCDONOUGH

Code-switching is the alternation of two languages in the same speech or sentence (Poplack, 1980). Through analyzing current research and literature about the reasons behind code-switching, it is clear that there are multiple reasons to explain why it occurs. Code-switching has often been seen as a negative occurrence. The popular, yet misguided belief is that people code-switch because they do not have full knowledge of either language (Heredia & Altarriba, 2001). However, most linguists agree that full proficiency in both languages is necessary in order for code-switching to occur (Poplack, 1980). Other research argues that code-switching can be used to demonstrate cultural identity (Kim, 2006) or to better express of emotions (Toribio, 2001). Additionally, some scholars have found that some words or ideas are simply better explained using a different language (Toribio, 2001). Code-switching is useful for navigating the increasingly diverse and is a resource that multilingual speakers should use to their full advantage. Studying code-switching can help reinforce the idea that it is a non-disruptive tool that can enhance the communicative power of the speaker. We will discuss why code-switching should be accepted and even encouraged, especially in learning environments.

Linguistic Accommodation in the Workplace

EMILY DELSIGNORE

Throughout American history, the freedom of expression has been among the most beloved of American civil rights. Linguistic accommodation in the workplace is a necessary implication of this right, and furthermore is a useful tool to combat language ideology within the workplace. Various aspects of interpersonal relations (specifically, between employee and client vs. between employee and employer) and examples within specific occupations illustrate the absolute necessity of linguistic accommodation that comprises the sociolinguistic competence of bilingual American workers. For example, code switching (sequences of English and Spanish in the same discourse) is considered an example of an employee and client interpersonal communication technique (Escobar & Potowski 2015). Contrariwise, another type of linguistic

accommodation is facework, the actions that attend to the faces of the speaker and the listener (Callahan 2011). Non-specialized jobs (e.g. working in restaurant kitchens) most often lack linguistic accommodation, predominantly with the use of "Mock Spanish" (Barrett 2006; Escobar & Potowski 2015). Eliminating the use of "Mock Spanish" and employing more facework and code switching in the workplace would improve linguistic accommodation. A multilingual person inherently has a more sophisticated and developed communicative competence, and recognizing this is therefore imperative in properly establishing workplace linguistic accommodation.

The Use of Spanish Pronouns in New York City: Changes in Spanish Speech Patterns Caused by Contact with English and Other Social Factors

JESSICA BENEWAY

The conjugations of Spanish verbs based on a subject's actions makes the use of pronouns optional or contextual. However, it is essential to use pronouns in English to indicate who is taking the action of the verb (Shin & Alcalá, 2014). Several studies have indicated that native Spanish-speakers interacting with the English language are more likely to include pronouns in the speech pattern (Shin & Alcalá, 2014; Otheguy, Zentella & Livert, 2007). New York City is home to a plethora of populations and languages. Studying interactions between language and society in a civilization such as NYC is of great importance because language patterns are often derived from social patterns (Otheguy et. al., 2007). By studying the Spanish-English interaction in this cultural microcosm, we can identify how Latino populations are possibly affected by societal interactions (Otheguy, Zentella & Livert, 2007). These language patterns can indicate gender, wealth and class inequalities found in Spanish-speaking populations (Shin & Otheguy, 2013). Linguistic patterns such as these are essential when studying ever-changing demographics and population statistics. This presentation will unpack and explore several social and environmental factors that have potentially affected the use of Spanish pronouns in New York City's Spanish-speaking population.

English, please: The Unjust Reality Facing Spanish-Speakers in American Workplaces

SETH KLEMENICH

This research aims to identify the different ways in which American workplaces unjustly discriminate against Spanish-speaking monolingual and bilingual employees, mostly as a result of growing diversity and immigration. Due to certain linguistic ideologies and xenophobic sentiments that exist, many workplaces have begun to implement policies, such as that of "English-only", which unfairly target Spanish-speaking employees who may know little English (Wyld 1997). English-only has, however, caused action in the form of court cases, which have had varying degrees of success in overturning these policies (Wyld 1997, Del Valle 2009). Code switching, in which a bilingual speaker easily switches between Spanish and English in one

conversation, poses risks as well, as employers see this as the employee being able to "choose" to respectfully follow policy and speak English (Colón 2002). Also of importance, Mock Spanish and Domestic Spanish serve to dehumanize Spanish-speakers, reinforcing negative stereotypes attributed to speaking Spanish (Barrett 2006, Divita 2014). Although it may be difficult to change xenophobic sentiments in the workplace, this situation can be improved by using more sincere language towards bilingual employees and by choosing to learn the other language in question in depth so as to not use it only for command purposes.

2U • THEATRE & DANCE BRODIE 152 Spiritual Awakenings

FACULTY SPONSOR AND SESSION CHAIR: MARK BROOMFIELD, THEATRE & DANCE

SOPHIA GARBER, MICHAEL REED, JULIA DEACON, PATRICK YEE

Performed in three sections, the danced duet "Awakenings" revives and renews the need for spiritual connection to the music of Ruby Philogene including Sometimes I Feel Like a Motherless Chile, 'Tis Me, O Lord, and Walk With Me.

2V • EDUCATION NEWTON 204

The LIVES Program at SUNY Geneseo: Our Strengths and Struggles, Work Skills Learned, and Sills Learned

FACULTY SPONSOR AND SESSION CHAIR: ELIZABETH HALL, EDUCATION

Our Strengths and Struggles - Similarities and Differences Between College Students with and without Disabilities

DYAN MCCLURG, ALEXIS HERMAN, SUZI LOMBARDO, KATRINA FINCH, LEAH RHOADS, CODY SCHLAGETER, ADAM THARETT,

The first-year students in the LIVES Program surveyed Geneseo college students to determine their strengths and struggles as college students. The LIVES students then compared/contrasted the college student's answers to their own strengths/struggles as being first year college students. The LIVES students found that the Geneseo college students had similar strengths and struggles thus helping the LIVES Program students understand that college students have similar experiences regardless of ability.

Work Skills We Learned in Order to Be Successful

RICHARD JOHANNES, THOMAS COBURN, JENNIFER PEARL, JAMES SNYDER,

This presentation will focus on skills learned by the LIVES students while participating in a non-paid work internship on campus, and how these skills generalize to life after school. Living in a rural area with jobs being very competitive, having the right qualifications and experience is no longer enough to ensure employment. The LIVES Program students have learned that they have to differentiate themselves from the next person,

project their best personal qualities, and convey a professional working image.

We Learned to be Successful in an Audit Class

VIRGINIA ELEY, ELIZA COX, JULIE JOHNSTON, JORDON MCKINSEY

This presentation will focus on an exploration of skills college students need to be successful in a college class and how these skills generalize to life after school. The students will discuss their audit class, their individual goals while attending the audit class, the information learned while in class, skills required for success in a college class, as well as a reflection of the interactions that occurred while in the audit class.

Skills Learned in LIVES and at Geneseo and How they Will Help Me in the Future

TAYLOR CATHEY, JESSE CLAUD, AMANDA CROSS, IAN KANE, KALEB KENNEY

This presentation will be a summary of the students' four years at Geneseo in the LIVES Program. Each student will present the skills she/he has learned in the LIVES Program, in audit classes, at non-paid internships, clubs/activities, and discuss the development of their social skills.

2W • THEATRE & DANCE WELLES 138 Theatre & Dance 1

FACULTY SPONSOR: RICHARD WESP, THEATRE & DANCE

Lana Del Rey: Icon of Ephemera

GEORGE GOGA

Sometime in the 90s, Elizabeth Woolridge Grant became a musician. It would be years later--along the way, an acceptance letter from SUNY Geneseo, too--until she'd become known as Lana Del Rey. Her early albums *Born to Die* and *Paradise* transported her to fame, today supported by *Ultraviolence*, *Honeymoon*, and her most recent single, *Love*. But what's the fuss? This talk makes the case that Del Rey's success is distinctly literary, through both her lyrics and persona. Along the way, her songs define a contemporary America whose pop culture isn't trivial: it's essential in fact to celebrating life's most literary moments.

2X • MATHEMATICS SOUTH 328

Topics in the History of Mathematics 2

FACULTY SPONSOR AND SESSION CHAIR: GARY TOWSLEY, MATHEMATICS

Mathematics and Architecture of the Ancient Egyptian Pyramids

QUINN KEENAN

The ancient pyramids of Egypt are amazing feats of architecture for the time. Many are amazed at how the ginormous structures were built. In turn, people have studied the dimensions of the pyramids to theorize the proportion system used to construct the structures. The theories include the possible use of: the golden ratio (Phi), Pi, as well as the Pythagorean theorem. In particular, there is a theory that the Great Pyramid of Khufu was designed so that the ratio of the slant height

of the pyramid to half the length of the base is Phi. It is also thought that the pyramids were constructed based on their formula for drawing images of the human body, which incorporates Phi. The use of the golden ratio evidently also implies a coinciding use of Pi, which has led to further research on the use of Pi in ancient pyramid construction. Many mathematicians still marvel the fact that the pyramids were so advanced for their time.

What is Chaos? ☞

ELINOL LOPEZ

Chaos theory is the mathematics of surprises. It studies nonlinear and unpredictable relationships such as turbulence, weather, even our brain chemistry. We describe these phenomena using fractal mathematics. This is because many objects in nature such as clouds, trees, organs, and rivers, possess fractal properties and behave chaotically. Recognizing infinitely complex fractal nature of our world can give us insight, and wisdom. By understanding that our ecosystems, our social systems, and our economic systems are interconnected, we can hope to avoid potentially detrimental actions.

The Golden Ratio in Art and Design

ADELYA BAIMUKHAMEDOVA

My research will analyze the importance of the Golden Ratio in art and design. I intend to loosely trace the timeline of the ratio's use. I will begin my timeline with the ratio's alleged Ancient Egyptian "inception" in the proportions of the pyramids at Giza. I will continue by studying the Golden Ratio within the artworks of Leonardo da Vinci and Piet Mondrian. I will conclude my timeline by analyzing the modern utilization of the Golden Ratio, including digitally (Twitter's User Interface) as well as its use in logos (Toyota, Google).

Understanding the Fibonacci

Sequence

KATIE VIENNEAU

Leonardo Pisano was an influential and talented Italian mathematician during the Middle Ages. He introduced the Hindu-Arabic numeral system to the Western world, and is widely known for his mathematical contribution, the Fibonacci sequence. The Fibonacci sequence can be seen in nature, such as in the family trees of bees and the leaf arrangements of plants. I will explain what the Fibonacci sequence is, what patterns can be produced with certain operations and manipulations, and where in every day life the Fibonacci sequence appears.

2Y • ENGLISH WELLES 119

True North: Canadian Literature

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: DAVID BEYEA

The Rise of Canadian Identity in

Barometer Rising

KATHLEEN JACKSON

This essay considers how Hugh MacLennan's novel of the Halifax Explosion of 1917 develops the theme of Canadian Identity. The essay focuses on how the characters contribute to this increasing understanding of a nation that is no longer thinking

of itself as a British colony and draws on aspects of postcolonial theory to advance the argument.

The Role of Setting in Sinclair Ross's "The Painted Door"

RICKY NOEL

The paper is a brief exploration of Sinclair Ross' use of setting in his short story, "The Painted Door." In it, I assert that Ross' choice of a terrible blizzard on the bleak, isolated Canadian prairie is made to both reflect and intensify the protagonist's inner conflict. It is my take on the oft repeated idea that a setting can act as its own character in a piece of literature

Comedic Elements of Mordecai Richler's "Some Grist for Mervyn's Mill"

DONALD ROTHWEIN

This essay examines the often overlooked light-hearted sight of literature through a dissection of Mordecai Richler's "Some Gryst for Mervyn's Mill." Richler is able to transform his piece into a comedic work through the relative absurdity of main character and aspiring writer Mervyn Kaplansky compared to the mundane and traditional Jewish community he takes up residence in. This juxtaposition, aided by minor elements of tragedy and the audience's unmet expectation of a greater resolution at the story's close, results in a work of short fiction that serves as an example of the vast techniques used to create humor in the written word.

2Z • ENGLISH WELLES 140 Under Our Noses: Climate Change in Unlikely Places

FACULTY SPONSOR: KEN COOPER, ENGLISH
SESSION CHAIR: JACOB SNYDER

Movement is Life: Mobility and Climate Change

IAN BECKMAN

A common but frequently overlooked theme in anthropocene-era culture is the issue of mobility. Automobiles, one of the most iconic symbols of modern technology, are deeply implicated as one of the greatest contributors to carbon emissions: attractive people in car commercials race forward into an ever-narrowing future. This irony has not been lost on science fiction writers like George Miller, Phillip Reeve, Tetsuro Araki, and Nicholas Smith, who reconceive motion and the vehicles themselves in their works. There are two themes that predominate: first, a total destruction of Earth's environment, either through humanity's actions or events beyond our control; and second, a theme of forced (not volitional) movement. In these works no one can stay still, no one can afford to rest.

The MTA as a Model for Positive Climate Propaganda

JACOB SNYDER

What is the difference between propaganda and changing someone's mind? This paper focuses upon Metro Transit Authority posters displayed on New York subways, which work both by direct and unconscious means: to reinforce riders' trust in and loyalty to the MTA, to build a sense of community between the two parties, and to encourage further efforts to reduce the overall carbon footprint. Potentially, this is a dangerous form of civil propaganda that asks people to blindly trust a corporation and reshape their thinking accordingly. I argue that there is such a thing as "positive propaganda" which raises ecological issues and creates meaningful communities between individuals and collective entities like the MTA.

As Alive as You Are: Empathy for the Environment (and Everything Else Too)

ABIGAIL RITZ

Edward Snowden's revelation of the National Security Agency's (NSA's) enormous breach of the privacy of individuals and states across the globe, the use of drone warfare and surveillance by the United States government, an increasingly nationalistic and fearful populace: each represents a disconnect between Us and the Other, whatever the foreign other may be. Such disruptions are symptomatic of a larger, more threatening breakdown in empathy as such, especially prevalent among our society's most privileged. The powerful also are those, not coincidentally, most likely to deny the existence of climate change. This paper focuses upon empathy--and its erasure--to explore connections between national security, modern (cyber-)warfare, and environmental devastation.

Autism as Symptom and Symbol of Climate Change

NATE BARR

Autism is a uniquely modern condition. Only clinically identified in the 1940s, the disorder's profile has risen over the past thirty years as diagnoses of autism spectrum disorders (or ASD) have become more common. This rise, however, cannot yet be explained, and basic questions about ASD's origins and long-term effects remain. Does it stem from psychological, genetic, or environmental factors? Can toxic environments influence the expression of a genetic predisposition to the disorder? Or does greater consciousness of ASD symptoms alone account for its increasing prevalence? Running in tandem with growing public awareness of ASD is the use of autistic individuals in popular media to reflect upon various aspects contemporary society. When put in dialogue with other markers of modernity, ASD provides a metaphor for society's inability to respond or adapt to environmental conditions. It

signifies both as a physical symptom of pollution and as a symbol of collective fears, even paralysis, in regard to climate change.

2AA • WOMEN'S AND GENDER STUDIES WELLES 24

WGST Senior Casptones: Gender, Spirituality and Witchcraft

FACULTY SPONSOR: JESS FENN, ENGLISH
SESSION CHAIR: MELANIE BLOOD, ENGLISH

Reading Sex, Gender, & Sexuality in Julian of Norwich's *Revelations of Divine Love*

JENNA COLOZZA

Female mystics living in the Middle Ages had a unique position within the realm of Christian spirituality. With the ability of unmediated contact with God, mystics like Julian of Norwich enjoyed a certain level of personal independence and authorial agency, yet in some ways existed outside the normative and authoritative structure of the Church. Written in part as she was cloistered as an anchoress, Julian's *Revelations of Divine Love*, or as she called them, "Showings," simultaneously paint a complex, insightful theology and tell us much about sex, gender, and sexuality in the Middle Ages.

Witchcraft in Television and Film

STEPHANIE GERSPACHER

The identity of witch and the practice of witchcraft is often associated with feminism. Scholars have suggested that women who were subverting the popular systems of control, particularly patriarchal capitalism, were labeled as witches and suffered the consequences. Women as witches in popular culture is perhaps just as pervasive as the appearance of witches throughout history. The ways in which women are portrayed in the media offer a parallel for analysis of how they are viewed them in society.

The Power of Three and Heterosexuality: How *Charmed* Excludes Queer Women

EMILY HOLDGRUEN

Although witches, demons, and other magical beasts exist in the universe of The WB's *Charmed*, LGBTQ+ women are significantly nonexistent. This paper offers a textual analysis of the forced heterosexuality in *Charmed*, highlighting its main platonic female relationships and hetero-normative, fairy-tale narratives.

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****WELLES 121**

SESSION CHAIR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The Geology of Art/The Art of Geology**KENDALL FITZGERALD**

FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

An Edgar Fellows presentation. This project seeks to reconcile the perceived divide between science and the humanities by examining how both artists and scientists depict and understand the natural world. In this presentation I will be examining works of art that incorporate geology (like Thomas Cole's *The Oxbow*) alongside data from scientific research in order to uncover how both disciplines contribute to a fuller understanding of the world. Through this juxtaposition I aim to show how art and science can be used in tandem to communicate research to a broader audience, in the hope of working towards a more sustainable future. This talk is an extension of the exhibit with the same name that is taking place in the ISC lobby.

3B • 1**WELLES 123**

SESSION CHAIR: GANIE DEHART, PSYCHOLOGY

The Effect of Type I Diabetes on Sibling Anxiety and Family Functioning**TEAGAN PLIMPTON**

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY
An Edgar Fellows presentation. The purpose of my Honors capstone project was to study the effect that having a sibling with Type 1 diabetes has on children. Specifically this study examined symptoms of depression and anxiety in children who have a sibling with Type 1 diabetes, as well as family functioning as a whole. Due to the body of research that exists on children who have a sibling with a chronic illness, specifically cancer, autism, and neurological conditions, it was expected that these children would be at an increased risk for depressive symptoms and anxiety due to the daily support and care their sibling with Type 1 diabetes requires from their parents, as well as from the sibling themselves. My interest in this topic stems from my own diagnosis as a Type 1 diabetic my junior year of high school, and my personal experience with the changing family dynamic when a family is forced to learn how to care for a chronic condition that requires around the clock monitoring.

3C • 1**WELLES 115**

SESSION CHAIR: BETSY COLON, GRANTS MANAGEMENT

Victory Day: A Defeat For Democracy?**KOSTYA GREEN**

FACULTY SPONSOR: DARRELL NORRIS, GEOGRAPHY

Ukraine has been and will be further split by a rift in ideology: fascism versus communism. This can be very well explained, though, more thoroughly using geography and statistics. During the last parliamentary election in 2014, an unprecedented number of right-wing groups and supporters were elected into office, despite the fact that half the nation is very much opposed. Because of this opposition, the Eastern half of Ukraine has made it clear that they no longer wish to live under the national government.

3D • 1**WELLES 134**

SESSION CHAIR: EMILY COLE, INTERNATIONAL PROGRAMS

Characterization of the Chromosome Organization and Cell Division Regulator DivIVA from the Large, Polyploid Bacterium *Epulopiscium* sp. type B**ALEXANDRA GLATHAR, ZACHARY KOENIG, MARY PYATT**

FACULTY SPONSOR: ELIZABETH HUTCHISON, BIOLOGY

Epulopiscium sp. type B is symbiont of tropical surgeonfish and the second largest bacterium discovered to date. One of the ways *Epulopiscium* sp. type B has adapted to its large cell size is through extreme polyploidy, so this bacterium provides an interesting system in which to explore chromosome organization of bacteria with multiple chromosomes. DivIVA is a known regulator of chromosome positioning and cell division in gram positive bacteria. We hypothesize that while the *Epulopiscium* sp. type B divIVA gene (divIVAep) has some overlap in function with that of closely related bacteria, it likely carries out novel functions due to the unusual cell structure and polyploidy of *Epulopiscium* sp. type B. As we cannot culture *Epulopiscium* sp. type B, we transformed a divIVA deletion mutant of *B. subtilis* with a copy divIVAep to assess its role in chromosome organization and cell division. We found that divIVAep partially complements a *B. subtilis* divIVA deletion mutant and are currently exploring differences in expression levels between the *B. subtilis* divIVA and the *Epulopiscium* divIVA genes during complementation. *B. subtilis* divIVA localizes to areas of negative curvature, and we are constructing a fluorescently labeled copy of divIVAep to explore its localization pattern. Alumni author William Schutt '16.

3E • 1**WELLES 119**

SESSION CHAIR: JULIE RAO, INSTITUTIONAL RESEARCH

Re-Learning Race: On Language and Culture in Montpellier, France**CHLOE FORSELL**

FACULTY SPONSOR: LYTTON SMITH, BLACK STUDIES

When leaving for my semester in Montpellier, France with my proposed project in mind, I had several anxieties: the language barrier, the awkwardness of interviews, my own insecurities about self as researcher. I did not, however, anticipate the vulnerability that I would feel on my end as the one posing the questions. I learned quickly the fallibility of dictionaries and online translators, and discovered "the hard way," what it means to live in a "color blind" society. Facing the frustrations of attempting to redefine words, to re-learn the word "race" as a pejorative, and to have this conversation that is so taboo it is at best avoided in France, the cross-cultural gap that I had intended to bridge by exploring non-white identity cross-continent seemed to only widen, but did offer new and interesting perspectives and insights as to how nations founded on a history of colonization choose to cope with identity and history. This presentation will follow the research process and explore/ attempt to make sense of its findings through essay, featuring a PowerPoint presentation, as well as reading excerpts. This project is supported by the Gerard Gouvernet Student Ambassadorship.

3F • 1**WELLES 128**

SESSION CHAIR: KYLEE O'HARA

Education Policy Proposal**CON ROCHE**

MOVED TO POSTER 438

FACULTY SPONSOR: EUNJUN LEE, SCIENCE & INTERNATIONAL RELATIONS

Social inequality is arguably one of the greatest issues in our country and greatly skews democracy to that of an oligarchy. Even though there has been a significant increase in GDP over the past couple of decades the vast majority of wages and the rate of poverty have remained essentially the same. This is a result of a great majority of the wealth aggregating at the top of the socioeconomic ladder in the hands of the 1%. This illustrates how Reaganomics, the conservative ideal of economics, which is modeled around "trickle-down" economics doesn't work. When conservative policies that provide tax breaks and loopholes to large businesses and upper class members of society are enacted, it is clearly seen that income inequality either stagnates or increases. A large proponent of this inequality is a lack of education. According to the Pew Research Center, 21.8% of millennials who have graduated high school (and not completed any further education) live in poverty. These millennials face many problems

such as unemployment, disparities in wages from those with degrees in higher education, and are victims of an educational system that does not adequately teach people how to perform in the evolving job market.

3G • 1 WELLES 131

SESSION CHAIR: CARLY O'KEEFE, INTL STUDENT & SCHOLAR SERVICES

Analysis of Protein Folding Structure using LCMS

MATTHEW STEINSALTZ

FACULTY SPONSOR: AMBER CHARLEBOIS, CHEMISTRY

In the undergraduate curriculum, the use of High Performance Liquid Chromatography (HPLC) is often used for purification purposes; however, there is potential for more. We are in the process of creating a novel biochemistry laboratory experiment that will investigate the structural modifications of Bovine Pancreatic Trypsin Inhibitor (BPTI) and α -chymotrypsin using Reverse Phase HPLC (HPLC-RP). BPTI is a 6.5 kDa monomer protein (58 amino acids) that contains three intramolecular disulfide bonds. HPLC has been employed to distinguish the following: native BPTI (completely folded), denatured BPTI (partially unfolded) and denatured/reduced BPTI (completely unfolded). For these experiments, Mass Spectrometry (MS) is the primary detection method. It was found that a clear delineation between folding states can be observed. We are currently investigating a larger protein, α -chymotrypsin which is a trimer protein (245 amino acids) that contains 3 intramolecular and 2 intermolecular disulfide bonds. Once these protocols are formally established, this project will be developed into an upper level undergraduate biochemistry laboratory experiment that provides students with a deeper understanding of protein structure, oxidation/reduction, and a hands-on experience with HPLC.

3H • 1 WELLES 132

SESSION CHAIR: COREY WILKINSON

Origin

STEVEN MINURKA

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

A source that is can be anywhere, whether the source in question is aware of my usage of it or otherwise. The way people interact with one another, friends, acquaintances, and strangers. From sitting down, talking on the phone, playing something on their phone, reading a book, or walking from point a to point b. Ideas and concepts can be taken from something simple, and that's what I want to show in the presentation - what we observe, and how it came to being there. Keep in mind, this is not exclusive to people, but literally the environment as well. The imagery of nature, the shape of campus, and cigarette butts on the concrete ground. Who could have left them there? How many did they smoke? Was it a full-flavored of a menthol? What of other people who witnessed the individual smoking? What about the tobacco before hitting the factory? What imagery can we get from something as insignificant as that? How much of a source can we take from all that exists

around us? The consideration of origin is important. The source's source, perhaps.

3I • 1 WELLES 133

SESSION CHAIR: MARY HOPE, INTL STUDENT & SCHOLAR SERVICES

Comparing Decomposition Rates of Nitrogen-Fixing and Non-Nitrogen-Fixing Invasive Species

JOHN COACCI

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

This study compares the effects on decomposition rates of a nitrogen-fixing invasive species (autumn olive) and a non-nitrogen invasive species (Amur honeysuckle) to a native species (gray dogwood). This study was conducted over the course of one year in SUNY Geneseo's Spencer J. Roemer Arboretum. The breakdown of litter samples was tracked by placing a predetermined amount of each species of litter into separate mesh bags, placing them underneath one of the three shrub species, and retrieving sets of the bags and weighing their contents at particular time intervals. The decomposition of each species of litter was measured underneath the canopy of each shrub species. Carbon and nitrogen chemical concentrations were also determined. The mass changes are used to calculate the rate of decomposition, while the nitrogen and carbon analyses will help describe differences in litter quality that can explain differences in decomposition rates. Preliminary results indicate that there is a significantly higher decomposition rate of the native species' litter under the nitrogen-fixing invasive. Additionally, the litter of the nitrogen-fixing invasive decomposed at a significantly slower rate when under the native canopy. Ultimately, studies like this can help researchers evaluate the more complex impacts of invasive species.

3J • 1 SOUTH 338

SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

The Vacuum of Entitlement: A Case Study of Conservative Activist Group PEGIDA UK

KATHERINE ZASLAVSKY

FACULTY SPONSOR: ANDREW HERMAN, COMMUNICATION

This study seeks to understand the ideology of PEGIDA UK, a British activist group which opposes the Islamification of Europe. With increases in immigration from Middle Eastern war zones, several branches of PEGIDA have formed across Europe. In the summer of 2016, the researcher attended a rally held by PEGIDA UK in Rotherham, England. Data collected includes conversation with leaders and members, the rhetoric of the rally, and the researcher's experiences. The study finds that supporters of PEGIDA UK have lost trust in the social institutions around them. This translates to a vacuum of their previous experiences of entitlement, which can be explained by George Herbert Mead's theory of the generalized other. Supporters a sense of opposition and lack of legitimization, which in turn strengthens the alienation felt between the group and outside

parties. The researcher believes that this is not an isolated situation, and a more accurate understanding of such seemingly extremist groups must be reached in order to understand the interests of the population at large. This project is supported by the Geneseo Student Ambassador Program.

3K • 1 SOUTH 340

SESSION CHAIR: HANNAH ZIMMER

TEDx: In Pursuit of 'Ideas Worth Spreading'

HANNAH LOO

FACULTY SPONSOR: JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

The motto for TED is simple - "Ideas Worth Spreading." But to a TEDx organizer like myself, those 3 words hold so many questions - how do we find these ideas? How do we convey them to others? And how do we convince our audience that these truly are ideas worth spreading? Having organized the TEDxSUNYGeneseo event for the past 2 years, I wanted to improve the program going into our 3rd year. Through the John A. and MaryGrace Gleason Ambassadorship in Student Affairs, I had the opportunity to attend the TEDWomen conference, where I networked with TEDx organizers from around the world, spoke to TEDWomen speakers about their ideas, and shared some of the challenges our event faced with the TEDx Executive Team. My work culminated in the 3rd annual TEDxSUNYGeneseo event: Back to Basics. Armed with new insight and a commitment to innovation, my team worked to create an event that would challenge participants to consider ideas of simplicity amidst an increasingly complicated world. Attending TEDWomen, I gained a greater vision for the purpose of our event. What's more, the things I learned helped lay the groundwork for TEDxSUNYGeneseo to be an agent of change in the Geneseo community.

3L • 1 WELLES 138

SESSION CHAIR: CAROLINE HADDAD, MATHEMATICS

The 2016 Presidential Election: Why Were the Predictions and Results so Different?

ELINORE DUGUAY, JON HARWOOD, JONATHAN WEBER

FACULTY SPONSOR: CHI-MING TANG, MATHEMATICS

We will be displaying a statistical analysis of the 2016 presidential election. We'll begin with an overview of random sampling and its importance in statistical inference on both a national and statewide level. This will be related to the various polling methods used, and data gathered prior to the election. We will be examining the conclusions drawn from these polls that led to the unexpected predictions forecasted. Furthermore, we will explore alternative and nontraditional methods that can lead to more interesting predictions.

3M • 1 WELLES 140

SESSION CHAIR: ZACH BERUBE

Upstate New York Secession: A**COPLAC Digital Project****RACHEL GDULA, MARIA GERSHUNI**

FACULTY SPONSOR: PAUL SCHACHT, CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

As part of an online course through the Council of Public Liberal Arts Colleges, Rachel Gdula and Maria Gershuni are exploring the origins, motivations, and politics of the upstate New York secessionist movement. Currently, there are various groups calling for upstate secession, with various amounts of cohesion. Upstate New Yorkers claim that they have been adversely affected by policies created by New York City politicians, causing them economic and social hardship. Some have called for New York State to be split up into New York (downstate) and New Amsterdam (upstate). One of the largest disputes among various secession groups is where to classify upstate and downstate. Some say the southern border of New Amsterdam should stretch horizontally from Pennsylvania, while others say that New Amsterdam should encompass everything except Long Island and the NYC Metro Area. While the upstate New York secessionist movement is not based on ethnic identity, upstate New Yorkers share a cultural identity based on shared history as well as political, economic, and demographic factors. Gdula and Gershuni will present this movement by crafting their own website using digital storytelling tools to analyze the upstate NY secession movement and the various actors involved.

3N • 1**SOUTH 328**

SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

Dumpster Dive**SARAH KOWALSKI, PAUL MCDERMOTT, ALIDA MOONEY, ABIGAIL RITZ, CAROLINE SECHE, VANESSA HAAS**

FACULTY SPONSOR: DAN DEZARN, SUSTAINABILITY Geneseo Environmental Organization will be presenting their "Dumpster Dive" video about their interactive performance art installation and

reflection of consumption and waste disposal in Geneseo. This live installation, which will take place during Earth Week on Monday, March 17th from 4-6pm on the Union Patio, involves 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 includes the use of proper protective gear such as gloves, goggles and protective suits, which 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 transformed into a video, which exemplifies how much "trash" could have been recycled in our sample selection. By doing so we seek to promote positive environmental action on an individual level by encouraging students and faculty to reevaluate their personal consumption and recycling habits. This video is will be shared with the campus community in order to a visual impact of consumption and waste at Geneseo.

3O • 1**WELLES 24**

SESSION CHAIR: JESSE BENNETT

The Bioarchaeology of Health in Eastern Europe During the Middle Ages**NATALIE ZHENG**

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

The Bioarchaeology of health in Eastern Europe during the Middle Ages can be measured through the numerous remains found in various burial sites. This study also includes the results of my personal experience in Transylvania, Romania, where I did osteological research on a burial from Telekfalva, Romania. This personal case study focuses on Telekfalva Sir-22, which is one of the sixty-nine burials from the site. Along with this personal case study, research was done on other burials across Eastern Europe. The purpose of this study is to measure the impact culture has on human health. Studying the socioeconomic status

of the Middle Ages populations from Eastern Europe can give insight into the pathologies found in their skeletons. The history of the Middle Ages is taken into account to better understand how social, political, and resource stress contributes to poor health in Eastern Europe. Diet is also considered because it explains why certain immune deficient diseases were observed in these skeletal populations.

3P • 1**WELLES 26**

SESSION CHAIR: KAITLIN PFUNDSTEIN

Heggie and Scheer's *Moby-Dick*: An Operatic Adaptation**EMILY BUCKLEY-CRIST**

FACULTY SPONSOR: BROOKE MCCORKLE, MUSIC

There are countless adaptations of Herman Melville's 1851 novel, *Moby-Dick*, in many forms, including films, television series, and graphic novels. Composer Jake Heggie and librettist Gene Scheer's 2010 opera of the same name is a recent addition to the list of adaptations; critics have praised the opera since its Dallas premiere, describing it as "sumptuous and stirring" and "a masterpiece of clarity and intensity." Among the numerous changes necessary in transposing a story from text to the operatic stage, Heggie and Scheer make the significant decision to remove the narrative voice from Ishmael and place it in the orchestra, a move that adheres to Carolyn Abbate's argument that the orchestra and music itself acts as the narrator in opera. Ishmael (Greenhorn in the opera) experiences the events of the novel in real-time throughout the opera, as opposed to the retrospective account of the novel. These choices are inventive, but require prior knowledge of the novel for full appreciation. While this work can be analyzed as an opera in its own right, its source text holds such an esteemed place in the literary canon that the opera must also be examined as an adaptation.

SESSION 3 • ROUND ROBIN BLOCK 2 • 2:50 - 3:05 PM**3A • 2****WELLES 121**

SESSION CHAIR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

CRISPR-Cas9 Genome Editing: Teaching Tools to Promote Active Learning in Genetics**KATHERINE ROCHE**

FACULTY SPONSOR: ELIZABETH HUTCHISON, BIOLOGY

An Edgar Fellows presentation. Clustered regularly interspaced short palindromic repeats (CRISPR) are an adaptive immune system found in prokaryotes that can be used to facilitate genome editing in eukaryotic cells. The CRISPR system evolved in bacteria and archaea in order to integrate DNA of invading viruses into the prokaryotic genome as a memory for future invasions. These small sequences of the viral genome, called spacers, can

later be transcribed into RNA guides that cause cleavage of viral DNA by CRISPR-associated (Cas) proteins to protect the cell from infection. When inserted into a eukaryotic organism, the CRISPR-Cas9 system has the ability to precisely target a specific sequence of DNA and modify the genome by insertion or deletion. This revolutionary genome editing technique can be difficult for BIOL 222: Principles of Genetics students to understand. Therefore, teaching tools including visual aids, group questions, and a hands-on learning activity with multiple modules were created to promote better understanding of the CRISPR-Cas9 system. These tools were later presented to BIOL 222 students at SUNY Geneseo.

3B • 2**WELLES 123**

SESSION CHAIR: GANIE DEHART, PSYCHOLOGY

Sages-Femmes of Dakar, Senegal and Midwives of the United States through Firsthand Experience: The Differences in the Profession of Birthing an Ocean Apart**MARIA SUAREZ**

FACULTY SPONSOR: KODJO ADABRA, LANGUAGES AND LITERATURES

An Edgar Fellows presentation. In the West African country of Senegal, the profession of a midwife, or sage-femme, has an unparalleled major role in birthing and women's health. But according to the president of the National Association of Sage-Femmes of Senegal, Marième Fall, the current coverage ratio in the capital city of Dakar is one sage-femme for two thousand women of reproductive status while the World Health Organization recommends one per every five

hundred. Interviews with current sage-femme school administrators, instructors and students in Dakar, conducted during the summer of 2015, and substantial supporting literary research sustains findings about this struggling yet vital profession in Senegal. This presentation aims to first establish the prominence of sages-femmes within the Senegalese framework, then attempt not only to summarize their pivotal role, but also critically examine practical issues faced by these lifesaving professionals. To contrast, information about US midwifery gathered from research and interviews with local midwives will be presented. Surprising information about this field and its role in the healthcare system, as well as the obstacles it faces are discussed. In each country, the mother and baby's health is the priority but due to region and circumstances, reaching this goal is different and faces new obstacles.

3C • 2 WELLES 115

SESSION CHAIR: BETSY COLÓN, GRANTS MANAGEMENT

Self-discovery Through Sustainability

AUBRIE JOHNSEN

FACULTY SPONSOR: JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

This presentation will be about my entire ambassadorship. I received money to create a sustainable farm, but ended up finding myself first. This presentation will discuss what my ambassadorship was, and what it is turned out to be. It has opened my heart and mind to many new things. I went on a journey of discovering myself and bettering the local community around me. I explored western philosophy, moral philosophy, sustainable agriculture, and started to explore what our bioregion was. I explored local farms, created the Egarden on campus, and had internships with some really great sustainability oriented businesses (The Office of Sustainability and the Geneseo Farmer's Market). This project is supported by the Geneseo Student Ambassador Program.

3D • 2 WELLES 134

SESSION CHAIR: EMILY COLE, INTERNATIONAL PROGRAMS

Source Within Me

ALEXA FOX

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

For my presentation, I would like to use photos of myself and my sources and take videos of me interacting with sources all across campus for my overall video, with a provided voiceover in the video that has me discussing what I'm doing in the videos and why the sources pertain to my writing. I could use sources such as my friends, my RA, my favorite books, spots on campus that hold memories for me such as the gazebo and the Green, and song lyrics. Through examining my sources, I can possibly help other writers think of new sources for their own writing.

3E • 2 WELLES 119

SESSION CHAIR: JULIE RAO, INSTITUTIONAL RESEARCH

Applications of GIS in Ohio Archaeology

SYDNEY SNYDER

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

The purpose of this project is to study the application of Geographic Information Systems (GIS) to solve problems in Ohio Hopewell archaeology. An extensive bibliography of recent GIS applications in archaeology was created in order to examine how GIS had been used to successfully understand archaeological problems. From this bibliography I decided to use nearest neighbor and hotspot analysis as well as predictive modelling. The creation of two data sets helped explore these applications at different scales. A 50 acre distribution of surface artifacts was used to determine the applicability of nearest neighbor and other statistical analyses. A cluster of Ohio Hopewell sites from the Little Walnut Creek drainage was used to determine the applicability of predictive modelling to find likely habitation site locations from environmental parameters. As a result, GIS proved to be a useful tool for both nearest neighbor analysis and predictive modelling, but fell short when trying to do a hotspot analysis and in creating contour maps.

3F • 2 WELLES 128

SESSION CHAIR: KYLEE O'HARA

Prioritizing Conservation Easement Acquisitions in the Genesee Valley

BRANDYN BALCH

FACULTY SPONSOR: JAMES KERNAN, GEOGRAPHY

A critical objective of the Genesee Valley Conservancy (GVC) in Geneseo, New York, is to conserve important natural resources in the Genesee Valley watershed. One method by which this is accomplished is the acquisition of conservation easements on properties that are deemed high priority based upon their role in local ecology. A study was conducted in summer, 2016, in order to gain a deeper understanding of which parcels should be targeted for easement acquisition. The primary objectives of this study, through collaboration with the GVC Board of Directors and geospatial analysis using GIS software (ESRI ArcMap), were: (1) Analyze the extent to which each parcel in the GVC service area (n~27,000) does or does not fit the definition of "important natural resource," and (2) Make recommendations accordingly, which will aid the GVC in maintaining a proactive approach to conservation easement acquisitions in the Genesee Valley. Methodology was both qualitative and quantitative in nature, and the result was a visually intuitive map of priority areas for acquisition. GVC currently utilizes this map and the accompanying data table for resource allocation in continuing conservation efforts.

3G • 2 WELLES 131

SESSION CHAIR: CARLY O'KEEFE, INTL STUDENT & SCHOLAR SERVICES

Communicative Processes within Relational Termination and its

Effects on Face: An Application of Facework Theory

ERICA DOHERTY, DANIEL STERN

FACULTY SPONSOR: MEREDITH HARRIGAN, COMMUNICATION

Framed by Facework Theory (Goffman, 1967; Cupach & Metts, 1994), the present study sought to identify the communication processes that emerging adults perceive as face-threatening, as well as understand strategies used to maintain face within the context of a relational termination experience. A data set consisting of six interview transcripts showcased three communication practices that are perceived as face-threatening: a desire for autonomy, differing expectations, and perceived disrespect. Furthermore, three communicative facework strategies were identified: communication regulation, interpersonal management, and selective disclosure. Implications of the findings are discussed and suggestions for future research are provided.

3H • 2 WELLES 132

SESSION CHAIR: COREY WILKINSON

Targeting Candidate Genes for a Small-eye Zebrafish Mutant

NICOLE WINCHESTER

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

A chemical mutagenesis screen for eye defects in zebrafish revealed the good effort (gef) mutant. This mutant is characterized by normal morphology for the first two days post fertilization (dpf), followed by elevated cell death, most notably in neural, branchial arch, limb bud, and retinal cells. The gef mutants were found to have a 3-bp deletion in the chromosome assembly factor 1b (chaf1b) gene at the splice donor site of exon 3, resulting in severe protein truncation. Chaf1b is a subunit of the Chromatin Assembly Factor 1 complex which loads histones onto newly synthesized DNA during S phase, facilitating chromatin formation. Loss of Chaf1b function is believed to result in accumulation of DNA damage and triggering of tp53-mediated apoptosis. The recent development of the targeted genome-editing technique, CRISPR/Cas9, represents a method to knockout multiple genes. We developed a multiplex CRISPR DNA construct to determine the role Tp53 plays in structuring the gef phenotype. This five guide RNA vector will simultaneously target chaf1b to generate a gef phenocopy, tp53, puma, and caspase-3a to inhibit apoptosis, and tyrosinase to induce an albino phenotype as an indicator of knockout success.

3I • 2 WELLES 133

SESSION CHAIR: MARY HOPE, INTL STUDENT & SCHOLAR SERVICES

Genocide and Communication Narratives: Comparing the Rwandan Patriotic Front Narrative and the National Liberation Narrative That Emerged From the Rwandan Genocide

AMAL THABATEH

FACULTY SPONSOR: JAMES MOOR, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

For my paper, I will review literature to determine the main causes of genocide and the reasons why it occurs within countries. My research will focus on the case study of the Rwandan Genocide, and I will explore the reasons for the emergence of the genocide in Rwanda and identify narratives for the emergence. I will draw upon these narratives to discuss what they reveal about the nature of civil society, forms of governance, and ethnic politics in Africa. Questions that will guide my research: What is the framework that scholars have established for how genocide typically unfolds? How can this framework be applied to the genocide in Rwanda/how did the genocide occur in Rwanda? Identify and assess two competing narratives for the emergence of the genocide in Rwanda. What do these narratives assert about the nature of civil society, forms of governance, and ethnic politics in Africa? Which is persuasive and why?

3J • 2 SOUTH 338

SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

An Analysis on the Efficacy of Combination Antibiotic Therapy in Treating MRSA

RYAN CARPENTER, ALEX WEBBER

FACULTY SPONSOR: YUSUF BILGIC, MATHEMATICS
GREGG HARTVIGSEN BIOLOGY

The purpose of this study is to investigate which combinations of antibiotics are most efficacious when treating a patient for a hospital acquired MRSA infection. Data were obtained from the freely available MIMIC III database, from the Beth Israel Deaconess Medical center in Boston Massachusetts. Data sets from the database were merged by the patient identifiers HADM_ID and SUBJECT_ID and filtered for variables pertinent to MRSA infections, antibiotic usage, and patient demographic information using. All data formatting and analysis was completed using the statistical software R studio. We share the results of how the combinations of antibiotics and the doses per combination correlate with patient recovery time. We also explore how combinations containing one or more penicillin-type antibiotic(s) correlate with efficacy in treating MRSA.

3K • 2 SOUTH 340

SESSION CHAIR: HANNAH ZIMMER

The Effects of Neuromuscular Electrical Stimulation on Leg Strength Post-ACL Reconstruction: a Novel Approach

ADAM HANSEN

FACULTY SPONSOR: SARA BURCH, BIOLOGY

Anterior Cruciate Ligament (ACL) Reconstruction is a minimally invasive procedure, in which the orthopedic surgeon removes the torn ACL and replaces it with one of many possible autografts. The recovery following this procedure can be quite difficult for the patient in terms of pain and long term strength deficits. The role of Neuromuscular Electrical Stimulation (NMES) is highly disputed among therapists due to the wide range of results, some showing positive influences, some showing

no distinct effect, and others even negative results. 40 patients from OrthoNY were randomly placed into two treatment groups: Group 1 which received an additional NMES unit to use at home and in a clinical setting and Group 2 used NMES in the clinical setting only. Patients were tested at 2 separate times: preoperative and 6 week postoperative. At all testing times a one legged one repetition leg press maximum was recorded. In addition to a leg press measurement, the leg girth (width of the thigh) were measured at 6 cm and 15 cm proximal to the superior pole of the patella. The results of this study showed a significant increase in strength for Group 1 ($p=.046$) Leg girth measurements were not significant at 6 cm ($p=.16$).

3L • 2 WELLES 138

SESSION CHAIR: CAROLINE HADDAD, MATHEMATICS

The Electoral College, Its Flaws, and How they Could be Fixed

WESLEY EBERSOLE

FACULTY SPONSOR: AARON HEROLD, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Ever since it's Inception the electoral college system of the United States has been criticized as untrue to the Democratic nature of our nation's founding. When the Constitution was ratified in June of 1788 it replaced the much weaker Articles of Confederation as the ruling document of these United States. However to prevent abuses by the government, a series of amendments were put into place. Contrary to this last statement however in order to override the rule of the masses when necessary, the Electoral College was established. Two of the last five presidential elections were won by a candidate who did not have the popular vote and although that might not seem like a lot that is a 40% failure rate of a system that is supposed to predict the will of the people. Through this evidence and much more we can establish that the Electoral College is flawed as it stands and it requires some revisions. This presentation will delve into how the Electoral College works and some proposed methods of fixing it.

3M • 2 WELLES 140

SESSION CHAIR: ZACH BERUBE

Sustainable Environmental Resource Management and Rural Entrepreneurship in Borgne, Haiti

KYLE FLETCHER

FACULTY SPONSOR: WESTON KENNISON, ENGLISH
JOE COPE HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

I present work completed as SUNY Geneseo Ambassador to rural, Borgne, Haiti. I present quantitative and qualitative information documented regarding entrepreneurial, fish-farming activities. I present an exploration of monthly strategies, derived from local, ecological knowledge-bases, to manage environmental resource harvesting. And, I present findings from a set of point-quarter transect analyses, which are, to our knowledge, the first, formal, ecological assessments completed on a small, back reef off the coast of Borgne.

3N • 2 SOUTH 328

SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

Opera Kids: SUNY Geneseo Young Artist Workshop

FRANCESCA DIGIORGIO

FACULTY SPONSOR: JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

The lights flickered, signaling the buzzing audience of nearly 600 to settle into their plush, velvet seats. A figure dressed in black tails ascended from the orchestra pit and my students' eyes widened. The maestro raised his baton, and with one elegant flick, the glorious overture of Verdi's *La Traviata* flooded the room. Opera Kids: SUNY Geneseo Young Artist Workshop was an immersive educational experience designed for students in grades 4-5 in the Livingston County Area. In this program, the Finger Lakes Opera Company served as the connecting bridge between our classroom and the world of professional opera. Through participatory games and activities, and an F&Q with profession performers, students prepared to attend and appreciate a live performance of *La Traviata*. The long-term objective was that participation in this program would make the world of opera more accessible and encourage students and their families to attend musical events at SUNY Geneseo and in their communities. Throughout the Opera Kids workshop, our class saw the world from the perspective of various characters, composers and performers throughout history. In the process, students had assembled an arsenal of strategies to navigate the following day's performance as well as other music performances in the future. This project is supported by the Geneseo Student Ambassador Program.

3O • 2 WELLES 24

SESSION CHAIR: JESSE BENNETT

Simulating Quantum Phenomena on the Macro Scale

ZACHARIAH BARFIELD, CHRISTOPHER RENSKERS
FACULTY SPONSOR: GEORGE MARCUS, PHYSICS & ASTRONOMY

Quantum mechanics is one of the most phenomenal topics in physics and many strange experimental results come about because of the particle-wave interactions of quantum particles. Through studying an analogous macro-scale system based in fluid dynamics we can visualize and better understand some of these phenomena. A system was created to bounce a silicone oil droplet on a vibrating bath. The bouncing droplet interacts with waves traveling on the surface of the silicone oil, causing the droplet to move around the cavity. Due to the particle-wave interactions taking place, the probability distribution of the droplet is similar to that of an electron in an infinite circular corral. By varying the depth and size of the silicone oil bath, we studied how the system changed to better understand the underlying particle-wave interactions. Understanding these phenomena serves to make quantum mechanics less abstract.

3P • 2**WELLES 26**

SESSION CHAIR: KAITLIN PFUNDSTEIN

The Impact of Low Socioeconomic Status on the Mental Health and Self-Efficacy of College Students

HAERREEM HYUNFACULTY SPONSOR: MELANIE MEDEIROS,
ANTHROPOLOGY

As an intersectional phenomenon, health is affected by race, class, gender, and other social determinants. This ethnographic study examines the impact of low socioeconomic status on the

mental health and self-efficacy of college students. Pre-existing literature is reviewed to provide background knowledge of intersectionality, and interviews with SUNY Geneseo students of low socioeconomic status provide first-hand accounts of structural inequality and life experiences.

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

3A • 3**WELLES 121**

SESSION CHAIR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Physics through the Ages: A Visual Explanation of Scientific History

MATTHEW RYBECKY

FACULTY SPONSOR: THOMAS MACPHERSON, ART HISTORY

An Edgar Fellows presentation. Physics as an experimental science began only recently in the history of humanity. Before then, the nature of the universe was a philosophical pursuit. With Galileo and other seventeenth century natural philosophers, science began to progress. This presentation shows that progression through the portraits of important figures in physics. Their science is also shown through tabletop demonstrations in a way that ties a face to a discovery. We can see the humanity of the men who have revealed the majesty of the world that we live in.

3B • 3**WELLES 123**

SESSION CHAIR: GANIE DEHART, PSYCHOLOGY

Control of Schistosomiasis in Ghana: Behavioral and Lab-Based Approaches

FABIAN THOMPSON

FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

An Edgar Fellows presentation. Schistosomiasis is a disease caused by parasitic worms that use freshwater snails as an intermediate host. Affecting almost 240 million people worldwide, the disease is most prevalent in tropical and subtropical areas, especially in poor communities without access to safe drinking water and/or adequate sanitation. The sizable number of individuals infected and at-risk of infection worldwide make efforts to control schistosomiasis imperative. In a lab-based approach to control of schistosomiasis, an attempt was made to establish the life cycle of the parasite *Schistosoma haematobium*, derived from *Bulinus truncatus* snails in the small village of Tomefa in the Greater Accra Region of Ghana. While unsuccessful, this was done as a necessary first step in facilitating future control efforts in the Tomefa area. In a behavioral-based approach to control, I analyzed data from Knowledge, Attitudes, and Practices Surveys administered in Tomefa. Doing so allows for the creation of methods of disease control based on the behaviors of the vulnerable population. Working in tandem, these approaches can facilitate efforts to decrease prevalence of schistosomiasis on both a local and global scale.

3C • 3**WELLES 115**

SESSION CHAIR: BETSY COLÓN, GRANTS MANAGEMENT

A Pentadic Analysis of Aguinaldo's "Liberty, Equality, Fraternity"; An Extension of a Masonic Vision of Filipino Independence

THERESA GIBBONS

FACULTY SPONSOR: ATSUSHI TAJIMA, COMMUNICATION

Emilio Aguinaldo y Famy's manifesto "Liberty, Equality, Fraternity" served as one of the first formal manifestos denouncing Spanish rule and establishing the ideals of the Filipino Republic. The artifact not only served as the cultural and ideological foundation of the then infantile Philippine revolution, but also became a hallmark document over cultural contention over Emilio Aguinaldo's legacy in respect to Filipino nationalist movements. An application of Kenneth Burke's dramatic pentad and Lloyd Bitzer's Rhetorical Situation provides a clearer rhetorical interpretation of Aguinaldo's motives as a visionary leader. This rhetorical vision of Aguinaldo's revolution serves as a pathway to better understand how Aguinaldo's Masonic experience shaped his vision of the revolution and helps clarify the oftentimes complex and muddled historiography of Aguinaldo's legacy.

3D • 3**WELLES 134**

SESSION CHAIR: EMILY COLE, INTERNATIONAL PROGRAMS

The Joint Comprehensive Plan of Action's Effect on Iranian State Funding of Palestinian Islamic Jihad

JACLYN SHAW

FACULTY SPONSOR: ANAND RAO, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Based on the available data, I argue that the Joint Comprehensive Plan of Action (JCPOA) has led to an increase in Iran's funding of Palestinian Islamic Jihad (PIJ), examining this dynamic as a principal-agent relationship. While analyzing the relevant data, it is important to note that there are many factors involved in whether and to what degree Iran funds PIJ that cannot be completely controlled for. However, these variables will be accounted for and noted in this qualitative analysis of financial changes in the principal-agent relationship between Iran and PIJ and Iran's economy since the implementation of the JCPOA. This analysis of Iran's material support for PIJ since the signing of the JCPOA and Iran's current political and economic situation indicate that the lifting of many economic sanctions against the Islamic Republic of

Iran by the United States, European Union, and United Nations (as dictated by the JCPOA) has led to an increase in Iranian funding of PIJ. It must be noted that, due to the covert nature of terrorist groups' operations and the opacity of Iran's funding of these organizations, this research necessarily relies on incomplete, but sufficient, information to form a meaningful analysis.

3E • 3**WELLES 119**

SESSION CHAIR: JULIE RAO, INSTITUTIONAL RESEARCH

U.S.-Canada Trade and NAFTA, 20 Years Later: Is There Still a Border Effect?

DAVID TERNER

FACULTY SPONSOR: MANSOKKU LEE, BUSINESS

This paper examines the extent to which the existence of national borders in general, and the US-Canadian border in particular, curbs the volume of international trade. This eponymous "border effect" was first detected by economists in the mid-1990's who used standard (e.g. gravity) trade models to analyze pre-NAFTA trade flows between U.S. states and Canadian provinces. Despite few, if any, formal barriers to trade, economists discovered that intra-national trade volumes tended to be 10-20 times larger in magnitude relative to international trade volumes after controlling for regional income, distance, and other relevant factors. This so-called "border effect" indicates the degree to which international markets are segmented by political boundaries, a larger border effect indicates more formidable barriers to achieving economic integration across international markets. The project analyzes the long-term effect of NAFTA's implementation on the magnitude of the U.S.-Canadian border effect. I contribute to preexisting research efforts by utilizing a comprehensive and up-to-date dataset, incorporating additional explanatory and employing empirically robust modeling techniques. In addition to providing contemporary insight into North American trade patterns, the project investigates the broader implications of the free-trade agreements' efficacy.

3F • 3**WELLES 128**

SESSION CHAIR: KYLEE O'HARA

The Poisson Distribution: The History Behind the Function

CODY SHANK

FACULTY SPONSOR: JEFF JOHANNES, MATHEMATICS

The Poisson Distribution plays an important role in the world of probability and has various applications. The distribution is used to find the

probability of a given number of independent events happening over a span of time, or space. Siméon Denis Poisson discovered the function. However, history has revealed that his findings don't have the biggest influence on the distribution. The Poisson Distribution found its importance when Ladislaus Von Bortkiewicz used the function on a study of the deaths of soldiers related to horse kicks. Sometimes you must look beyond the name of something to understand its true history.

3G • 3 WELLES 131

SESSION CHAIR: CARLY O'KEEFE, INTL STUDENT & SCHOLAR SERVICES

A Study of Senegalese Hospitality Through First Hand Experience

MAGGIE FRANCESE

FACULTY SPONSOR: KODJO ADABRA, LANGUAGES AND LITERATURES

Senegal, the most western African nation, is well-renowned for its cultural values of hospitality. Known as the guardians of Terre de la Teranga [Land of Hospitality], the Senegalese welcome people of all backgrounds and race with open arms as friends and family to their beautiful nation. With Islam as a pillar of culture, there are aspects of the religion embedded in everyday life that reflect the country's concept of hospitality. The Senegalese find solidarity in their understanding of hospitality and are made up of different ethnic and religious groups that live harmoniously together. Using their value of family and tea ritual of attaya, the Senegalese have opened up their borders to a new wave of tourism that has many implications of globalization and diffusion of culture. Interviews with Senegalese citizens and immigrants conducted during the summer of 2016 and supporting literary research give significance to the important cultural value of hospitality in Senegal. First, this paper will discuss the origins and history of the concept of hospitality in Senegal. Next, we will provide a comparison between Senegal and the United States. Lastly, this paper will explore how globalization has affected contemporary Senegal, and its value and practice of hospitality.

3H • 3 WELLES 132

SESSION CHAIR: COREY WILKINSON

Cooking with Rocks the Hopewell Way: Experimenting with Earth Oven Efficiency

TESSA HORN

FACULTY SPONSOR: PAUL PACHECO, ANTHROPOLOGY

My research generates data to show which attributes make an earth oven successful and efficient. To answer this question, I built earth ovens of different size, shape, and depth. A thermocouple was used to monitor the temperatures throughout each cooking event. This allowed me to compare the effectiveness of the different ovens using temperature vs. time graphs. The size of the ovens and the quantity of rocks used were extrapolated from archaeological data from three Ohio Hopewell habitation sites: Balthaser Home, Brown's Bottom #1, and Lady's Run. By recreating earth ovens of varying shapes, sizes, and depths, I attempt to explain how different

☞ Promotes sustainability

combinations of variables affect the efficiency of earth ovens by comparing how these differences are reflected in the archaeological record. My continued research uses data from previous trials to go a step further and predict temperature outcomes of earth ovens.

3I • 3 WELLES 133

SESSION CHAIR: MARY HOPE, INTL STUDENT & SCHOLAR SERVICES

Ecotheology in the South Pacific

SHANNON KEANE

FACULTY SPONSOR: SETH CAVELLO, GEOGRAPHY

The projected rate of climate change in this century is far more than anything experienced on Earth in the last 10,000 years. Rising levels of carbon dioxide and other heat trapping gases in the atmosphere have warmed the Earth and are causing significant impacts such as, rising sea levels; particularly in the South Pacific. Because the physical effects of climate change are prevalent throughout Oceania, a heightened sense of the value of life in the environment has become a prominent mentality. When discussing the impacts of climate change, culture as a component is rarely mentioned. An important component of culture is the role of religion and when culture and religion are evaluated on an environmental basis, the result is ecotheology. Ecotheology becomes particularly important in the South Pacific, because the people of the Pacific understand that it is not by the hand of God that the flooding is happening, they know it is human induced. It is with this understanding that The Pacific Churches Consultation was created and Otin Tai declaration was established. The value of culture lies in its ability to connect generations of people over time, while remaining flexible enough to interact with changing environmental and social conditions.

3J • 3 SOUTH 338

SESSION CHAIR: TRACI PHILLIPS, GRANTS MANAGEMENT

Proof of Quantum Mechanics using Correlated Photons

ETHAN TURNER

FACULTY SPONSOR: GEORGE MARCUS, PHYSICS & ASTRONOMY

The quantum mechanical properties of correlated photons produced from a nonlinear crystal were observed in an effort to construct a lab for Geneseo's Physics Department curriculum. A correlated pair of 810 nm photons are generated via a spontaneous down converting nonlinear crystal from 405 nm laser photons. The correlated photons are transmitted or reflected through a beam splitter and collected in coincidence with a set of avalanche detectors. The anti-correlation factor of the photons determined from the coincidence rates of the photons was calculated to be 0.74 0.17, which being less than one, is quantum mechanical. Quantum Mechanical properties could further be seen using a Mach-Zehnder interferometer to see single photon interference.

3K • 3 SOUTH 340

SESSION CHAIR: HANNAH ZIMMER

Ophelia's Legacy

KATHERINE ZITO

FACULTY SPONSOR: MELANIE BLOOD, ENGLISH
William Shakespeare's Ophelia--Hamlet's spurned lover who goes mad and drowns herself--is an important cultural representation of female madness. I synthesize findings about instances of Ophelia's representation-- including portrayals of the character in adaptations of *Hamlet*, depictions of the character in other media including visual art, and allusions to the character and her associated imagery in original works--and what those representations communicate about historically contingent understandings of women and "madness". Biologically feminine "hysteria" of the womb would have been the contemporary understanding of Ophelia's distress, and while modern psychiatry's understanding of mental illness in women has developed beyond hysteria, Jessica Heppler argues that misogynistic ideas about women's behavior are still represented in psychiatry and moves towards a more sociologically grounded understanding of women's emotional distress. These shifting understandings of female madness are reflected in portrayals of Ophelia and her imagery. My research is part of the ongoing conversation between psychology and sociology regarding the origin and pathology of women's distress. By exploring this conversation through the character of Ophelia, I show how Shakespeare's texts provide artists with a lexicon of imagery to communicate diverging ideas about gender and mental illness; exemplifying the dynamic quality of Shakespeare's works and their ongoing relevance.

3L • 3 WELLES 138

SESSION CHAIR: CAROLINE HADDAD, MATHEMATICS

Ancient Indian Performance: The Expression of Nine Emotions

MALLIKA SHAH

FACULTY SPONSOR: JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

For my ambassadorship, I travelled to Kerala, India to attend a workshop on acting techniques in Kudiattam, the ancient temple performance art of the state of Kerala. The workshop, titled Navarasa Sadhana, teaches performers the expression of the nine emotions as ritualized and written in the ancient Indian dramaturgical text called the Natyashastra. This project is supported by the Geneseo Student Ambassador Program.

3N • 3 SOUTH 328

SESSION CHAIR: JEREMY HALL, INSTITUTIONAL RESEARCH

An Analysis of Daily and Seasonal Temporal Variation of Soundscapes in Western New York

JEFF DOSER

FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY
Analysis of soundscapes may provide a way to quantify the biodiversity and examine the impact of anthropogenic noise on an area. I present analyses of the seasonal and daily temporal variation of four soundscapes in western New York. I determined whether temporal variation of biodiversity was reflected in these soundscapes by

using soundscape-derived measures of biodiversity. I obtained three 30 minute recordings each recording day -- morning, afternoon, and evening -- at both the center and edge of each habitat. I performed these recordings once in the early summer from May-June and once in the late summer from August-September. Raven Pro software was used to determine the amounts of different types of sounds in the soundscapes. Using R Statistical Software, I determined the Acoustic Diversity Index and the Acoustic Complexity Index for each soundscape. I compared these values across the daily and seasonal time periods to understand how these measures of diversity changed over time. We present this research as a first step toward achieving a thorough

understanding of the temporal variation of western New York soundscapes that is required to accurately predict how organisms and environments will react to the environmental stresses found in modern acoustic environments.

30 • 3 WELLES 24
SESSION CHAIR: JESSE BENNETT

Vietnam: Its Beauty and Its Problems

DUNG NGUYEN
FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN,
ENGLISH

Every country has its own beauty and distinguished culture. In this presentation, I would like to introduce the beauty of my country - Vietnam. The information covers the basic understanding of my country ranging from traditional holidays, clothes, food, to several beautiful places. Moreover, I also emphasize the current problems which should be resolved by the government in Vietnam. The problem of traffic, education, freedom of speech, and pollution represent the hotly debate in my country. The purpose of pointing out these issues is to expose the reality that people in my country confront in their daily lives.

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

4A • ANTHROPOLOGY BAILEY 103

SESSION CHAIR: JENNIFER GUZMAN,
ANTHROPOLOGY

Language in the Field: Perspectives on Spanish Language Ethnographies

MARY RUTIGLIANO
FACULTY SPONSORS: JENNIFER GUZMAN,
ANTHROPOLOGY AND KRISTI KRUMRINE
ANTHROPOLOGY

Students working on anthropological field research abroad require not only linguistic competence in the local language but also adequate understanding of local interactional norms to work with participants in culturally appropriate ways. In this presentation, I discuss these requirements of linguistic and cultural competence through an exploration of my experiences as a research assistant working on two anthropological projects. First, I discuss linguistic competence in relation to my work with Dr. Jennifer Guzman to identify, transcribe, and analyze illness narratives that were recounted in interviews conducted in southern Chile with indigenous Mapuche Parents. Second, I compare this analysis experience to my field experience as an assistant to Dr. Kristi Krumrine in southern Mexico. On this project, I was an interpersonal bridge between the research group and members of the community, and served as an interpreter during interviews. This research, funded by the Dean Johnston Research Assistantship, documented perspectives on medicinal plant use in the Maya community of Cobá, Mexico. While both of these experiences required a high level of Spanish aural comprehension, the cultural and interpersonal knowledge they required varied. I'll touch on the processes of ethnography and conclude with suggestions to foster linguistic and communicative competence for student researchers.

Ideology and Postvernacularity in 21st Century Yiddish Pedagogy

ALEX MCGRATH
FACULTY SPONSOR: JENNIFER GUZMAN,
ANTHROPOLOGY

Since the Shoah, the role of the Yiddish language has shifted from the everyday vernacular language of Ashkenazi Jews (the *mame loshn*) to a symbolically loaded, post-vernacular linguistic

system. Additionally, the prominence of secular Yiddish language courses in universities around the world, coupled with the fact that the population of native Eastern European Yiddish speakers is dwindling, make the goals of such classes unclear, as the majority of Yiddish students will not have a community of practice outside of the classroom. This article, based on fieldwork from a beginner's Yiddish course in Warsaw, Poland, examines the ideologies latent in Yiddish pedagogy in Poland and the global Jewish diaspora in general. Using the frameworks of memory studies, language revitalization, and imagined communities, this paper proposes a multidimensional approach to Yiddish in the 21st century, one that considers the Yiddish language as being at once functional and deeply symbolic. The ideological and grammatical dissonances between 'archival Yiddish', the Yiddish as it was spoken by native speakers from Eastern Europe, and 'productive Yiddish', the Yiddish that it is taught in summer seminars and classrooms around the world are given particular attention. This project is supported by the Geneseo Student Ambassador Program. *Selected for presentation at Migrations of Culture, Pittsburgh, PA.*

4B • BIOLOGY-MATHEMATICS 2 ISC 131

FACULTY SPONSOR AND SESSION CHAIR: GREGG HARTVIGSEN, BIOLOGY

Effects of Disease and Habitat Loss on the Main Food Source of Iberian Lynx

CLAUDIA KOLAKOWSKI, SARA TREACY, EMILY TIMKEY
FACULTY SPONSOR: CHRISTOPHER LEARY
MATHEMATICS

The Iberian Lynx, *Lynx pardinus*, is an endangered species located in Southern Spain that preys primarily on the rabbit species *Oryctolagus cuniculus*. *Oryctolagus cuniculus* populations have been declining due to the recent outbreak of two diseases, myxomatosis and rabbit hemorrhagic disease (RHD) as well as a loss of habitat. We investigated the effects of the diseases and habitat loss on the rabbit population and in turn the Iberian Lynx population. The decline in rabbit populations due to disease was simulated using an SIR model. The effects of habitat loss on *O.*

cuniculus populations were also determined using a metapopulation model. The effects of the rabbit population decline on the Iberian Lynx were modeled by a Lotka-Volterra predator prey model. The results from our models indicates that, in order to preserve the endangered Lynx, the rabbit population must be large enough to support a growing Lynx population. Introduction of vaccines against RHD and myxomatosis were modeled and compared to each other for effectiveness in increasing the number of rabbits in the Lynx territory. With these results, we can determine what the best method for increasing the *O. cuniculus* population and thus the Iberian Lynx population will be.

Comparison of Discrete Models of Generic and Breast Cancer Tumor Invasion

YI LIU CHEN, MATTHEW COLLIN, STEVEN SICARI, NAOMI WILSON
FACULTY SPONSOR: CHRISTOPHER LEARY
MATHEMATICS

Tumors can grow at various rates and in unpredictable directions. Certain enzymes have been shown to degrade the ECM (extracellular matrix), allowing more space for the tumor to grow. Mathematical models can be used to better predict tumor growth by adjusting various parameters to reflect real life data. The two discrete models we used which considered the interaction of three dependent variables: tumor density, ECM concentration, and concentration of ECM degrading enzymes produced by the tumor. These variables are parameterized in time and space. Our first model parameterized extracellular matrix makeup and matrix degrading enzymes to predict tumor invasion, while the second model was derived from a partial differential equation model and uses the same parameters to specifically describe tumor invasion into breast tissue. For each model, we identified a theoretical threshold of the concentration of the extracellular matrix leading to tumor invasion.

Modeling the Pesticide Treatment and Spread of Teasel

JONATHAN KORDIYAK
FACULTY SPONSOR: CHRISTOPHER LEARY
MATHEMATICS

Teasel (*Dipsacus fullonum*) is an invasive plant species from Europe that often outcompetes native plants in recently disturbed ecosystems. In 2002 the Missouri Department of Conservation (MDC) indicated that the spread of teasel within the United States has been expedited by the use of highway lawnmowers. The MDC has already advocated early identification and subsequent pesticide application as a viable solution to this spread. Additionally, A study performed by Patricia Warner (1975) produced a discrete-time model of teasel growth under ideal conditions. However, it is known that teasel seeds do not travel farther than 1.5 meters without assistance. Therefore, a proper model of teasel growth must also consider the limited dispersal range of the plant's seeds. I have created a spatial model that takes the spatial and biannual life history of the plant into account. I incorporated a pesticide treatment into my model that initiates at the time of my choosing. I have quantified the success of this treatment within the spatial model by beginning the treatment at different time steps. I hypothesize that the pesticide treatment will lose its effectiveness if started later rather than sooner.

Modeling the Spread of Leptospirosis in Canines Incorporating Vaccination and Risk Factor Control ☞

JENICA ACHETA, TYLER BELL, SAM HERAGHTY, JASON LANG

FACULTY SPONSOR: CHRISTOPHER LEARY
MATHEMATICS

Leptospirosis is a bacterial infection transmitted through contaminated water, soil, or the urine of infected animals. Domesticated dogs are at high risk of infection which can ultimately lead to death. Recently in the United States incidence of canine infection has increased seven-fold from 2000 to 2007, demonstrating the need for a greater understanding spread of the infection. In order to investigate the risk factors and potential efficacy of vaccination, a compartment based SIRV model is used, with differential equations defining movement between susceptible, infected, recovered, and vaccinated populations. Additionally we created a network model which demonstrates the spatial aspects of infection within a population. Our models suggests that vaccination with annual boosting significantly reduces the chances of a dog becoming infected with the bacteria. Additionally, mitigating known risk factors such as contact with contaminated water and controlling rat populations, which act as reservoirs for the bacteria. For infected populations our models suggest timely symptom recognition and antibiotic treatment improves survival rate in canines.

4C • ENGLISH WELLES 111 Disability Representation in *Extremely Loud and Incredibly Close*

FACULTY SPONSOR: GILLIAN PAKU, ENGLISH
SESSION CHAIR: MEGAN GRANT

Extremely Loud and Incredibly Close: Trauma and Young Students KAITLIN PFUNDSTEIN

In my final paper for English 427: Literary Representations of Disability, I explored Jonathan Safran Foer's novel *Extremely Loud and Incredibly Close* and the impact of trauma on young people. Reading the novel through the lens of an educator's perspective, there is an interesting conversation surrounding the different ways in which the characters try to help Oskar, the main character, an 8 year old whose father died in the September 11th, 2001 attack on the World Trade Center.

The Individuality of Loss: Examining Absence in *Extremely Loud and Incredibly Close*

EVA PELLEGRINO

In this essay, I look at the function of loss in the novel *Extremely Loud and Incredibly Close*, by Jonathan Safran Foer. I believe that Foer is trying to show how loss operates on the individual level; that there is no one way to experience loss because it is experienced differently depending on the individual. In this essay I specifically talk about Foer's decision to include many different letters from the characters, and the effect that this has on the novel. Foer uses these letters to convey a universal theme of absence by deconstructing our notion of how an epistolary novel typically functions; to demonstrate reciprocity between characters and provide insight into understanding a third person narrative, but instead uses letters to convey a universal theme of absence.

Extremely Loud and Incredibly Close WHAT? An Examination of Narrative Rupture and Failed Communication

SAMI STERN

In his novel, *Extremely Loud and Incredibly Close*, Jonathan Safran Foer attempts the impossible, to capture the ineffable quality of a grieving city following the horrific events of September 11th. But how does one put to words that which, by definition, cannot be described? Foer uses the communication disorders of his two main characters, autism and mutism, to imagine a world in which reciprocal conversation is impossible. This creates what Michael Bérube terms a disabled narrative, or a story that is predicated by disability. In order to express what his characters cannot, Foer relies on both metatextual and visual elements. These narrative ruptures sometimes baffle and disturb, pulling the reader out of the very story in which they are attempting to immerse themselves. This paper examines Foer's use of these techniques and their effectiveness at capturing both individual and group trauma.

Distractions from Autism Coding in *Extremely Loud and Incredibly Close*

MEGAN GRANT

In this essay, I discuss Jonathan Safran Foer's intent regarding how he constructs his narrative around his autistically-coded protagonist. I believe that Foer constructs his novel in an unconventional, convoluted manner so readers are too busy attempting to follow the narrative to evaluate Oskar's potential autism spectrum disorder (ASD). Foer's intent, I suspect, is to keep critics of his representation of ASD off of his trail so he doesn't

lose publicity or money due to the inaccuracies and metaphorization of autism in his novel.

4D • ENGLISH WELLES 119 Dreaming, Questing, and Resisting in Medieval Literature

FACULTY SPONSOR: GRAHAM DRAKE, ENGLISH
SESSION CHAIR: OLIVIA BINDA

Dream Vision in Medieval Literature: Instructing Medieval Peoples and Their Culture

MARGARET PIGLIACELLI

This paper discusses the appearance and purpose of dream vision within Medieval English texts. I identify and explain the cultural background of many uses of dream vision through different examples of poetry and prose. Works such as *King Horn*, "The Wanderer", and *Piers Plowman*, among others, are used to explain reasons why dream vision was used and how it informed the larger culture of the Medieval period. Dream vision was used to console and instruct readers about various subjects, as well as provided a link between the mortal and divine worlds.

Lollard Antifraternalism and the Literary Culture of Late Fourteenth and Early Fifteenth Century England

NATE BARR

This paper examines the intersection of Lollardy and antifraternalism in the late fourteenth century, using examples from works such as *Piers Plowman* and *The Canterbury Tales*.

4E • HISTORY STURGES 106 East v. West: An Analysis of Shenzhen and Western Views on Chinese Capitalism

FACULTY SPONSOR: RYAN JONES, HISTORY
SESSION CHAIR: ADAM PEASE

ADAM PEASE

The presentation examines Chinese Capitalism as it functions within Special Economic Zones. There are case studies that will be presented which outline how China's unique form of Capitalism functions within the city of Shenzhen. Shenzhen is China's largest manufacturing center and on pace to become the largest city within China. Due to its status Shenzhen and its practices of Capitalism have been heavily critiqued by the West. The presentation will include examinations of western media, such as the New York Times, and analyze how they have perceived the idea of Capitalist cities within China.

4F • ENGLISH BAILEY 105 Guided Poetry Source Tours 4

SESSION CHAIR: WILLIAM ANTONELLI

Writing Self into Space: Blackness in Nature ☞

CHLOE FORSELL

FACULTY SPONSOR: LYTTON SMITH, ENGLISH
American Environmental Thought is a standard course taught at most universities within the Environmental Studies discipline; it is not

controversial to have this discourse in American colleges as a place for students, for young writers and intellectuals, to explore environment, ecology, and nature in relation to self. Yet recent National Parks' Service data emphasizes the ways black and minority populations visit National Parks. Such facts raise questions about what might be missing from current academic practice. Is there a place for blackness in this field of study, for black people as students, as authors, as contributors in ecological and environmental discourse? Even more sinister a question, is there a place for blackness in this exploration of nature and self? Using *Black Nature: Four Centuries of African American Nature Poetry* as a point of reference, this presentation/discussion of writing self into space will explore how decades of black nature poetry have sought to reclaim or redefine the nature space in terms of blackness - or rather, to write black bodies and experiences into this nature space. Beginning indoors, this presentation will be in motion, attendees expected to take the discussion to outside spaces, ending with an exercise in writing self into space.

Trauma as a Source of Art

AMANDA AMEEN

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

This presentation will demonstrate how trauma, particularly sexual assault and childhood sexual abuse, can be a major source material for poetry. I plan to portray trauma through both the perpetrator and victim. The former will be through the form of interview with a previously selected anonymous volunteer who has been made aware of the purpose of the interview and who has admitted to having pedophilic urges which will be recorded prior to the presentation and shown visually. Note that this interview will also include lasting effects of his actions and his acknowledgements that what he did was wrong. The latter will be through the form of poetry written by a survivor of childhood sexual abuse and rape regarding the lasting effects including, but not limited to, struggles with mental illnesses such as PTSD, depression, and anxiety, impacts past abuse can have on present relationships, and navigating through present rape and pedophilic culture. Note that there will be triggering warnings for this presentation, as it will have to do with childhood sexual abuse, sexual assault, and rape. Attendees are welcome to walk in and out of this presentation at their discretion.

4G • SOCIOLOGY BAILEY 104

Exploring Sociological Aspects of Child Development

FACULTY SPONSOR AND SESSION CHAIR: ANNE EISENBERG, SOCIOLOGY

Identifying Key Factors in Socialization for Foster Children and New Resarch Directions

EMMA GERROL, EMILY REITER, BRIDGET DOONEY, HUNTER SIMMS, MATTHEW VOLCY, JORDAN WILLSON

Through research readings, we have been exploring the sociological dimensions of child development for foster children. The members of the research group will each discuss a specific

factor that shapes primary and secondary socialization for foster children as well as proposed research directions to explore these factors. This area of research is inter-disciplinary as it bridges the extensive research and knowledge of developmental child psychology with the theoretical and empirical knowledge of sociological social psychology.

4H • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 121

From Failed to Fabulous: Ways to Achieve Stability in the Democratic Republic of Congo

FACULTY SPONSOR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
SESSION CHAIR: PATRICK KANZLER

NATHALIE KALUMBWE, JILLIAN PALMER, STELLA ODURO

Almost 60 years after its independence, the Democratic Republic of Congo has had many difficulties stemming from both domestic and international policies that are undermining democratic processes and institutions. The post-colonial history and volatile political landscape of the Congo has been the subject of much research and discourse since its years under the dictatorship of Mobutu Sese Seko. In fact, in 2016, the Fragile State Index listed Congo as a failed state for its inability to provide basic services to its people. Despite having the largest United Nations peacekeeping in the world, corruption, impunity, grave human rights and civil liberties violations continue to permeate through the Congo. This presentation will explore the social, political, and security reforms necessary in reviving Congo from a failed state to a more viable one.

4I • GOLD MCU 114

GOLD Diamond

SESSION CHAIR: THOMAS MATTHEWS, GOLD

Give Kids the World Alternative Spring Break 2017

MARY PANZETTA, STEPHANIE RESILA, CARA BEHRENS, BRIANNAH BIRCH, ABIGAIL BOBBETTE, CHRISTOPHER CUMMINS, SAMANTHA CYTRYN, BRIANNA FOSS, SHEAMUS KAVANAUGH, SHEA KINSELLA, SAMANTHA NORWAY, GRACE ROWAN, CASSANDRIA SANCHEZ

FACULTY SPONSOR: DAVID PARFITT, GOLD

Give Kids the World is a nonprofit village located in Kissimmee, Florida where children with life-threatening illnesses and their families can stay for a weeklong, cost-free vacation. For the several years, Dr. David Parfitt has taken a group of 13 Geneseo students down to the village to volunteer for a week. Students work one or two shifts a day 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, 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.

STEAM Fair

EMILY HERSCHBEIN

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD
STEAM Fair is a project that I introduced to Livingston County in the Spring of 2016. It included a morning of workshops intended to encourage young students to pursue careers in the Science, Technology, Engineering, Art, and Mathematics fields. Eight Geneseo students planned and prepared around ten activities for the students at the Elementary School to partake in, and materials were provided about different career paths and applications of STEAM to the real world. This presentation will discuss how my committee initiated this project, the reception we received, and the work we are doing to make it even better this Spring.

GOLD Diamond Reflection Paper

ALEXANDER MROZEK

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD
Civic engagement begins with service and manifests itself in various forms such as: working with neighborhood institutions, participating in school and community organizations or engaging in active service work, to name a few. This presentation will focus on individual and collective actions dealing with civic engagement based on a Livingston CARES humanitarian project in Biloxi Mississippi. By working with community members and campus-based officials, this presentation will identify and address issues of public concern and offer suggestions to improve poverty in Harrison County, Mississippi.

Insights on Volunteerism and Community Engagement through My Experiences with Geneseo and the GOLD Program

GABRIEL PONCE

FACULTY SPONSOR: THOMAS MATTHEWS, GOLD
This paper presentation will encompass my experiences at Geneseo along with experiences I've had volunteering in the community and how this taught me the importance of community engagement. I will begin with the activities I participated my first two years at Geneseo those being the GOLD program, helping me redefine leadership, the ultimate frisbee team, establishing lifelong friendships, and the Physics department, developing my work ethic. My junior year will cover my service trip to Ecuador along with the increased time I spend in the physics department and with ultimate frisbee team and how I applied the lessons I learned from GOLD in those settings. My senior year will be the focus of the presentation discussing the lessons I learned from being a GOLD mentor, completed the diamond certificate, and volunteered with the community. Here I will talk about my service trip to Brooklyn over spring break along with the GOLD activities that allowed students to engage with the Geneseo community and how this taught me that volunteering can help develop an individual as well as develop their surrounding community.

4J • HISTORY STURGES 109**History Honors Theses**

FACULTY SPONSOR AND SESSION CHAIR: JOE COPE, HISTORY

The Influence of Dynastic Women on the Wars of the Roses

JACLYN CARLIN

This thesis explores the power dynamics and strategies of some of the most prominent and powerful women during the Wars of the Roses. Women such as Margaret of Anjou, Elizabeth Woodville, Margaret Beaufort, and Elizabeth of York all played various roles during this long war that greatly influenced the future of English history for years to come. While some were more directly involved in influencing the war than others, each of these women worked diligently to protect herself and her family from falling out of favor, whether it was with the House of Lancaster or the House of York. From defending their son's right to the throne, making secret alliances, or simply fighting for their own livelihood and independence, these women were forces to be reckoned with and should not be undervalued or overlooked in history. The part these women played and consequences of their actions also revealed the institutional failings of a monarchy that had once been very stable, and further demonstrated how swiftly one could fall from power during these tumultuous times

The Virtues of the Coffeehouse Broad-sides: The Normative and Practical Public Sphere of English Coffeehouses

THOMAS GARRITY

To study the coffeehouse public sphere of seventeenth and eighteenth-century England - first conceptualized by Jurgen Habermas in his heuristic work *The Structural Transformation of the Public Sphere* - historians commonly rely upon the normative portrayals conveyed in moral weekly newspapers and the practical portrayals contained in the first-hand accounts of coffeehouse patrons. However, historians of this field have neglected to classify and utilize coffeehouse broadsides as a source even though they contain valuable information on the coffeehouse public sphere. Therefore, I endeavored to determine whether these coffeehouse broadsides portray the normative or practical coffeehouse public sphere and the broadsides' utility for historians of the broader English public sphere. Ultimately, I determined that these economic broadsides should be classified as sources that portray the normative, rather than practical, coffeehouse public sphere due to the economic biases they contain. Furthermore, I determined that these coffeehouse broadsides demonstrate - through the economic tension they and select first-hand accounts indicate between coffeehouse keepers and tavern and alehouse keepers - that analysis of the practical public sphere should extend beyond the Habermasian focus on the coffeehouse to include a more detailed study of taverns and alehouses.

Speaking of Secrets: Secret Codes, Ciphers, and Encryption in Personal Communication

SAMANTHA MISA

Secret codes and ciphers have long been relegated to the realm of espionage and military usage. However, a large amount of evidence exists that during the turn of the 19th century, average citizens were employing methods of encryption to hide their words and thoughts from prying eyes. While the salacious diary of Samuel Pepys is one of the most well-known personal texts to utilize a secret code, coded diaries of far less notorious individuals offer lascivious intimate details as well. Usage of secret codes also flourished among postcards, and codes existing on such documents that I have managed to decipher give insight into the value of privacy and its interconnection with early consumerism. Personal usage of secret codes for communication tapered off after the advent of the First World War, after which code usage was relegated to novelties such as decoder rings and newspaper puzzles.

4K • HISTORY STURGES 108**Honors Theses: New Perspectives on Jury Discrimination and World War II**

FACULTY SPONSOR AND SESSION CHAIR: JUSTIN BEHREND, HISTORY

Two Steps Back: The Late 19th Century Retreat of Southern Black Jury Rights

MORGAN WEBER

One of the chief causes of the deterioration of black rights in the post-bellum South can be attributed to several Supreme Court cases from the second half of the 19th century, which established precedents allowing for the eventual legalization of discriminatory practices, such as poll taxes and literacy tests. Three such cases, *Strauder v West Virginia*, *Virginia v Rives*, and *Ex Parte Virginia*, all dealing with the rights of black men to serve on juries, were handed down together in 1879-80. This paper will analyze the above court cases, and explain how they confirmed the citizenship rights of black Americans but also contributed to future court decisions that undermined black jury rights. The ruling in these three cases, while again affirming the rights of black Americans, did not create precedents strong enough to actively protect those rights. Further analysis of each case will show that in acknowledging but failing to fully address these discriminatory methods, the Supreme Court created avenues for southern whites to legally deny rights such as jury service to the majority of Southern blacks. *Selected for presentation at Phi Alpha Theta Western New York Regional Meeting, Brockport, NY.*

Political Cartoons of the Greco-Italian War

GEORGE GATZOFLIAS

When one thinks of World War II, Britain, France, the US, and Germany tend to come to mind. This research looks at an often overlooked section of the war, the Greco-Italian Conflict, and the political

cartoons that came about from the Greek and British media. The aim is to compare the cartoons that were created by the two countries to determine whether or not the British were invested in the conflict and supporting the Greeks, or if it was not seen as important and their interests were focused elsewhere. In order to answer the question cartoons from both sides will be examined and compared.

September Campaign of 1939

TIM KROL

Poland's role in World War II has often been relegated to the backwaters of historical study outside the borders of the nation. In particular the September Campaign of 1939 rarely gets more than a couple of sentences in many books written about the war. Even in this regard the campaign is written from a predominantly German perspective and covers extensively German offensive operations rather than the Polish defense. By analyzing over 20 primary sources of Polish soldiers, officers and military documents, as well as secondary sources, one can draw different conclusions about the Polish defense of the nation in 1939. Contrary to the popular image of the Poles being hopeless, technologically inferior and simply a practice exercise for the German Blitzkrieg, the Polish preparation for the war and the resistance to a considerably larger German force was significantly more determined than anything France and England could muster. This different treatment of Polish forces in the September Campaign could perhaps spur a different view of Poland in Western historical research and absolve the nation of accusations of collaboration with the Germans and lack of contribution to the Allied war effort that have become pervasive in the Western historical narrative.

4L • MATHEMATICS SOUTH 340**Mathematics of Games**

FACULTY SPONSOR AND SESSION CHAIR: JEFF JOHANNES, MATHEMATICS

Tic Tac Toe: A Game of One Mistake

JOSEPH GOODHUE

Tic tac toe is a game that is very well known, and some believe it to have been played for over 2000 years, with variants of the game dating back to the Roman era. The rules of the game are very simple: the first person to get three Xs or three Os in a row wins. If each player plays the game intelligently, the game should end in a draw. However, given that your opponent makes at least one mistake, you can easily win. Through the course of this talk, we will discuss the amount of different ways there are to start a game, as well as the best possible move to make in each successive turn, given the move made by your opponent. We will also go over the distinct number of ways there are to win a game, tie a game, and lose a game.

What's Your Worth? A Talk on Relative Piece Value in Chess

MAX ZINTEL

Much of recreational mathematics, over time, has focused on the game of chess. Here, we will assign and assess relative value for chess pieces. To do this, we will derive relative mobility of each piece in a multitude of scenarios as a simulated game of

chess progresses. Relative mobility will be represented by coloring each piece using chromatic numbers; the higher the chromatic number, the higher the pieces' mobility. This approach will promote logical decision making for those who are new to the game, and may serve in tandem with most chess strategies.

The Monty Hall PROBLEM

ETHAN JANNES

We begin with a brief description of the Monty Hall problem and its mathematical solution. We then attempt to answer the question of what about the problem and its presentation makes it appear so non-intuitive to so many people. In our first attempt to answer this, we describe the psychological factors and varying aspects of the problem's presentation that might lead people to answer it incorrectly. Our second attempt is a more constructive one, where we describe cognitive techniques for solving the problem correctly as well as provide mathematical solutions to variations of the problem, with the goal of demonstrating that certain assumptions latent within the initial problem are necessary for giving its correct solution.

Hit or Stay

ANDREW LOCASTRO

Blackjack is one of the most popular and recognizable games on a casino floor. *Bringing Down the House: The Inside Story of Six MIT Students who Took Vegas for Millions* brought the American public an inside look into how the world of mathematics gave college students a great advantage in the casino. My talk will go even deeper in the odds, probabilities, and several other aspects to the game of blackjack. Along with the data taken on the moves and bets made in common scenarios in a game of blackjack, we will see whether or not these moves and bets are statistically the best moves to make. By the end of the talk we hope to have found out that having a mathematical background and application at the blackjack table can make one a superior and profitable gambler.

4M • MUSIC DOTY RECITAL HALL

A Night at the Movies: A Concert of Film Music

FACULTY SPONSOR AND SESSION CHAIR: MICHAEL MASCI, MUSIC

JOHN COACCI

This performance will have you on the edge of your seats! Come and hear the true power of film music firsthand. You will experience music of action, drama, and suspense. Featured in this performance is an original composition written for the recent Batman films, including *The Dark Knight*. Additionally, the performance will feature music by great film composers such as John Williams, Hans Zimmer, and Michael Giacchino. For those interested in an analysis of film music, be sure to check out the presentation on "A Night at the Movies: An Analysis of Film Music."

4N • ENGLISH WELLES 123

NeuWrite/Edu: Pairing Scientists and Creative Writers

FACULTY SPONSOR AND SESSION CHAIR: LYTTON SMITH, ENGLISH

FACULTY SPONSOR: OLYMPIA NICODEMI, MATHEMATICS

RYAN CARPENTER, JEFF DOSER, MAYA BERGAMASCO, ADAM WEGMAN, SARAH STEIL, BRANDON MEHLENBACHER, HANNAH LOO, EMILY RAMIREZ, SHAYNE O'BRIEN, RACHEL POWERS, BRENDAN MAHONEY, OLIVER DIAZ

Now in its second year, NeuWrite/Edu pairs Geneseo undergraduate creative writers and scientists who collaboratively produce rigorously-informed creative nonfiction essays about undergraduate science research at Geneseo. This presentation explains the process behind NeuWrite/Edu, discusses the need for creative science writing, and shares parts of the essays produced by the students.

4O • ENGLISH WELLES 138

Plagues and Politics: Perspectives on Epidemics and Plagues upon the Body Politic

FACULTY SPONSOR AND SESSION CHAIR: THOMAS GREENFIELD, ENGLISH

The Anti-Vaccination Movement

JEANMARIE RYAN

The anti-vaccination or anti-vax movement has gained strength through two main factors. The internet has been a major factor in the growth of the anti-vax movement. Some aspects of the internet, such as the fact that websites dedicated to a certain cause tend to act as echo chambers, have passively influenced the growth of the anti-vax movement. At the same time, anti-vaxers have actively used the internet, namely via social media, to achieve their ends. A second factor that has led to the rise of the anti-vaccination movement is public fear of government control. A parent's mistrust of vaccines, some argue, might be rooted in fear of the government having too much control over their children's lives. Again, this fear has passively influenced the rise of the anti-vax movement, but it has also been harnessed by anti-vaxers in order to gain support for their cause.

HPV Vaccine: Myths and Misconceptions

MARISSA CANARELLI

This paper will attempt to fully understand the myths and misconceptions around the HPV vaccine. Rumors of potential harm have been circulating ever since the popular vaccines, Gardasil and Cervarix, were pushed to be administered to preteen girls under the recommendation of the FDA in 2006. While these vaccines can defend against HPV and the cervical cancer that can result, inoculation rates are still low. The most prominent explanation for this is the danger rhetoric extorted by the anti-vaccine movement. This paper will first explore why vaccines such as Gardasil and Cervarix have come under fire in terms of potential danger and the vaccine metaphors that facilitate them. The anti-vaccine movement will be deconstructed in order to understand how the post modern medical paradigm allowed for the movement to rapidly expand and its effect on the scientific community's relationship with the public in terms of vaccination.

The paper will conclude with analyzing the anti-vaccine movement's role in the perception of the HPV vaccine and exploring just how much truth is behind their claims of danger from the famous HPV vaccine.

Exacerbating the Epidemic: Examining the Causes and Contributions to the Spread of HIV/AIDS Virus in Sub-Saharan Africa

MALACHY DEMPSEY

MALACHY DEMPSEY

The popular history of HIV/AIDS is a history of divisions for American audiences. Throughout the 1980s, HIV/AIDS was conceived as a "gay plague" and was used in the continued marginalization of the gay community. In the past 20 years a division has similarly arisen between the conception of "Western AIDS" and "African AIDS." This division convinced many that AIDS in Africa was a mere phenomenon that the powers-that-be were helpless against; power was thus slow to respond to the epidemic, exacerbating it severely. This paper examines how certain governments in sub-Saharan Africa, Western media, and the American scientific establishment all contributed to that wide spread complacency.

4P • SOCIOLOGY BAILEY 203

SESSION CHAIR: MINA RAJ

No School Left Behind: The Effects of Urban Education Reform on New York City Public High School Students

JOHN CORDOVA

FACULTY SPONSOR: YUICHI TAMURA, SOCIOLOGY
Between 2002 and 2013, the New York City Department of Education permanently closed nearly 200 public schools under the administration of former New York City mayor Michael Bloomberg. Given that New York City's public school system is the largest in the country, serving over one million students, it is unsurprising that the policy of closing schools faced fierce opposition by teachers, students, and parents. However, to bureaucrats, closing schools was seen as necessary in order to improve school choice for communities throughout the city. As a result, many large, comprehensive public high schools were deconstructed. In their place, hundreds of small, themed high schools were opened. The focus of this research analyzes the demographic and geographic trends of the now-closed high schools, their shared characteristics, and the citywide "domino effect" that was established by closing so many of them. The second part of this presentation will focus on current mayor Bill de Blasio's alternative to closing low-performing schools. Furthermore, the ways in which reforms from both administrations have disproportionately affected minority students from low-income families, immigrant students, and special education students will be examined. The presentation will conclude by addressing multiple recommendations to help improve New York City's lowest-performing schools.

The Status of Women in Afghanistan and Somalia: A Social, Legal, and Economic Analysis

RYAN OCKENDEN

FACULTY SPONSOR: LISA MEYER, SOCIOLOGY

Patriarchal institutions have led to immense oppression toward women and young girls in many countries across the world. In this presentation, the status of women in Afghanistan and Somalia will be analyzed through social, legal, and economic lenses. Furthermore, in order to understand the current gender gaps in these countries, it is vital to uncover the misinterpretations of the Qur'an and how this directly impacts the oppression of women. Internal issues such as education, domestic violence, health, and sex trafficking will be spotlighted. Solutions will be analyzed for each issue while weighing the need for international intervention and respecting non-western cultural identities and values along the way.

4Q • SOCIOLOGY BAILEY 247

Internship Capstone Presentations: Women's & Children's Welfare and Social Justice

FACULTY SPONSOR AND SESSION CHAIR: BECKY GLASS, SOCIOLOGY

Extracurricular Programs: What are the Benefits and for Whom?

MAGGIE LLOYD

This paper reviews the ways in which participating in extracurricular programs relates to academic performance, for students at the elementary, middle, and high school levels. Attention is also given to the effects of socioeconomic status on children's likelihood of participating in extracurricular programs.

Youth Crime in Poorer Socioeconomic Areas: Factors that Lead to Acceptance of Perceived Societal Roles

ERIC CORWIN

This paper explores how the concepts of anomie, deviant labeling, "pull-down culture," and restorative vs. retributive justice interact with socioeconomic disparity to affect how youth perceive crime and their participation in it.

An Analysis of the Economic and Social Burdens of Divorce on Women

DIANA GANIS

Women have become less reliant on marriage over time; nonetheless they are disproportionately disadvantaged in the event of divorce. Their economic burdens are related to spouse maintenance, eligibility for insurance, retirement planning and implementation, and child support. In addition, there are social burdens related to child custody and perceptions about divorced women in dating situations, as well as on-going burdens for women who were abused in the marriage.

Effective Organizational Change in Non-profits

ANDREW ARCESE

Factors related to funding patterns and strategies, as well as mission, make organizational change challenging for non-profits. In addition, organizational change may reveal aspects of organizational culture that had not previously been obvious. The relationship of how organizations respond to crises—whether as an impetus to change or a source of stability—is discussed.

4R • SOCIOLOGY BAILEY 202

Sociology of Well-Being and of Emotional Achievement

FACULTY SPONSOR AND SESSION CHAIR: STEVE DERNE, SOCIOLOGY

Crafting: Can it be Emotional Achievement?

CARLY RICHARDSON

Emotional Achievement is a series of emotions felt on the completion of a task. This paper outlines what it takes for something to create feelings of emotional achievement before proposing the idea that crafting could be a source of those feelings. Through the use of documentary evidence in blogs crafting is dissected to see if, in fact, the feelings that result can be considered feelings of emotional achievement.

Work and Well-Being: A Complex Relationship

STEPHANIE GERSPACHER

Sociological scholars (e.g. Dorné) assess that the relationship between work and subjective well-being is positive. This study focuses on the complexity between work and well-being. While work does promote connections to others and a sense of specialness about the self, it can also produce negative feelings and ill-being. Findings were analyzed from a set of 18 in-depth, open-ended interviews conducted by 9 SUNY Geneseo students. Analysis of the data suggests that work can not only produce ill-being, but also can promote fluctuations between well-being and a lack of well-being.

Religion and Its Effects on Well-Being

VANESSA CALLE

This study focuses on the perceptions of well-being among Americans. A semi-structured interview was created containing basic questions pertaining to well-being in relation to different social spheres of life, such as, family, work, and religion. These qualitative interviews reveal important information about religion's effect on well-being. Although the literature states that religion positively affects well-being, it neglects that the rejection of religion also positively affects well-being. Our interviews reveal that the rejection of religion is also a positive factor in defining well-being for some individuals.

Interactions and Well-Being

TRISTAN HYNES

Well-being is a sense of life satisfaction that is comprised of many complex factors and their

effect on an individual's existence. These factors can be self-dependent, but others are dependent on external sources - such as our relationship and interactions with others. Relationships are described as being mutually beneficial to both parties in them, and positive interactions create a chain-effect of future positive interactions that positively affect well-being. But what constitutes positive interaction, and what about an interaction provides a sense of well-being? The works of Dorné, Matthews, Markus et al, and Collins all agree that relationships play some important part in the well-being of an individual. Relationships provide a sense of life satisfaction not only to ourselves, but also to the other people in our relationships.

4S • EDUCATION BAILEY 102

The Speech Buddy Experience : Reaching and Teaching English Language Learners

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

Exploring the Methods of Teaching English Language Learners

CHANNING PORTER

As a participant in the Speech Buddy Program, each student is gifted with the privilege of acting as an ESOL teacher for a few of the International Students. In this presentation I will address my own experience working with my Speech Buddy. Likewise, in order to fully illustrate the process of teaching my Speech Buddy, I will include a discussion on the specific methods and approaches used, a list of objectives to be completed by the end of the semester, as well as images of materials used in our sessions. In addition, I will also discuss how my Speech Buddies have taught me more about myself and their own specific cultures.

An ESOL Adventure

EMILY ROGERS

This presentation describes my personal experiences working with a native Japanese speaker based on on ENG 277: Methods of Teaching English to Speakers of Other Languages. This presentation describes my baseline data, objectives throughout the semester, approaches and techniques used during the sessions, resources and transfer activities, reflection of my experiences etc. This is a great way to share my experiences working with the international community at Geneseo and taking ENG 277 to promote student interest future semesters.

Supporting Long-Term ESOL Students

ZOE ROSEN

Every semester SUNY Geneseo becomes home to numerous international students. These students have the option to participate in the Speech Buddy Program where they receive weekly one-on-one English instruction. As a speech buddy to these international students, we informally evaluate their skills. By identifying areas in need of improvement, we can then create individual lesson plans to support them in reaching agreed upon goals. In addition, we attend a weekly class to learn methods of teaching English to speakers of other

languages. While many of these students come for a semester or a full academic year, there are a few that complete their entire undergraduate degree at SUNY Geneseo. I will share my experiences of working with one of these students, and how we can continue increasing their confidence and achieving their goals.

To Teach a Mouse to Roar

ALEXANDRA LOVRIC

In this presentation, I will be discussing my unique experience working as an ESL instructor within the context of the Speech Buddy Program. Through the use of a powerpoint style presentation format, the respective methods of informal language assessment, developing a report with my speech buddy, setting speech goals and assigning behavioral objectives will be discussed. Likewise, through the consideration of current research and personal experience, I will further explore the different techniques and specific approaches associated with teaching English to speakers of other languages. An extended explanation and visual representations of materials used in the sessions with my particular speech buddy will also be provided. In addition, proposed plans and recommendations for future English language sessions will be articulated along with a brief discussion of how teaching English has been a transformative experience.

4T • THEATRE & DANCE BRODIE 154

The Spirit and Art of Two Innovators of American 20th Century Dance

FACULTY SPONSOR AND SESSION CHAIR: JONETTE LANCOS, THEATRE & DANCE
MODERATOR: EMILY ELLMANN

The Modern Contributions of Loie Fuller and Isadora Duncan

SYDNEY KLEIN

In this scholarly paper, I discuss two American modern dance and feminist pioneers, Loie Fuller and Isadora Duncan. I wrote about the people, places and things that inspired their movement style as well as their own contributions and what has been a result of them. I relate it to a current choreographic piece that I am in for Geneseo Dance Ensemble, created by Professor Deb French, which includes many themes shared by Fuller and Duncan.

Scholarly Paper on Loie Fuller and Isadora Duncan

JESSICA LOOKS

In the twentieth century there was a rejection to the restricting, self-indulgent, artificial, and traditionalist classical ballet, which came out of the many cultural, social, and philosophical influences of the time. Some of these include, but aren't limited to, Physical Cultural Movement, the resurgence of the Greek idea of "sound mind, sound body," the movement for freedom of dress for women, French Impressionist Art, the Universal Exposition of 1867, changing aesthetics or design elements, Orientalism, and Art Nouveau. Isadora Duncan and Loie Fuller are revered today as two of the leading pioneers of this "anti-ballet" movement. They believed that dance should be a

true expression of contemporary life in that it is based on how we interpret our life experiences with the natural world around us, that it makes us feel alive and important, and that it is constantly evolving along side us. Dance also serves as a caveat for emotional expression, intuitive perceptions, elusive truths, and freewill. This essay will explore how these courageous women defied tradition, broke barriers, and helped aid the birth of a new art form, Modern Dance.

4U • THEATRE & DANCE

ALICE AUSTIN THEATER

A Lesson from Aloes

FACULTY SPONSOR AND SESSION CHAIR: RANDY KAPLAN, THEATRE & DANCE

BRITTANI SAMUEL, CASEY CHURCHES, RACHEL BRITTON, LORENZO RODRIGUEZ

Staged reading of Act 2 of Athol Fugard's *A Lesson From Aloes* in collaboration with the Edgar Fellows Program and the Theatre and Dance Department at SUNY Geneseo.

4V • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 24

Theories of International Relations

FACULTY SPONSOR AND SESSION CHAIR: JEREMY GRACE, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Let's Get Realist: Sovereignty is Subjective

TANVIR HAYAT

One of the fundamental underpinnings of international relations is the concept of territorial sovereignty. A precondition of the international system is that all states possess sovereignty over distinct borders, and there is a well-entrenched jus cogens norm of respecting territorial sovereignty. This concept features heavily in the realist school of international relations, which goes on to make the assertion that sovereignty is an inherent and static feature of the international system. Yet an examination of both the historical processes that created the modern definition of territorial sovereignty and the varied application of that definition in the modern world seems to suggest that sovereignty is not as rigid as realism posits. Rather, it is apparent that territorial sovereignty is a subjective concept, dependent on the views of the powerful states in the international system at the time. Powerful states define and apply the norm of territorial sovereignty selectively, in order to maintain and forward their own self interests. There is a need for the realist tradition to recognize and account for the malleable nature of territorial sovereignty as well its dependency on power politics.

Neoliberal Institutionalism and its Critics: The Stability of Today's Institutions

JESSE BENNETT

The theory of neoliberalism, or neoliberal institutionalism, seeks to explain the existence and process of cooperation among states in the international system. Through the shaping of state

behaviors and international norms, neoliberalism credits international institutions with the change in the global system. Organizations such as the European Union, United Nations, and the World Trade Organization embody the principles upon which neoliberalism analyzes these institutions. Each of these institutions meets regularly, facilitating communication between many nations, whether it be to address social, economic, or political problems. However, each of these institutions have flaws which hamper a pure execution of neoliberal ideas. If these institutions wish to remain stable and legitimate for years to come, it is necessary for them to make changes and adapt more clearly to the neoliberal world order.

Power Balancing in a Middle Eastern Cold War: Saudi Arabia, Iran, and the Regionalization of Yemen's Civil War

LEXI TABER

When the Ansar Allah insurgency took control of Yemen's capital, Sanaa, in September of 2014, Saudi officials were quick to direct their suspicion towards Iran. It appeared that by supporting the Houthi movement, Iran was seeking to export its revolutionary ideology and establish a Shia-Islamic foothold in the Arab Gulf. The result was Saudi Arabia's Operative Decisive Storm, leading to Saudi and Iranian entrenchment in Yemen's civil war. Almost three years later the conflict remains unresolved, and the nature of the division has evolved from a domestic contest for political control into a regionalized proxy war fought between Saudi Arabia and Iran. This presentation will offer a critique of the pervasive claim that alliances, competition, and intervention in the Arab world is a result of sectarian interests. While the sectarian explanation provides a basis for analysis, the Sunni-Shia divide instead acts as a second-order factor in state behavior. From a neorealist standpoint, a purely sectarian explanation fails to consider the impact of power balancing and maximization in state interaction. Iran and Saudi Arabia are posturing for regional hegemony and engage in proxy wars not purely to protect sectarian interests but also to further power shares in the region.

Polarity and Hegemonic Change Through a Neo-realist Lens: The End of American Hegemony

JUSTIN FISCHER

The world is not designed to function under unipolarity indefinitely. Indeed, the current world order is already being confronted by various forces that seek to destabilize a global system that has only existed for 25 years. In recent years, Russia, under Vladimir Putin, has attempted to destabilize regions in Eastern Europe and the Middle East with increasing aggression. Furthermore, nuclear endeavors by both Iran and North Korea continue to threaten the continued stability of the unipolar system. Most importantly, China is increasingly asserting its dominance in Asia both militarily and through soft power means. Collectively, these forces represent an inevitable tidal force that cannot be held at bay forever. The US is fighting against a natural progression of events that mark

the beginning of the end of a unipolar world and likely signifies the rise of regional hegemonies.

4W • MATHEMATICS SOUTH 328

Topics in Number Theory

FACULTY SPONSOR: GARY TOWSLEY, MATHEMATICS
SESSION CHAIR: CESAR AGUILAR, MATHEMATICS

How Prime Numbers Keep Data Safe

JORDAN LAFEVER

RSA cryptography is a public key cryptosystem that assures the confidentiality of data storage. First introduced in 1977 by Ron Rivest, Adi Shamir, and Leonard Adleman at MIT, their algorithm based on Euler's Theorem and Fermat's Little Theorem is still widely popular. Their algorithm consists of a product of large prime numbers which is hard to factor. The RSA algorithm consists of key generation, key distribution, encryption, and key decryption. The encryption key is public, but the decryption key is secret. Modulus n and exponent e are public, while the modulus n and exponent d are private. P , q , and $\lambda(n)$ - the Carmichael function of a positive integer n are also private because they can solve for d . The Carmichael function of a positive integer n is the smallest integer t such that $x^t \equiv 1 \pmod{n}$. As technology advances, factoring large primes gets easier so the government adjusts to using prime numbers greater in length. Similar algorithms are being created for more protection and the original RSA algorithm has been modified into different versions, such as using 2^k primes, for additional security.

Prime Numbers and the Lucas-Lehmer Primality Test

CAMERON ZIEGLER

Since ancient times, prime numbers have been of interest to mathematicians. A natural number n is a perfect number if the factors of n other than itself sum to n . All currently known perfect numbers are even, although no proof has been made that there are no odd perfect numbers. Each even perfect number can be calculated from a Mersenne prime, which are prime numbers in the form $2^p - 1$, where p is prime. The Lucas-Lehmer primality test can be used to determine which numbers of this form are prime, and thus, can be used to find perfect numbers.

Methods of Finding and Determining Primality of Large Prime Numbers: A Look into Various Primality Tests and Algorithms

TYLER SSMITH

The purpose of this paper is to analyze various methods of determining primality for large integer values. In such, methods used will include simplistic means such as finding Fermat and Mersenne Primes. Additional, more complex methods will be explained as well such as the Baillie-PSW Test, the Miller Rabin primality test and Quadratic Sieving. Further analysis into the Baillie-PSW Test will be presented using example and a breakdown of the individual processes involved with using it to test primality of large integers.

4X • MATHEMATICS SOUTH 338

Topics in the History of

Mathematics 3

FACULTY SPONSOR AND SESSION CHAIR: GARY TOWSLEY, MATHEMATICS

The History of the Pythagorean Theorem and How It's Used in Our Everyday Life

SYDNEY BERNARD

The Pythagorean theorem can be used in our everyday life even though most people would like to disagree and claim that "they haven't used that thing since high school". The use of the Pythagorean theorem (although it was not known as such) can be seen on the Plimpton 322 tablet used in the ancient days of the Babylonians and Egyptians. On the tablet there were columns of numbers now known as Pythagorean triples, which are sets of numbers that satisfy the Pythagorean theorem. While many people do not think they need to know math in their everyday life, it turns out that they are using the Pythagorean theorem without knowing it. Some of the uses include, figuring out the trajectory of a bullet, building fences, engineering design and more.

History of the Pythagorean Theorem in Ancient India

JENNIFER ARISUMI

Although a number of better known mathematicians were of Greek descent, the Mediterranean region was only one of the many places to host mathematicians that would bring about progress in their field. Pythagoras's trip to India helped him learn the principle of mathematics that traced back to the Shulba Sutras. The Shulba Sutras are an ancient Indian text related to geometric and algebraic constructions of the altars on which the vedic ritual was performed. We will discuss the knowledge of the Pythagorean Theorem in ancient India in relation to the altars where the rituals were performed.

The Math Behind the Music

RACHEL LISCIA

In ancient times, frequency was not a known concept. Rather, varying pitch was attributed to changing the length of a vibrating string. Pythagoras, known by some as the Father of Mathematics and the Father of Music, used string instruments to uncover the mathematical basis behind intervals and scales. Pythagoras discovered that the primary musical intervals could be expressed as simple mathematical ratios. He then used this knowledge of rational ratio intervals, namely octaves and fifths, to develop an 8-note scale. This was the first mathematically based music scale that is still used to this day all over the world.

The Mathematics behind Ranking Sports Teams

LUIS PICART

There is plenty of uncertainty in the way sports teams are ranked. Recently a number of mathematicians have been working on ways to fix this issue. Consequently, there are now multiple methods that incorporate mathematics in ranking

sports teams. Two methods that seem to be the most efficient and understandable is the Colley method and the Massey method. Both these methods incorporate linear algebra and other mathematical structures to minimize errors or subjectivity. The math behind the ranking gets rid of the unreliability of certain aspects of the game that are usually relied on to rate teams. Such aspects include margin of victory, strength of schedules, injuries, suspensions, weather, and performance. After comparing the Colley method and Massey method I hope to be able to definitively state which is a better sports team ranking system. I want to determine which has less uncertainty and a more consistent, fair way of ranking teams in a league or tournament.

4Y • BUSINESS DOTY TOWER ROOM

VentureWorks Investor

Presentations

FACULTY SPONSOR AND SESSION CHAIR: JUDY ALBERS, BUSINESS

MATTHEW D. BRYK, CHRISTOPHER W. CALLERY, RACHEL CHOU, CHRISTIAN D'ANGELO, MOLLY J. DOWNEY, JACOB H. FLEISCHER, CALLEN S. GROSS, FRANCESKA HASANAJ, RAIHAN HOSSAIN, LAUREN M. LADEAIROUS, RYAN D. LEFROIS, ANNE M. MCCARTHY, CAROLANNE E. MURPHY, ANISH K. OCHANI, SARAH J. PHILLIPS, EVAN J. RADIN, SAMUEL W. RANDALL, COLLEEN R. STEWARD, MARGARET E. UEBELACKER, SOFIA M. VILLALON, JONATHAN C. WEINER, CAROLINE C. WILSON, PHILLIP WOO, KEVIN H. WRIGHT, BRANDON GAYLORD, AUSTIN LAMB

Students in the VentureWorks entrepreneurship program will be competing in the eighth 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 28, 2017. Geneseo is in the Finger Lakes region and our student teams will be competing in the semi-final rounds on April 13th. 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 & Albany, NY.*

4Z • POLITICAL SCIENCE & INTERNATIONAL RELATIONS

WELLES 26

Why Trump Won

FACULTY SPONSOR AND SESSION CHAIR: JAMES MOOR, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Colorado as a Swing State

RYAN FALK

The state of Colorado has generally been categorized as a swing state in past presidential elections. With Clinton's narrow victory in Colorado this election cycle, the 2016 presidential election proved that Colorado was very much a

competitive state and provided insight into the national election results. By analyzing the voting behaviors of specific demographics in Colorado this past election, it is possible to compare the results in this state to the national results in order to determine what gave Trump the advantage over Clinton.

The Case of Colorado

DELANEY NOLAN

I will be presenting on Why Trump Won along with four of my peers in a panel format. Our hypothesis is that Trump won because he won the white, lower income male. We will use explanatory variables such as racial divisions and income divisions to explain why Trump won. Myself and Ryan Falk, specifically, will point out areas of Colorado that can explain the phenomena, despite Colorado voting for Hillary Clinton in the 2016 election.

Michigan

BRANDON BOURG

This past November, Donald Trump was able to capture strategic swing states which ultimately led to his surprise victory over Hillary Clinton. Because the nature of the American electorate is relatively non-competitive, these swing states play a crucial role in a candidate's bid for office. This presentation will delve into the factors that led President Trump to edge Clinton in Michigan. Factors in the constituency such as household income, education, party division, and racial demographic will be analyzed and discussed. Ultimately, the goal of this presentation is to discover the underlying factors that led to Trump winning Michigan and the election.

The Case of Pennsylvania

MELISSA WHYMAN

In each Presidential Election year, when the American people vote for a President and Vice President, they are in fact are voting for presidential electors, collectively known as the electoral college, who ultimately elect the chief executive. The 2016 Presidential Election year would prove to be unlike any other, even though initial polling for the election showed that the landscape of the electoral college was largely similar to the one that has determined the past four cycles of the presidency. This included polling

data that showed that roughly 11 states would become the competitive "swing states" that would ultimately determine the presidency. Many of the predicted states did result in a competitive race between Democratic nominee, Hillary Clinton and Republican nominee, Donald Trump, however not much else was certain. With a closer examination of explanatory variables post election, such as divisions among race, income, educational achievement, and party, we can begin to understand Trump's impact on populations like the white, lower income male which helped him to secure the electoral college within many of the swing states, especially in the case of Pennsylvania.

Virginia as a Swing State

TAYLOR VISHION

In the United States, the general presidential election is contingent on the number of electoral votes a candidate receives. While some states, such as New York or Texas, may be permanently Blue or Red, others are considered "swing states", and can oftentimes secure the election for a candidate. The media hypothesizes that President Trump won the 2016 Presidential Election because he obtained the white, lower-income male vote. We argue that the outcome of the election is more complex, and can be attributed to a multitude of variables within states, including but not limited to voting patterns, racial divisions, income inequality, educational attainment, party divisions, gender, and unemployment rates.

4AA • WOMEN'S AND GENDER

STUDIES

WELLES 140

Women's and Gender Studies

Capstones: Research on Gender in

Communities

FACULTY SPONSOR: CLAIRE GRAVELIN,

PSYCHOLOGY

SESSION CHAIR: MELANIE BLOOD, ENGLISH

Investigating Mansplaining

MELODY MCALISTER

A presentation on a qualitative study done to examine individuals' personal experiences with "mansplaining." Mansplaining is the phenomenon in which a man will attempt to explain something on behalf of a woman despite the fact that she is

already familiar with the subject. The results are compared to previous literature on patronizing language between the sexes.

All (White) Boys Club: Exploring the Lack of Inclusion in DIY Music

Communities

ELLA MOSCO

This presentation examines the exclusion of people of color and LGBTQ+ individuals in DIY music communities, specifically those in upstate New York. By weaving together personal experiences, as well as blogs, zines, and other internet-based research, this presentation seeks to answer why DIY culture is heavily dominated by cis white males.

Gender in Sports

MACKENZIE ROSS

Ross looks at how sports portray gender, at SUNY Geneseo as well as in other college sports. She presents data from Geneseo's athletic department on 10 varsity sports: Men's and Women's Basketball, Men's and Women's Lacrosse, Men's and Women's Soccer, Men's and Women's Swimming and Diving, and Men's and Women's Track and Field and Cross Country. Along with that she looks into how the school population looks at gender in sports.

Doing Gender Abroad: The

Multicultural Gender Performance of Study Abroad

NICHOLAS WOOD

Studying abroad is an experience like no other; it is a chance for students to fully realize who they are culturally by being exposed and surrounded by a whole new culture. Students abroad must balance their own cultural identity with cultural expectations of their host country, and no aspect of cultural identity and expectations is more powerful than gender. In this presentation, I will explore, through numerous first hand accounts, the struggles study abroad students face in balancing their own gender performance with the expectations of their host country.

POSTER SESSION 1 • 11:45 am – 12:45 pm

COLLEGE UNION BALLROOM DIAGRAM ON BACK COVER

ANTHROPOLOGY

102 • Reassessment of Skeletal Material from the Macauley Complex Site 2 in Western New York

LÉA BAROUCH

FACULTY SPONSOR: KRISTI KRUMRINE,
ANTHROPOLOGY

A number of sites, called the Macauley Complex, were excavated at the confluence of the Genesee River and Canaseraga Creek in western New York in the 1960s. This research focuses on a site named MAC 2 where a single burial dated to the Late Woodland period was found. Skeletal inventory of the remains uncovered at this location has revealed an MNI (minimum number of individuals) of one. Skeletal analysis of cranial fragments and long bones led to the conclusion that the individual is male. However, there was confusion about estimating the sex of the skeleton due to poor prior cataloguing processes. Dental analysis suggests the individual is an adult. Due to the highly fragmentary condition of the skeletal remains, little else could be determined. This information allowed for a reassessment of previously recorded information and highlights the importance of maintaining a detailed field and laboratory record for documenting the excavation and analysis of human remains. In addition, the literature concerned with the Macauley Complex does not include a detailed description of this individual. This analysis attempts to shed light on cultural features such as burial practices using the tools provided by physical anthropology and more specifically bioarchaeology. *Selected for presentation at American Association of Physical Anthropologists, New Orleans, LA.*

ART HISTORY

235 • Δ DANCE LIKE Δ

SARAH SIMON

FACULTY SPONSOR: THOMAS MACPHERSON, ART HISTORY

TODD GOEHLE, HISTORY

ΔΔΔΔΔΔΔΔ It was Ansel Adams (1902-1984), the famous landscape photographer, who said, "Don't take a photo, make one." There's not as much room for Adams's film methods today; so much of photography is now spontaneous, as visionaries briefly uncap their lens or unthinkingly raising their iPhone. Reconciling film with digital methods, the DANCE LIKE photo project embraces both sides of Adams's statement: making and taking -- planning and spontaneity. During a session, students arrive at the studio, play a song of their choice, and dance. While they dance, I take photos. Here, I make the controlled studio environment, in an abandoned room of an iconic academic building -- to then take the moments that planning can't. So, yes, I "take" photos. But this would not be possible if the dancer did not dance, if I did not hope that people would dance -- if lovely human curiosities and bodies were not made for the momentary taking. ΔΔΔΔΔΔΔΔ

 Promotes sustainability

BIOCHEMISTRY

103 • Characterization of Benzothiazole/Benzoquinone-DNA Interactions Using Spectroscopic Titration and Topoisomerase DNA-Unwinding Assays

ERICA KOSMERL

FACULTY SPONSOR: RUEL MCKNIGHT,
BIOCHEMISTRY

DNA is a common binding target for anticancer and antibiotic compounds, which bind via two primary modes: intercalation or minor groove binding. Assessing the intercalative and/or minor groove binding properties of potentially therapeutic compounds may uncover novel, less toxic drugs for cancer treatment. Benzothiazoles are known to display anticancer, antimicrobial, anti-inflammatory, and antiviral activities. The McKnight lab seeks to examine the binding properties of synthetic benzothiazole/ benzoquinone derivatives to DNA via noncovalent interactions. Preliminary studies on two benzothiazole/benzoquinone series were completed using combinations of spectroscopic (fluorescence and circular dichroism) titrations and electrophoretic gel-based assays. While one series (Series-A) presumably prefers a DNA minor-groove binding mode, the other series (Series-B) appears to involve DNA intercalation. Structural differences between the series likely attribute to each respective binding mode. Series-A, containing benzothiazole/benzoquinone hybrids, preferentially targets the DNA minor groove, while members in Series-B, containing only the benzothiazole core attached to a phenyl ring, prefer DNA intercalation. This could be due to two structural features: (1) The presence of the benzoquinone in Series-A may allow additional hydrogen binding within the minor groove. (2) Several members of Series-A contain an alkyl-amino substituent that may be too bulky, thus precluding intercalation. These interesting results warrant further investigations.

BIOLOGY

104 • The Positive and Negative Effects of Varying Serotonin Levels on Japanese Quail Heart Development

KIMBERLY LEFFLER

FACULTY SPONSOR: DUANE MCPHERSON,
BIOLOGY

The purpose of this research is to identify how varying amounts of serotonin affect Japanese quail heart development. In other research, inactivation of 5HT2B causes issues in cessation of the chambers of the heart in mice, and it is expected that quail hearts will mimic this. The eggs were injected with varying amounts of serotonin and allowed to incubate with the experimental treatments. After the incubation period, micro-dissections were performed on the eggs to extract the heart. We staged the quail overall development based on chick development, which in many ways mirrors the quail heart. We imaged

the hearts on the Zeiss confocal microscope to obtain 3D images all the way through the heart and identify differences in the heart development between the controls and the experimental groups. This can be applicable in pharmaceuticals, because Japanese quail hearts and human hearts are similar. Anti-depressants are selective serotonin re-uptake inhibitors, and expectant mothers should be aware of the possible effects it may or may not have on their developing child's heart.

105 • Characterization of *fsd-1* Transcript Structure, Localization, and Protein Expression in the Fungus *Neurospora Crassa*

BRYCE GEBHARDT, THOMAS HURYSZ, CHRISTINE TOUFEXIS

FACULTY SPONSOR: ELIZABETH HUTCHISON,
BIOLOGY

Neurospora crassa is a filamentous fungus that can reproduce sexually and asexually, and relatively little is known about signaling pathways controlling sexual development. *fsd-1* encodes for a transcription factor (a DNA-binding protein that regulates gene expression), and it is known to play an essential role in the development of *N. crassa* female reproductive structures. To confirm the localization of this transcription factor to the nucleus, we have tagged the FSD-1 protein with a fluorescent protein, GFP. FSD-1-GFP localized the nuclei of female reproductive tissues, but not to tissues where meiosis occurs. In addition, the *fsd-1* gene is transcribed into three transcripts which differ in length and intron/exon structure. Quantitative RT-PCR showed that one variant is expressed much more highly than the other two during development. We are currently in the process of reaffirming expression differences using a new crossing medium that has been shown to result in less sample-to-sample variation. Although all three *fsd-1* transcript variants are expressed at some level during female sexual development, it is unknown whether all three encode for protein. The last objective of our experiment is to determine whether all variants are translated into protein, and if protein expression levels vary.

106 • The Effects of Light Deprivation on Growth Rates of *Brassica rapa*

ALICIA SKOWRONSKI, EMILY ELLMANN

FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

Brassica rapa is a model plant organism commonly studied in the lab, most notable for its accelerated five-week life cycle. Because these plants grow and mature quickly, we were interested in determining the effects of light deprivation on growth rates. Two experiments were conducted: one in which plants were deprived of light for a set period of time post-germination, and another in which plants were deprived of light for set intervals of time throughout the growth period. A regression was developed to estimate leaf areas based on leaf

lengths, and leaf area was used to estimate theoretical CO₂ acquisition based on a measured leaf photosynthetic rate. We expected to see that there is a relationship between CO₂ assimilation and growth rate, contributing to overall plant mass. However, data suggests that there is no significant difference in the final masses of plants in the light-deprived treatment compared to the control. It appears that these plants are able to compensate for loss of time in the light.

107 • The Role of Epithiospecifier Protein on the Glucosinolate-Myrosinase Secondary Metabolic Pathway in *B.rapa*

AUSTIN LAMB, CAMYRN LIEB, OLIVIA CARD
FACULTY SPONSORS: GEORGE BRIGGS, JANICE LOVETT, BIOLOGY

Glucosinolates are secondary metabolites produced by the *Brassica* family. When the plant is damaged by herbivory the enzyme, myrosinase, acts on the glucosinolate. Depending on the conditions, such as pH and ion concentration, the cleaved glucosinolate will rearrange into different end products. The epithiospecifier protein (ESP) will act on the cleaved glucosinolate to force the intermediate to a different end product. The goal of the research is to elucidate the ESP end product using LC-MS and Liquid-IR techniques and to see which factors, such as pH, temperature, and ion concentration, help or hinder this process. *Selected for presentation at American Chemistry Society Undergraduate Research Symposium, Rochester, NY.*

108 • Chlorophyll Concentrations in Shaded vs. Non-shaded *Brassica rapa* Leaves

OLIVIA HERMITT, ALEXANDRIA BARLOWE
FACULTY SPONSOR: GEORGE BRIGGS, BIOLOGY

We are examining the effect of shading on chlorophyll concentrations in the leaves of *Brassica rapa*, and how the quality of shaded light might affect chlorophyll degradation. Plants were grown for two weeks and then individual leaves were shaded with one of two treatments: (1) a neutral filter that eliminates equally all wavelengths of light, and (2) plant leaves, which are transparent in the far-red and thus produce shading that is enriched in the far-red. After four days of treatment the concentration of chlorophyll a and b will be compared between treatments and between the treated leaves and control leaves that were not shaded.

109 • 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 tested. Plants were grown in moderate light (~150 $\mu\text{mol m}^{-2} \text{s}^{-1}$). Measurements of photosynthesis, stomatal conductance were made using the LI-COR 6400 system while incident light was switched for ten-minute intervals between 800 and 20 $\mu\text{mol m}^{-2} \text{s}^{-1}$. Drops in photosynthesis occurred rapidly when light levels dropped while

changes in stomatal conductance were slower, resulting in an increase in the estimate of leaf internal carbon dioxide concentration. Photosynthetic responses to increases in light were slower and more variable.

110 • Lévy Flight Hypothesis: A Foraging Model in Resource-Poor Environments

ADAM SCHNEIDER
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY
CHRISTOPHER LEARY, MATHEMATICS

The Lévy Flight Hypothesis is a simple model of an animal foraging strategy. It is theorized to be a more effective strategy of foraging in resource-poor environments. The Lévy Flight Hypothesis states that the optimal search strategy for a forager to find food is to make successive movement steps that have uniformly random directions, with lengths drawn from a heavy-tailed probability distribution. This project tests the ability of the Lévy Flight as a strategy to find food more efficiently in environments with varying food density. I developed a genetic algorithm that optimizes the scale parameter of a gamma distribution that governs the spread of step length distribution that individuals in the population follow. It was determined that the scale parameter of the gamma distribution increased with lower food plot density, indicating that heavy-tailed distributions increase the fitness of populations in resource-poor environments.

111 • Untangling Risk Factors that Influence Alzheimer's Prevalence

CODY MCKEE
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Alzheimer's Disease (AD) is a neurodegenerative disease that is currently affecting over 5 million Americans. According to the Alzheimer's Association this number is expected to increase to 16 million by 2050. The purpose of this study was to identify factors that explain the variation in the prevalence of AD cases in each state across the country. Independent variables were identified from research regarding high risk factors that are thought to contribute to the onset of the disease. Variables I investigated included: physical inactivity, diabetes, hypertension, and cardiovascular disease which were all positively correlated with Alzheimer's disease. Along with the proportion of STEM jobs in each state which was negatively correlated. Factors were analyzed using a path analysis in order to determine the influence that each factor had on AD prevalence. The results of this analysis demonstrated that although these factors are commonly associated with AD, they do not explain all the variation in prevalence across the country. A regression tree was then used to visualize how factors can predict, through a classification scheme, the prevalence of AD. Although strides are being made, more research still needs to be conducted to identify the factors that cause AD.

112 • How the Thousand Cankers Disease and the Emerald Ash Borer will Alter the Roemer Arboretum's

Tree Diversity: A Preliminary Approach

DAVID MURPHY
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

The introduction of the China-native *Cryphonectria parasitica* fungus to ecosystems along the US Eastern seaboard caused a widespread blight in the early 20th century that caused the once plentiful American Chestnut tree to become functionally extinct. A similar Mexico-native fungus, the *Geosmithia morbida*, is now causing a widespread blight - the Thousand Cankers disease (TCD) - that targets walnut tree species throughout the western half of North America. Should it be introduced to forest communities along the Eastern seaboard, the blight could endanger yet another plentiful, Eastern-native tree species - the Black Walnut tree. In my study, I use data from the Roemer Arboretum to parameterize a transition matrix model to predict the future composition of the arboretum in the event of a TCD outbreak. My results show how drastically the composition of the arboretum's forest community will be affected by the hypothetical (yet probable) outbreak. In particular, my predicted data suggest that an outbreak will cause White Ash saplings to predominantly replace Black Walnut trees. In doing so, White Ash saplings will outstrip the growth of all other sapling species and dominate the overhead canopy.

113 • The Use of Artificial Neural Networks in Image Processing and Diagnostics

JOSEPH TADROS, JOHNNY CHEN
FACULTY SPONSORS: GREGG HARTVIGSEN, BIOLOGY AND CHRISTOPHER LEARY, MATHEMATICS

An artificial neural network (ANN) is a system of interconnected nodes that is a model of the neurons found in biological neural networks. Like its biological counterparts, an ANN can recognize patterns through learning by example. An ANN was made to classify images of lung biopsies as cancerous or non-cancerous. The ANN was fed read in raw input data from a set of 100 biopsy images as well as their known outputs in order to train the ANN to recognize the patterns of the biopsy images. Following training, the ANN was fed data from a second set of images to test its ability to sort the biopsy images. The process of creating, training, and testing was repeated 100 times, and on average the ANNs classified 70% of the images correctly.

114 • Modeling Hepatitis C Cure Methods

MICHELLE SIKORA, SARAH WARD
FACULTY SPONSOR: GREGG HARTVIGSEN, BIOLOGY

Hepatitis C is a chronic liver disease caused by a blood borne virus that affects over 3.2 million people in the United States, with approximately 54% of new infections related to injection drug use. Within the last decade, a new cure for hepatitis C has been developed with a 95% success rate, but is still unavailable to many due to cost. This treatment provides an opportunity for a global health initiative to reduce the prevalence of the

disease by targeting injection drug user networks, where the disease is most likely to spread through needle sharing. This study models the progression of hepatitis C through a small world network of IV drug users, in which the most highly connected individuals are treated and removal from the community. The goal was to find the most economic treatment plan by varying the frequency at which individuals are cured, as well as the number of individuals cured at a time. Statistical analysis found that both the number of individuals removed and the frequency has a significant effect on the prevalence of the disease, and was able to narrow the parameters to find the most cost effective treatment plan to significantly reduce disease incidence.

115 • Therapeutic Targeting of GPCR G β -GRK2 Signaling in Osteoarthritis

ELIJAH CARLSON

FACULTY SPONSOR: HAROLD HOOPS, BIOLOGY
Cartilage health maintained by the Chondrocyte. In OA, chondrocytes undergo differentiation and hypertrophy causing the cartilage to degenerate and increased friction as bone replaces it (pain). In OA, GPCR G β maintains the chondrocyte in non-hypertrophic state. G β activates kinases (GRK2), which cause GPCR internalization and signal termination. In OA, increased G β -GRK signaling causes a dampening of G β and leads to a direct downstream effect causing hypertrophy. We found increased GRK2 levels in human and mouse OA samples, as well as In Vitro experiments with differentiating chondrocytes. We aimed to inhibit G β -GRK2 activity by using inhibitors of G β and GRK2 as well as by genetic KO of GRK2 in mice with induced OA. Analyzed histological samples following treatments and our results support our hypothesis that inhibiting G β -GRK2 is chondroprotective and has an overall decrease in cell hypertrophy. Research was conducted at the University of Rochester under Dr. Fadia Kamal in the Center for Musculoskeletal Research. Dr. Hoops acted as my liaison for this research at Geneseo.

116 • Continuing to Determine the Mechanism of Thermotaxis in *Astrephomene gubernaculifera*

NAOMI WILSON, AMBER LIN

FACULTY SPONSOR: HAROLD HOOPS, BIOLOGY
Astrephomene gubernaculifera is a colonial green alga made of 32 - 64 cells, each with two flagella. These cells have no apparent means of intercellular communication, yet the colony responds as a unit to stimuli. Prior studies have demonstrated that in a steady-state temperature gradient, *Astrephomene* colonies accumulate at warmer temperatures, and that this is not a result of simple thermokinesis where an inverse correlation exists between temperature and swimming speed. More complex models require the algae to sense the gradient, and to adjust to changes in temperature rather than the absolute temperature. To assay this, we exposed the colonies to a temperature regime that mimics algae moving up and down through a temperature gradient of 27°C to 32°C, and determined their velocities over time. However, we found no significant difference between the velocities of the

colonies during a step up and step down temperature change (Kruskal-Wallis $p=0.208$). It is possible that the chosen temperature regime did not induce the behavioral response. To more precisely determine the kinetics of accumulation, we exposed the algae to a spatial gradient and found accumulation at 41°C within 15 minutes. Therefore, we will repeat the kinetic analysis at higher temperatures in future studies.

117 • Sxm1/Importin 7 is Required for the Nuclear Localization and Activation of the Androgen and Glucocorticoid Receptors

ARIEL YUSUPOV

FACULTY SPONSOR: HRISTINA NEDELKOVSKA, BIOLOGY

Importin 7 has been shown to remain bound to cytoplasmic androgen receptor (AR) in contact with the bipartite DBD-NLS and LBD-NLS, hindering the NLS-binding of and nuclear import by the karyopherin proteins, Importin alpha/beta. Ligand (DHT) binding induces a switch from Importin 7 to Importin alpha binding, with some studies suggesting that Importin 7 inhibits the nuclear localization of AR; however, this contradicts previous observations that Importin 7/Sxm1 are both necessary and required for nuclear import of the glucocorticoid receptor (GR). Given the close similarity between AR and GR and the fact that Importin 7 remains in contact with the AR LBD and DBD- NLS, it is hypothesized that Sxm1/Importin 7 plays a critical role in securing the high-affinity conformation of AR for ligand binding and nuclear import. Previously, it was shown that Sxm1 is required for AR import and its absence causes significant reduction/elimination of AR and GR activity. Δ Sxm1 yeast previously transformed with AR- HRE-LacZ and GR-HRE-LacZ reporter plasmids were each transformed with a yCPGal1-Importin 7 plasmid construct or empty vector control (pPS310). Beta-galactosidase assay have shown that Importin 7 reconstituted AR and GR activity in Δ Sxm1 yeast and is required for the nuclear localization and activation of AR and GR.

118 • The Relationship of Skull Morphology to Ecology in Different Species of Squirrels

JACQUELINE ARISUMI, SHAWN MATHEW

FACULTY SPONSOR: JACOB MCCARTNEY, BIOLOGY
Our study quantified cranial variation within and between different species of squirrels, and related their morphology to their ecology. The sample included tree squirrels (gray, fox, and red squirrels), and terrestrial squirrels (chipmunks and groundhogs). We tested for differences in cranial shape related to diet (nuts or grass) and habitat (tree or ground). We tested for these differences by running a 2-dimensional geometric morphometric analysis. This method involved photographing skulls of different squirrel species, and recording morphological landmarks using the software Tps dig/util. We then analyzed the outlines produced with the geomorph package in the statistical software R. We performed a sensitivity analysis to assess the impact of skull orientation during photography. There was no significant difference within each species, indicating that skull orientation was consistent

between specimens. The results of our shape analysis demonstrate that skull morphology is significantly different between habitat types. Surprisingly, the data do not show significant morphological differences related to diet. Diet should play a major role in cranial morphology; a diet composed of mostly nuts requires a skull capable of withstanding high crushing forces, whereas a diet of grass would result in stresses related to chewing. Future work will explore the sources of variation.

119 • The Nonsteroidal Drug, Tacrolimus, does not Cause Loss of E-cadherin Expression in the Vulvar Carcinoma Cell Lines, A431 and SCV-6.

SAMUEL MYO HTUN, JAMIE WANG

FACULTY SPONSOR: JANI LEWIS, BIOLOGY

Vulvar rash affects women of all ages. Its treatment often involves the use of topical creams containing clobetasol, an ultrapotent corticosteroid. It works by decreasing the immune response that promotes redness and itching of the skin. However, this treatment option may promote vulvar carcinogenesis. We previously found that clobetasol treatment of A431 and UM5VC-6 vulvar carcinoma cell lines resulted in loss of the tumor suppressor protein, E-cadherin. An alternative treatment option is the use of tacrolimus, a nonsteroidal immunosuppressant used to treat atopic dermatitis such as vulvar rash. In this study, we investigated the correlation between tacrolimus treatment and the loss of E-cadherin expression to compare with clobetasol treatment of A431 and UM5VC-6. In contrast to treatment with clobetasol, our preliminary studies show that tacrolimus does not cause loss of E-cadherin expression in either the A431 or UM5VC-6 cell lines. This suggests that tacrolimus might be a preferable treatment of vulvar rash and dermatitis related to vulvar carcinogenesis.

120 • Documenting the Extended Leaf Phenology of Invasive Shrubs Using A Citizen Science Approach

FRANCES MURRAY, RYAN COLLING

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY
Phenology refers to the timing and of seasonal events in the life cycles of plants and animals. There are opportunities for the general public to contribute to phenological databases, such as the National Phenological Network (NPN). In this study we contributed phenological data for shrubs on the SUNY Geneseo campus to the online platform for NPN, Nature's Notebook. A comparison can be drawn between invasive shrubs like Amur honeysuckle and native shrubs like gray dogwood. Both grow in the Roemer Arboretum on SUNY Geneseo's campus. Initial analysis supports evidence for extended leaf phenology in the invasive. This gives these plants an advantage over natives as they break buds earlier in the spring and retain leaves later in the fall. In fall 2016, phenological events were recorded by trained observers and novice undergraduate biology students for a class project. The project focused on phenophases characteristic of the fall season. The students' recorded observations were found to show inconsistencies when compared to those

made by trained observers. By determining the shortcomings of this class project, we can take measures to improve the reliability of data from these projects and contribute to efforts to track patterns in phenology in the face of climate change.

Selected for presentation at Northeast Natural History Conference, Cromwell, CT.

121 • Examination of Multiple Infection of *Wolbachia* in Free-Living, Enslaved and Slavemaking *Formica* Ants

HANNAH LOO

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Wolbachia are a group of maternally inherited bacteria found in arthropods. While commonly transmitted vertically, from mother to offspring, research has also identified horizontal transmission as a possible means of spread. Within the Roemer Arboretum are two species of slavemaking ants, *F. pergandei* and *F. subintegra*, which exploit a common mound-nesting ant, *F. glacialis*. Previous research has revealed *Wolbachia* infection in both slavemakers and slaves, and studies have shown ants may harbor up to 8 different strains of *Wolbachia* simultaneously. This study examined whether *Wolbachia*-infected slavemaker ants contain multiple strains. PCR products of samples were cloned and transformed into cell lines. Plasmid DNA was purified from colonies, verified via PCR, and submitted for sequencing. Data were analyzed using Geneious software and BLAST analysis. Preliminary analysis suggests there are 4 or 5 unique sequence variants of *Wolbachia* among 5 samples tested, and up to 3 unique sequence variants within a single sample. Furthermore, investigation of *Wolbachia* infection in both *F. glacialis* slaves and free-living ants showed infection in slaves only, suggesting infection may be transferred unidirectionally from slavemakers to slaves. Taken together, these results provide greater insight into *Wolbachia* transmission dynamics and contribute to our understanding of *Wolbachia* infection in *Formica* ants. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

122 • Wasp Diversity at SUNY Geneseo

JASON LANG

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

An ongoing study on bee diversity conducted on the SUNY Geneseo campus used a standard sampling method in which all bowls painted with different fluorescent colors and filled with soapy water to attract bees; this type of trap often attracts other flying insects including wasps. My study aimed to describe local wasp diversity by identifying wasps captured as part of this bee diversity survey. Samples were collected from the College Green, a shaded site in the Arboretum, a sunny site in the Arboretum, and a site by an unmowed meadow. The wasps were either pinned or pointed (a technique in which insects are glued to a pinned paper point when too small to pin), and identified to a distinguishable taxon level. The wasps were catalogued by collection date, location, bowl color, and identity, and given unique voucher numbers. Wasps fulfill a multitude of

important ecological roles as predators, parasitoids, and pollinators. Measuring the abundance and diversity of wasps may provide insight into local habitat condition and their impacts on the surrounding fauna and flora. The abundance and identity of wasps may differ among samples due to food availability, habit quality, weather, and time of year.

123 • Screening and Optimizing Microsatellite Loci for Genotyping *Formica* Ants

MERIN VARGHESE

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Formica ants are commonly found in SUNY Geneseo's Roemer Arboretum with nest mounds numbering in the hundreds. Genotyping individuals within these nests offers insight into their population structure. Microsatellites are genetic markers that can be used to genotype individuals within colonies. Highly polymorphic microsatellite loci are advantageous because they provide data that can be used to easily distinguish individuals within a population. Currently, our lab uses four markers developed for ant species related to our *Formica*. It would be beneficial to have more loci to generally increase the resolution of our data. The objective of our study is to screen published microsatellite loci for *Formica* ant species in order to assess their utility in describing genetic variation in local ant species. We performed PCR amplifications on a small number of samples with each of six new microsatellite primers and employed gradient PCR programs to find optimal annealing temperatures. All tested loci amplified in our samples and were subsequently amplified using fluorescently labeled primers in order to be sent out for fragment analysis to assess the polymorphism of the microsatellites. With more highly polymorphic loci, our lab can better detect genetic differences within and between the colonies of this common ant species. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

124 • Identifying the Fungal Associates of Honeydew Deposits from the Beech Blight Aphid

ROBINA NAGEL

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

The specialized herbivore, *Grylloprociphilus imbricator* (Beech Blight Aphid), forms large colonies along branches of *Fagus grandifolia* (American beech) where they pierce through the bark to access the sugar-rich phloem. Accumulation of sugary excrement, honeydew, below these aphid colonies is reported to support growth of a specialized sooty mold, *Scorias spongiosa*. This study's goal was to determine if the fungal growths that we saw associated with aphid colonies were the fungus *S. spongiosa*. Samples were collected from leaf litter underneath colonies in the Genesee Valley Conservancy Research Reserve and Letchworth State Park. DNA extracted from these samples was subjected to PCR with a fungal-specific primer designed to amplify the ITS region of the ribosomal DNA gene. PCR product was sequenced at an external lab. Results confirmed the presence of the *S. spongiosa* fungus in some samples, but other fungi also may be

colonizing the honeydew deposits. There are gaps in our current understanding of the fungal community relying on *G. imbricator* colonies. In this study, we could either confirm *S. spongiosa* as the only colonist of this site's *G. imbricator* honeydew deposits, or present novel information linking other fungi to this species of aphid. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

125 • Patterns of Native Bee Diversity: Comparison of Sampling Methods and Effects of Floral Resources and Habitat

SAM HERAGHTY

FACULTY SPONSOR: JENNIFER APPLE, BIOLOGY

Recently, there has been a significant decline in the abundance and diversity of native bees in North America due to a range of factors including habitat loss and anthropogenic activity. In order to help combat this decline it is vital to have a clear understanding of factors that affect bee diversity. Both bee bowl traps and active sampling methods were employed at four sites in the Arboretum to assess bee diversity and abundance. In addition, floral resource usage and availability were described at each site. Overall, 19 unique bee genera were collected over the course of the study with 320 samples gathered in total. Bee bowls were found to be ineffective at collecting larger bees since almost all of the large-bodied genera like *Bombus* were gathered using active collection methods. Additionally, it was found that the most commonly used floral resources during the sampling period were *Centaurea nigra* (Black Knapweed) and *Monarda fistulosa* (Wild Bergamot). This is particularly interesting because *C. nigra* is an invasive plant that is being considered for removal from the Arboretum and was located at all sites. Future studies should examine the effects of invasive plants as potentially aiding or hindering native bee conservation efforts. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

BUSINESS

126 • Harmonizing the Needs of Consumers and the Music Industry

JULIA CUMMINGS

FACULTY SPONSOR: JAMES QUINN, BUSINESS

Since the birth of the music industry, technological changes have altered the dynamic of the relationship between the consumer and producer, prompting legal action. This poster will examine changes in copyright law over time in order to find balance between the needs of both parties and sustain the music industry. I will then discuss the reasons for the current state of the industry, and the effect of its latest technology, streaming services, on the future viability of music.

CHEMISTRY

127 • Synthesis of Stercobilin: A Potential Biomarker for Autism

ANDREW VADAS

FACULTY SPONSOR: AMBER CHARLEBOIS,

CHEMISTRY

Autism Spectrum Disorder (ASD) is a social disorder that is characterized by difficulty or inability to

communicate in social settings or to develop social relationships. The bio-molecule, stercobilin, a natural metabolite of bilirubin has been implicated in ASD. We have synthesized stercobilin in vitro via a hydrogenation-reduction reaction followed by an aeration-oxidation reaction in effort to investigate its potential use as a biomarker for an early diagnostic test of ASD in children. The hydrogenation reaction was performed with various reagents including hydrogen gas and glacial acetic acid (H2H), hydrogen gas and deuterated glacial acetic acid (H2D), deuterium gas and glacial acetic acid (D2H), and deuterium gas and deuterated glacial acetic acid (D2D). Unusual results were obtained when the hydrogenation reaction was performed in the H2D and D2H reactions because of a difference in the number of deuterium atoms that are added to the stercobilin product. It is unclear what serves as the specific source of the hydrogen or deuterium in these reactions and may suggest a possible unique mechanism of hydrogenation that differs from the current mechanistic understanding of the hydrogenation reaction. **Selected for presentation at 254th American Chemical Society National Meeting & Exposition, Washington DC.**

128 • Spectroscopic

Characterization of Cresyl Violet

MATTHEW ESPOSITO, CHRISTOPHER KUBOW

FACULTY SPONSOR: AMBER CHARLEBOIS,
CHEMISTRY

Cresyl violet (CV) is a visible oxazine dye that is commonly employed as a histological stain and we have found that it can also be used to stain nucleic acids in electrophoretic gels. Visually, it can distinguish between DNA and RNA, as it stains DNA blue and RNA purple. We have used multiple spectroscopy techniques to explore the structure of the CV as a monomer, as a dimer and as it is bound to nucleic acid molecules. Nuclear Magnetic Resonance (NMR) Spectroscopy has been employed specifically to investigate the monomer and dimer forms of CV. Concentration and pH rate profiles, Fluorescence Spectroscopy, Circular Dichroism and UV-Vis Spectroscopy have also been used to explore the dimer/monomer ratios and the CV-Nucleic acid complexes. The ratio of the dimer to monomer was found to be greater at higher pHs and at higher cresyl violet concentrations. Finally, we have implemented a novel method of in situ ultraviolet-visible spectroscopy to analyze such complexes directly in electrophoretic gels. **Selected for presentation at 254th American Chemical Society National Meeting & Exposition, Washington DC.**

129 • Toward Making Bioethanol Production Economically Viable: An Investigation into the Use of Locally Synthesized Ionic Liquids for Cellulosic Pretreatment

JANE MATHEWS, JASMINE BELOY

FACULTY SPONSOR: BARNABAS GIKONYO,
CHEMISTRY

The role of fossil fuels in increasing the levels of carbon dioxide in the atmosphere justifies the search for a more environmentally friendly alternative such as biofuels. Biofuels are fuels that are derived from organic matter. Rice husks, the organic material of choice, is composed of

lignocellulose; which in turn consists of cellulose, hemicellulose and lignin. Ionic liquids are used as a pretreatment method in breaking down cellulose, hemicellulose, and lignin into glucose yields. The glucose extracted can then be fermented into ethanol and can ultimately be used as biofuel. The focus of our study is the synthesis and purification of ionic liquid 1-butyl-3-methylimidazolium chloride (S-IL). The efficacy of lignocellulose break down to glucose for this locally synthesized IL will be compared to a commercially available 1-butyl-3-methylimidazolium chloride (C-IL) through various techniques such as ¹³C NMR, ¹H NMR, and IR. The results are presented hereafter.

130 • Critical Bone Fracture Repairs: A Comparison of the Mechanical Properties of Calcium Phosphate Bioactive Cement and Pig Bones

SABRINA MEDINA, MARK SOTO

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. The new cement was characterized using published methods and the data obtained is presented and discussed herewith.

131 • Investigation into Cost Effective Cultivation and Biofuel Production from *Chlorella* Algal Species

ZOE MARR, COLLEEN STEWARD

FACULTY SPONSOR: BARNABAS GIKONYO,
CHEMISTRY

As resources for petroleum-based fuel become increasingly scarce, third generation biofuels, which utilize algae as a renewable feedstock, offer a promising solution. Despite algae's potential use for biofuel production, complications arise when it comes to obtaining consistently high lipid yields and making the cultivation more cost efficient. Our research aimed to make algae cultivation more feasible by focusing on two critical aspects in this process: the growth of algae and its conversion to crude biodiesel. To make cultivation more cost efficient, a modified Bold's Basal medium using low cost materials was produced and then *Chlorella*, a fast growing microalgae with high lipid content, was introduced. The cell growth was monitored

using a hemocytometer to determine the potential of using the modified Bold's medium for algae culturing compared to the commercially made Alga-gro®. The second part of the experiment tested whether the cultured *Chlorella* would produce high lipid yields. IR spectroscopy was then used to detect the presence of fatty acid methyl esters (FAME), signifying the successful creation of crude biofuel. The lipid yields from the cultivated *Chlorella* were determined and compared to those of the dried *Chlorella* control group. The results are presented and discussed hereafter.

132 • Synthesis and Characterization of Biphenol Derivative Organic Gelators

SHAWN MOORE, JENNIFER SCHULMAN, MELANIE TRAN

FACULTY SPONSOR: CRISTINA GEIGER, CHEMISTRY
The synthesis and characterization of 4,4'-bis-(9-ethylloxycarbonyl nonyloxy) biphenyl (BB010-Et), 4,4'-bis-(9-methylloxycarbonyl nonoxy) biphenyl (BB010-Me), 4,4'-bis-(7-ethylloxycarbonyl heptyloxy) biphenyl (BB08-Et), 4,4'-bis-(7-methylloxycarbonyl heptyloxy) biphenyl (BB08-Me), 4,4'-bis-(5-ethylloxycarbonyl pentyloxy) biphenyl (BB06-Et), and 4,4'-bis-(5-methylloxycarbonyl pentyloxy) biphenyl (BB06-Me) is reported. The structures of the molecules were confirmed using ¹H nuclear magnetic resonance spectroscopy (NMR) as well as X-ray diffraction spectroscopy (XRD). All but one of these gelators were found to form stable gels at 1.5% (wt) in a variety of polar solvents. Modes of stacking and the natures of attractions within these gels were investigated using circular dichroism (CD), absorption spectroscopy, and fluorescence spectroscopy. Gelation was found to be dependent upon temperature of formation, physical disruptions, rate of formation, and molecular structure itself.

133 • An Exploration of Hydrogen Bonding Interactions in a Series of Organic Salts

KYLE POWERS

FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY
1,2-diaminobenzene was reacted with 2-picolinic acid and benzoic acid at room temperature to form the organic salts of the compounds. The structures of the salts were studied by X-ray crystallography and ¹H NMR spectroscopy. The 1,2-diammoniumbenzene 2-picolinate salt crystallized in a monoclinic unit cell with the space group C2/c. The structure exhibited antiparallel chains formed by CH-π interactions between 2-picolinate and the protonated 1,2-diaminobenzene in each chain and π-π stacking between 2-picolinate molecules in adjacent chains. The protonated 1,2-diaminobenzene benzoate salt crystallized in an orthorhombic unit cell with the space group Pbcn. The structure similarly exhibited π-π stacking between benzoate molecules and CH-π interactions between benzoate and 1,2-diammoniumbenzene. When viewed down the c-axis, the structure exhibited a paddlewheel structure as a result of hydrogen bonds between molecules. **Selected for presentation at American Chemical Society Local Chapter Meeting, Rochester, NY.**

134 • The Structural Characterization of Transition Metal Benzimidazole Complexes

ROBERT LEWIS

FACULTY SPONSOR: DAVID GEIGER, CHEMISTRY
The coordination chemistry and structural characterization of transition metal complexes of benzimidazole is one of the areas under investigation in our laboratory. The benzimidazole ligand 5,6-dimethyl-2-(pyridine-2-yl)-1-[(pyridine-2-yl)methyl]-1H-benzimidazole was synthesized by combining 4,5-dimethyl-1,2-diaminobenzene and 2-pyridinecarboxaldehyde in ethanol. The ligand was combined with copper(II) acetate monohydrate in methanol to form the copper(II) complex. Attempts to grow single crystals included using the solvents methanol, propanol, butanol, a mixture of acetone and methanol, and acetonitrile. Only acetonitrile yielded crystals suitable for x-ray diffraction studies. The results from the structural analysis will be presented. Our attempts to prepare complexes of the ligand with other metal compounds including nickel(II) acetate, palladium(II) acetate, dichlorobis(triphenylphosphine) palladium(II), and cobalt(II) nitrate will be presented.

136 • Investigating the Phytochemistry of Autumn Olive *Elaeagnus Umbellata*

BRITTANY ABRAHAM

FACULTY SPONSOR: ERIC HELMS, CHEMISTRY
Autumn olive shrubs produce a rich harvest of berries in the fall months of September and October. The hearty bushes can grow in a variety of environments and conditions, and their fruit are rich in the antioxidant lycopene. It has been shown that autumn olives have 17 times the amount of lycopene as a tomato, the primary source of lycopene in the western diet. Lycopene has been associated with various health benefits including the prevention of cancer and heart disease. The carotenoids were extracted from berries and analyzed via UV-Vis spectroscopy. The amount of lycopene in various extracted samples was determined weekly for five weeks to determine peak ripeness using lycopene content. The lycopene levels in jams and jellies made from the fruit was also examined and compared to levels in the unprocessed fruit. Additionally, antioxidant studies have shown that the carotenoid extract is an efficient radical scavenger.

137 • Exploring the Molecular Mechanism of Lycopene Accumulation in *Elaeagnus Umbellata*: An Analysis of the Carotenoid Biosynthetic Pathway

STEPHANIE SOJDA

FACULTY SPONSOR: ERIC HELMS, CHEMISTRY
The berries of *Elaeagnus Umbellata*, commonly known as autumn olive, are rich in the carotenoid lycopene. Lycopene is an antioxidant that has been reported to have a variety of health benefits such as reduced risk of chronic diseases like cardiovascular disease and certain types of cancer. Currently, the tomato (*Solanum lycopersicum*) is the main source of lycopene in the American diet,

containing about 3 mg of lycopene per 100 g of fresh tomato. *Elaeagnus Umbellata* contain on average 54 mg of lycopene per 100 g of berries, about 17 times more lycopene than fresh tomato. Carotenoid biosynthesis has been studied in many plants, and the pathway is mostly conserved throughout. Accumulation of specific carotenoids in tissues throughout development depends on the regulation of the genes and enzymes in this pathway. The purpose of this project is to explore the regulation of carotenoid biosynthesis and accumulation in organisms in which the pathway has been heavily studied to formulate hypotheses for the surplus of lycopene found in autumn olive fruit.

138 • Polycyclic Aromatic Hydrocarbon (PAH) Detection Using High Pressure Liquid Chromatography (HPLC) Techniques and Solid-Phase Microextraction (SPME) ⚗

MICHAL ZWEIG

FACULTY SPONSOR: JAMES BOIANI, CHEMISTRY
Polycyclic aromatic hydrocarbons (PAH) are carcinogens that need to be kept out of drinking water. The EPA tests for their presence using solid phase extraction (SPE) and gas chromatography-mass spectroscopy (GC-MS). We found that it is feasible to identify and separate PAH compounds using high pressure liquid chromatography with diode array detection (HPLC-DAD). However, we wanted to further explore different methods and evaluated the practicality of using solid phase microextraction (SPME) fibers instead of SPE for chromatography sample preparation.

139 • Detection of Pesticides in Locally Produced Honey ⚗

VICTORIA KOMPANIJEK

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. A variety of pesticides have been tested, including glyphosate, the main ingredient in the common herbicide Round-Up. 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 pesticide use. *Selected for presentation at 254th American Chemical Society National Meeting & Exposition, Washington DC.*

COMMUNICATION

140 • An Investigation of Relational Issues Related to Laptop Use in College Classrooms

ALEXANDRA ALIMARAS, JENNIE GIARDINO
FACULTY SPONSOR: ANDREW HERMAN, COMMUNICATION

Today laptop use is seen in campus classrooms all over the country. With the introduction of such technology being fairly new, a lot of research continues to be done on the academic effects of laptops in the classroom. However, the purpose of our research is to understand the thoughts, perceptions, and feelings one person may have towards others in response to their choice to use a laptop in class. By better understanding the relational impact of laptops, we hope to improve both faculty and students' knowledge of facework and the ways in which laptop use can be more appropriate and effective in regards to the decisions they make when they are choosing to use a laptop, and the nonverbal messages the laptop use may be sending to others in the class.

141 • The Failing of Public Health Arguments for Gun Control: An Analysis of Themes in Firearm Advertisements

NOAH PFEIFFER

FACULTY SPONSOR: ATSUSHI TAJIMA, COMMUNICATION

This paper analyzes the possible efficacy that a public health argument for firearm control would have with a gun-enthusiast population. It is often argued that America has the highest rate of gun violence among any First World nation. Tens of thousands die every year of firearm violence, and yet little has been done to curtail the problem due to political gridlock between gun enthusiasts and gun control advocates. First, this paper explores various discussions concerning gun violence such as the industry's political power, the public health concern, and harmful cultural themes found in firearm advertisements. The paper then employs both a small-scale content and textual analysis of firearm advertisements to understand the culture of firearm owners, and whether a public-health argument could possibly be used to sway them their opinions towards accepting gun control measures. However, the paper goes on to identify four themes in these advertisements that seem to indicate this culture would not be moved by a public health argument. These themes are given the terms a) face obstruction; b) versus mentality; c) individualist presences; d) gender portrayals. *Selected for presentation at 108th Annual Eastern Communication Association Conference, Boston, MA.*

142 • Sports Cuties Sell: The Impact Diet- and Fitness-Oriented Advertising has on Body Dissatisfaction and Anxiety Development Among Women

RIAGAN MCMAHON

FACULTY SPONSOR: ATSUSHI TAJIMA, COMMUNICATION

This study explores physical and mental ramifications mediated through female images within *Shape Magazine*, one of America's leading fitness magazines. Literature has suggested that women are heavily affected by unrealistic body shapes in the media. Both the increase of body dissatisfaction and anxiety-like symptoms, as a result, could be explained through the lens of social comparison theory. This is due to internal pressures by women to compare themselves to the bodies featured across the media. Concretely, the study explores those structural concerns through 1) a textual analysis of images appearing on covers of and within *Shape* magazine and 2) a survey questioning how young females perceive those images. While *Shape* proposes an aspirational lifestyle through its celebrity models, the findings suggest that women paradoxically develop a negative perception about their bodies and mental health as they are exposed to what *Shape* represents. **Selected for presentation at James C. McCroskey and Virginia P. Richmond Undergraduate Scholars Conference at the Eastern Communication Association Convention, Boston, MA.**

143 • Dynamical Probe of Oligomerization of Amyloid Beta 1-42 on Gold Colloidal Nanoparticle Surfaces

TARIK JAMES, EGHOSA OKUNGBOWA, JESSICA
FACULTY SPONSOR: KAZUSHIGE YOKOYAMA,
COMMUNICATION

The amyloid beta protein is regarded as a hall mark protein associated with forming fibers leading to neurodegenerative disease. The formation of fiber is triggered by an ensemble of monomeric amyloid beta (called oligomer), and not much of details are known. Our research group established a systematic way to study this oligomer over nano scale gold particles. One big question needs to be answered is how energy is used to form this oligomer. By using the fluorescein attached amyloid beta 1-42, we can monitor how the provided energy is used to form an oligomer. We are in the process of studying the energy redistribution depending on the size of nanoparticle. It will reveal the subtle surface potential change as a function of the size of the gold nano particle.

144 • An Examination of Pedagogical Methods in Student Surveys

THERESA GIBBONS
FACULTY SPONSOR: MEREDITH HARRIGAN,
COMMUNICATION

This study aims to qualitatively analyze students perception of learning styles and ideal pedagogical methods via online surveys (hosted on Geneseo's LimeSurvey software). The survey will ask students for their major and class year as well as asking them to describe their learning style and ideal classroom format. All surveys will be anonymous with the only identifying factors being the participant's major and year. All participants will be informed of their right to refuse to participate prior to beginning the survey.

145 • Native Advertising's Impact on the Magazine Industry: Perspectives from Publishing, Advertising and Public Relations Professionals

HEATHER MOLZON
FACULTY SPONSOR: SARAH BROOKES,
COMMUNICATION

Native advertising is defined as "the practice by which a marketer borrows from the credibility of a content publisher by presenting paid content with a format and location that matches the publisher's original content" (Wojdynnski and Golan). Some examples of native advertising are sponsored social media posts, articles and videos on publishing sites, and print advertorials. The ethics behind native advertising is highly complicated and has caused conflict within the magazine industry since its creation. Native advertising appears beneficial to magazines, both in their print and digital form, because the ads appear as regular, authentic content but have the added value of generating revenue. Native advertising, however, blurs the ethical line between genuine journalistic content and sponsored advertisements. Publishers, advertisers and public relations specialists in the magazine industry are all involved in different aspects of native advertising and consequently, have varying opinions. Through industry research, the examination of specific publications, and interviews with various professionals I will explore the different perspectives on native advertising and how it might shape the future of the media industry.

EDUCATION

146 • Eye Gaze Edge Talker: Gaze into a High-tech Option for Augmentative and Alternative Communication

BRITTANY FABRIZIO, SYDNEY CAROLLO, ALEX SAPONE, MADDIE MCCABE
FACULTY SPONSOR: DOUGLAS MACKENZIE,
EDUCATION

The Eye Gaze Edge Talker is one of many eye tracking devices that has been used in recent years with individuals who are unable to speak and have undeveloped or impaired motor skills. This poster will provide information on its use with school-age children.

147 • Picture Exchange Communication (PECS): Uses and Advantages for School-Aged Children

CLAIRE HILL, KELLY TEEL, JESS SIDOTI
FACULTY SPONSOR: DOUGLAS MACKENZIE,
EDUCATION

This poster will include a detailed description of how picture exchange communication system (PECS) works, its history, the phases involved, and who it can benefit. PECS is a "low-tech" form of augmentative and alternative communication, originally developed to be used by those with autism. There are many uses for PECS and many advantages for those using the system, as well as many advantages for support personnel, such as

teachers or parents. People using PECS are first taught to give pictures to others in exchange for the item pictured. They use the picture cards to eventually increase their sentence structure, ask for things in full sentences, and improve their overall communication. PECS is meant to be learned quickly in order for users to be able to communicate as soon as possible. The system is fairly simple and can be used in both the home or at school. It is also a fairly inexpensive system and straightforward for use by anybody who comes in contact with it. PECS has grown to be beneficial for children, adolescents, and adults with a wide range of disabilities that affect their ability to communicate using speech.

148 • Boardmaker: An Alternative Form of Communication

ISABELLA OVEJERO, JENNA ZIMMERMAN, ADRIENNE REDA, JILLIAN DECKER
FACULTY SPONSOR: DOUGLAS MACKENZIE,
EDUCATION

Severely impaired speech is a problem faced by many students in elementary classrooms. This poster provides an overview of Boardmaker, a type of AAC that is used to facilitate communication in educational settings. This poster will cover topics such as the different versions of Boardmaker that are commercially available, the specific settings where it can be utilized, characteristics of students who may benefit from its use, and the different features it offers.

149 • Assisted Communication: The Sono Flex App by Tobii

STELLA ALDRIDGE, EMILY COREY, EMILY THOMAS
FACULTY SPONSOR: DOUGLAS MACKENZIE,
EDUCATION

This poster describes the Sono Flex app and how it helps non-verbal users to communicate. We will show the features of the app and how they facilitate communication for a person who is nonverbal. The poster will discuss the "lite" version and the "purchased" version, and the benefits and limitations of each. We will have available an iPad that has the "lite" version installed on it to show what the app actually looks like and functions as a highly tech form of AAC.

150 • Development of Women's Rights Throughout the World

TAYLOR CATHEY
FACULTY SPONSOR: ELIZABETH HALL, EDUCATION
In this poster session, I will be discussing how women throughout the world are currently expanding their rights within their local communities.

GEOGRAPHY

151 • Impact of EU Membership on States of Eastern Europe

COLLIN CLARK
FACULTY SPONSOR: COLLEEN GARRITY,
GEOGRAPHY

In the early 21st century, a significant number of Eastern European states were for the first time accepted for membership into the European Union (EU). The EU is a regional organization that seeks to eliminate barriers to free trade within its

constituents to foster development in and economic stability of all member states. This poster combines subject matter from the fields of Geography, Economics, and International Relations in order to investigate whether or not it was beneficial for these new member states to join the EU. By juxtaposing GDPs (PPP) per capita to their Eastern European counterparts who did not gain or seek entry during the 2004-2013 period, the data demonstrate what the benefits - or the consequences - of joining were for the new members. Economic data acquired from the World Bank were placed in and modified with ArcGIS, resulting in maps and graphs that offer an explanation to the matter in question.

152 • Secondhand Geography: A Place-Name Analysis of Goodwill Clothing

BENJAMIN FREIMAN

FACULTY SPONSOR: DAVE ROBERTSON,
GEOGRAPHY

Can the items found in thrift stores provide insight into the cultural characteristics of the communities they serve? This research is premised on the idea that because their inventories are sourced from surrounding communities, items in Goodwill stores, such as used clothing, will reflect local cultural geographies. This project examines and compares the geographic characteristics of place-name-bearing clothing collected from one rural, one suburban, and one urban Goodwill store located in Western New York State. Clothing was examined at each store and place-names were recorded, geocoded, and assigned a typology. Place scale and proximity to the store was also measured. The resulting place-names were then mapped using a GIS and analyzed using spatial and qualitative methods. This unusual data source shows that substantive differences exist in the cultural geographies of rural, suburban and urban areas serviced by Goodwill stores. Place-name analysis of secondhand clothing also provides unique insight into local patterns of consumption and travel as well as attachments to place and regional identity. *Selected for presentation at American Association of Geographers 2017 Annual Meeting, Boston, MA.*

153 • Nutrient Loading Risk Assessment of the Genesee River Watershed

VICTORIA ROBERTS

FACULTY SPONSOR: DAVE ROBERTSON,
GEOGRAPHY

The purpose of this GIS study is to use environmental data to explore potential nutrient-loading from agricultural land on the Genesee River basin's major tributaries. Increased amounts of nutrients in the water, specifically nitrogen (N) and phosphorous (P), can lead to increased submerged aquatic vegetation and increased speed of eutrophication in freshwater ecosystem (Li et. al, 2005; Nutrients, 2008). Sediment contamination specific to the Genesee basin is primarily from agriculture and livestock (Kerkeslager, 2011; Genesee River, 2015). Thus, proximity to agricultural land parcels, soil data, elevation models, and presence of a riparian zone near waterways were implemented as criteria for

the nutrient-loading risk assessment (Li et al., 2007; Nielsen et al., 2012). The criteria were weighted differently when performing the site suitability analysis, which was run using ArcGIS software. The results are shown in a 30mX30m resolution map of the Genesee basin's major tributaries. The nutrient-loading risk is shown with a 100 point scale. The areas depicted as high risk can be used to help prioritize areas that should be focused on when managing waterways and allocating resources that mitigate nutrient-loading most efficiently. *Selected for presentation at Association of American Geographers, Boston, MA.*

154 • Indian Fort Nature Preserve Palisade Project

ELIZABETH HOLLAND

FACULTY SPONSOR: DAVID ROBERTSON,
GEOGRAPHY

This project inventories tree growth and human disturbances on two palisade mounds, erected circa 1400-1500 AD, at the Indian Fort Nature Preserve in Geneseo, New York. Also explored are tree removal, revegetation, and other strategies for protecting this archeological site. This work was conducted through an internship with the Genesee Valley Conservancy (GVC), owner of the Indian Fort property. The mounds are the remains palisades enclosing a Seneca meeting place. An important Seneca archeological site, the palisade mounds are threatened by tree growth and human activity, including excavation and trail use. Data was collected from extensive fieldwork to map the present condition of the mounds, and options were presented for clearing, restoring and preserving the palisade mounds. The GVC is presently considering these options.

155 • Greeks Go Green: A Sustainability Report for Sigma Delta Tau

JENNA SABERS

FACULTY SPONSOR: DAVID ROBERTSON,
GEOGRAPHY

More than one-quarter of students at the State University of New York College at Geneseo participate in Greek life, but only 1 of 32 Greek organizations (Sigma Delta Tau (SDT)), has a formal sustainability initiative. Unusual living conditions exist in Greek housing, large shared housing facilities with frequent guests, and these factors have a significant impact on sustainability. This poster communicates results of a sustainability report, produced by SDT in 2017, to facilitate adoption of more environmentally sustainable living practices at its sorority house at SUNY Geneseo. In addition to inventorying living conditions, the report utilized surveys to analyze student behavior and resource consumption in five lifestyle impact areas: water use, energy use, waste management, community engagement, and social gatherings. Strategies for facilitating more environmentally sustainable practices in each impact area were proposed at three levels: behavioral suggestions, low cost strategies, and higher cost strategies. Although there are sustainability advantages inherent in shared housing, the report showed the need for improvement in behaviors and habits related to sustainable living practices in the SDT house. The

report also serves as a model for sustainability planning for other shared student housing at SUNY Geneseo and beyond. *Selected for presentation at American Association of Geographers 2017 Annual Meeting, Boston, MA.*

156 • Influence of Former Pasture Trees on the Regeneration of Black Walnut (*Juglans Nigra*) in a Successional Woodlot, Geneseo, NY

BRIANNE HART

FACULTY SPONSOR: STEPHEN TULOWIECKI,
GEOGRAPHY

Biogeographers and forest ecologists have long studied forest successional processes in abandoned agricultural areas including former agricultural fields and pastures. At the same time, research has examined the duration of impacts upon ecosystems after the cessation of a particular land use, termed "land-use legacies". The purpose of this study is to assess how the distribution of large, formerly open-grown pasture trees influences regeneration patterns for black walnut (*Juglans nigra*). A second purpose is to test the predictive accuracy of different methods for interpolating the distribution of forest tree species. The study area is the Spencer J. Roemer Arboretum, an 8-hectare park and abandoned pasture in Geneseo, NY. The research consisted of four steps. First, data on black walnut distribution was collected using the point quarter transect method and a GPS unit. Second, interpolation techniques, such as indicator kriging and inverse-distance weighting, were applied to black walnut species presence (1) and absence (0), to produce a continuous prediction for the relative abundance of black walnut. Third, the distribution of black walnut was compared to the species composition of, formerly open-grown pasture trees including black walnut, white oak (*Quercus alba*), and black oak (*Quercus velutina*). Fourth, the accuracy of predictive methods was assessed using cross-validation techniques. Results suggest that black walnut regeneration is clustered around old pasture black walnut trees, and regeneration is lower proximate to pasture trees of different species. Explanation of patterns include (1) proximity to former pasture black walnut and (2) dispersal of propagules via small. The kriging and inversed distance weighted interpolation technique produced the most accurate prediction of black walnut distribution. This study demonstrates how past land use continues to impact forest ecosystem processes. *Selected for presentation at Association of American Geographers, Boston, MA.*

157 • The Geography of Urban Stereotypes Using Google Autocomplete

R. TRUE CAPALBO

FACULTY SPONSOR: STEPHEN TULOWIECKI,
GEOGRAPHY

Urban imagery creates stereotypes which urban geographers recognize as an important element in the perception of cities. Social media and internet search engines present new media for the proliferation of positive and negative stereotypes of various entities. Previous research has revealed

stereotypes of social groups in internet search engine features including Google's "Autocomplete", an algorithm that suggests search terms based upon incomplete terms entered by a user. However, the study of city stereotypes evident in Google Autocomplete has not been formally studied previously. To that end, this study aims to understand city stereotypes manifested through Google Autocomplete and the spatial patterns in such stereotypes. To study Google user perceptions of cities, stereotypes of 104 cities in the United States were explored by entering in "Why is ____ so" into the Google search engine to generate a maximum of four stereotypes per city. Content analysis was performed to classify the nature of the stereotypes as positive, neutral, and negative, and furthermore to classify stereotypes into 7 categories such as physical characteristics, politics, or demographics. Stereotypes were mapped and analyzed using a spatial autocorrelation. The results for this study show positive spatial autocorrelation of cities with a greater percentage of negative stereotypes. *Selected for presentation at American Association of Geographers 2017 Annual Meeting, Boston, MA.*

GEOLOGICAL SCIENCES

158 • Lichenometric Dating of Outwash Near Hooker Glacier, New Zealand

ERAKLIS HRISTODOULOU, ABBY DENNETT
FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

Lichenometric dating techniques were applied to the glacial outwash of Hooker Glacier in the Southern Alps, New Zealand, to determine the approximate time of emplacement. Lichen measurements were collected at four locations in outwash channels of the Hooker Glacier. Using a method adapted from Stefan Winkler (2000, 2004), lichen mean diameters (mm) were applied to the SL1 lichenometric dating curve to yield dates since first exposure. The outwash dates were then compared to dates of local moraines determined by Winkler (2000) to create a local glacial history. Comparison of known moraine dates and determined outwash dates suggest that the glacial outwash of Hooker Glacier was redirected approximately 110 years ago.

159 • 39,000-Year Record of Extreme Climate Change in the Genesee Valley, NY

ERAKLIS HRISTODOULOU
FACULTY SPONSORS: AMY SHELDON, RICHARD YOUNG, GEOLOGICAL SCIENCES

For over 40 years the Geological Sciences' student and faculty joint research has provided a synoptic view of the extremes in climatic variation over the past 39,000 years in the Genesee Valley, beginning with a middle Wisconsin glacial advance correlative with the well-known iceberg armadas in the Atlantic Ocean known as Heinrich Events (H-4). One pending research project confirms that the last (youngest) glacier advance in the valley was as recent as 13,000 years ago, coincidental with a world-wide sudden climatic cooling known as the Younger Dryas event. In addition, unusually well-preserved cross-bedded sands were discovered

this past summer near Geneseo, NY, that shows evidence of aeolian dunes advancing across glacial pond sediments only 3.5 miles northeast of campus. This documents the arrival of Holocene drought conditions in western New York before the onset of the more modern climate. Verification of the dune origin of the sand has been demonstrated by quantitative sieve analyses in the Geological Sciences Laboratory. Optically stimulated luminescence (OSL) and carbon fourteen (¹⁴C) dating of these sediments is currently in progress to determine whether the age of this event corresponds with an 8,200-year-old climatic cooling documented in the broader geologic record. *Selected for presentation at Buffalo Association of Professional Geologists, Buffalo, NY.*

160 • Beach Sand Grain Analysis to Determine Source Regions, North and South Island, New Zealand

FORREST LEGAWIEC, LAUREN BRANDT
FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

Samples of sand were collected from four different beach localities in New Zealand during January 2017. The samples were taken from Hokitika and Gillespie Beach located on the West coast of New Zealand's South Island, Murawai Beach located on the West coast of New Zealand's North Island, and from White Island located in the Bay of Plenty. The samples were then transported back to SUNY Geneseo where the samples were sieved to determine grain size distribution. SEM and a light microscope were then used to aid in mineral identification and determine mineral abundances in each sample along with grain angularity. Data was then used to determine relative proximity to source region of the sand grains and a probable source region.

161 • The Mineralogical Composition of Glacial Flour Suspended in Glacial Lakes, Hooker Lake and Lake Pukaki in the Southern Alps, Mt. Cook Area, South Island, New Zealand

RYAN MCKENDRY, KIRSTEN LOMNITZER
FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

The regression of glaciers in the Mount Cook region of New Zealand has produced many glacial lakes that are fed by the small surviving glaciers that exist near Mount Cook. Water samples were collected from two glacial lakes in this region to determine the mineralogical composition of the glacial flour suspended in the water. The first sample was collected from the pro-glacial lake of Hooker Glacier, at the base of Mount Cook. The second sample was collected farther downstream at Lake Pukaki. Samples were filtered through a 0.45 µm glass fiber filter and the filtered sediment was compared to determine which had the greatest amount present. Particles could not be identified using a petrographic microscope, so a scanning electron microscope (SEM) was used. The samples from the Hooker Lake contained more and smaller particles composed of silica, iron, aluminum and magnesium. The samples from Lake

Pukaki contained particles composed of silica, iron, aluminum, magnesium and potassium which were larger and fewer in number. Watersheds for the lakes were outlined using ArcGIS to determine the provenances of the glacial flour. Hooker Glacier was found to have a much smaller watershed than that of Lake Pukaki.

162 • An Analysis of Devitrified Obsidian from Aratiatia Rapids, Taupo, New Zealand

ALISON COOK, RILEY SESSANNA
FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

Samples of a felsic igneous rock were collected from the footpath at Aratiatia Rapids. The rapids are located off highway 1 in Taupo, roughly 11 km northeast of Lake Taupo, New Zealand. The hand samples collected consisted of roughly 20 percent rhyolitic glass (obsidian) and 80 percent globular shaped spheres called spherulites. Individual spherulites were observed under a scanning electron microscope (SEM). Through backscatter imagery the spherulites were found to contain a fibrous material as well as smaller, more well-developed micro-spheres in their internal structure. Individual spheres and fibers were analyzed using backscatter images and energy dispersive X-ray technology (EDS) maps. SEM analysis allowed for the chemical identification of the spherulites, spheres, and fibers each with mineral structures that complement one another yet differ in maturity. The elemental composition of the spherulites peaked in Si and Al, with significant traces of Na, K, and Ca. This chemical analysis we concluded that the microspheres are cristobalite while the fibers anorthoclase. Based on the physical and chemical characteristics the spherulites are thought to be a product of obsidian devitrification.

163 • Mineralogical and Petrological Comparison of Volcanic Rocks from Tongariro Crossing, New Zealand

ANDREW THEAL, ANNA CHINCHILLI
FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

Two samples were collected from Tongariro Alpine Crossing in New Zealand's North Island. The rock samples were collected from the area between the two mountains with the intention of studying the homogeneity of TgVC lavas. The rocks were examined on a hand sample level, as well as in greater detail with the aid of petrographic and scanning electron microscopes. Sample 1 has a porphyritic texture, with hornblende phenocrysts of approximately 1 mm diameter. Closer viewing revealed that the matrix consists of microcrystalline plagioclase and quartz, and that the rock contains apatite as well as iron- and titanium-rich minerals. Certain minerals contain zones of high chromium and low iron concentrations. Sample 2 also has a porphyritic texture, but it contains only plagioclase phenocrysts of approximately 1.5 mm diameter in a dark gray matrix. Based on our findings, we have broadly characterized Sample 1 as an andesitic basalt and Sample 2 as a basalt. The rocks' textures suggest that they share a similar cooling history,

having crystallized slowly before being erupted. However, their differences in mineralogy show that they formed from magmas with different compositions. *Selected for presentation at Buffalo Association of Professional Geologists, Buffalo, NY.*

164 • Utilizing Reflectance Spectrometry to Define the Hue, Value, and Chroma of Colors

BRENNAN VOORHEIS

FACULTY SPONSOR: DORI FARTHING, GEOLOGICAL SCIENCES

Color is often an indicator of chemical variation among different samples of the same rock type in the field of petrology. When being treated as a significant variable, it is important to define a sample's color as accurately as possible, and communicated with precision. Reflectance spectrometry can be utilized to numerically define a sample's color in order to meet this requirement. A reflectance spectrometer displays the sample's light reflection and absorption properties, which can be interpreted to define the sample's color. Using various mathematical techniques, several aspects of the studied sample's color can be defined with a high degree of accuracy, such as its hue, degree of lightness or darkness, and saturation. Samples that feature multiple forms of coloration within the studied area can also be accurately defined, however it does create a small degree of potential error if one of the colors is caused by chemical alteration, such as oxidation. The use of reflectance spectrometry to numerically define color allows for easier findings of statistical correlations between a rock's color and chemistry. In finding these correlations, color can be used to quickly determine properties of an individual sample, such as previous exposure conditions and concentrations of economically valuable materials. *Selected for presentation at Geological Society of America Annual Meeting, Seattle, WA.*

165 • Sedimentary Analysis of Beds Within the Upper Huka Group

COLE FARNAM, COREY HENSEN

FACULTY SPONSOR: JEFFERY OVER, GEOLOGICAL SCIENCES

Sediments were collected from two locations on the Totara Gut bike path at Huka Falls on the North Island of New Zealand. Initial field analysis suggested a lacustrine depositional environment for both outcrops. The stratigraphically lowest sample was identified as a diatomite based on prior work. Further sedimentary analysis of the diatomite revealed the composition to be primarily mud with some angular volcanic glass and diatoms, dominated by Pinnularia, Stauroneis, and Surirella, confirming a quiet, lacustrine depositional environment. The vast majority of microfossils in this sample do not appear to be diatoms but some other form of unidentified organism made of siliceous material. Sedimentary analysis of the stratigraphically higher bed revealed that it was likely not lacustrine in nature, due to the absence of diatoms or mud and the abundance of tephra. Given the distinct sedimentary characteristics of the two outcrops, it is apparent that they were formed under different depositional environments, with sediments higher in the

section coming from volcanic processes largely in the absence of water.

166 • Dertermination of the Frasnian-Famennian Boundary with Conodont Biostratigraphy of the Dyer Formation, Western Colorado

JOSEPHINE CHIARELLO, EMILY HAUF

FACULTY SPONSOR: JEFFERY OVER, GEOLOGICAL SCIENCES

The Dyer Formation, made up of the Broken Rib and Coffee Pot members, is abundant in biota up until the Frasnian-Famennian boundary, which denotes a mass extinction event. The rocks being sampled consist of mudstones, shales, grainstones, and dolostones. These carbonates were deposited in a shallow marine environment, which occupied the mid-United States. The boundary is found in the lower Coffee Pot member, not much above the transition. Researching the biostratigraphy of this formation should aid in determining the cause(s) of this Devonian extinction event. Samples collected come from two localities, Bison Lake and Deep Creek Canyon. As a continuation of an existing project, we have been researching the biostratigraphy of these two specific locations. Biota in our specific research has yet to be found. Based on past research of this formation, we are expected to find conodonts in our samples. The upper Broken Rib and lower Coffee Pot are expected to yield conodonts. Research has shown that Siphonodella and Pseudopolyganthus are found in the upper Coffee Pot strata. These fossils are expressive of the Lower Carboniferous, and occur above the boundary. Our further research could find more conodont zones in the upper Coffee Pot.

167 • Degree of Pyritization of Various Tissue Type: A Taphonomy Experiment

CAMERON CUMMINGS

FACULTY SPONSOR: LINDSAY MACKENZIE, GEOLOGICAL SCIENCES

Complete pyritization of organisms is rare in the fossil record, but these exceptional instances provide incredible insight into past forms and environments. Pyritization preserves fine details of both plant and animal tissues, which are lost to bacterial activity under normal decay conditions. The specific taphonomic processes responsible for the preservation of the variety of tissues observed in the fossil record remain unclear. This study aims to determine which tissues are most likely to be preserved under conditions similar to the Eocene London Clay. Taphonomy experiments were conducted using plant leaves, plant stalks, chitons, and polychaete worms to observe the degree of pyritization in the different tissues. Pond sediments doped with 1% amorphous oxyhydroxide, 1.5% yeast extract solution, and artificial seawater were used to bury the organisms. Samples were sealed and left for six weeks, with anoxic zones rapidly developing (within a week) in the sediments surrounding most of the decaying organisms. At the end of the experiment the samples will be harvested and analyzed using XRD, SEM, and ICP-OES. This study will reveal the impact tissue type has on the potential for pyritization of an organism and may

explain why it is rare in the fossil record. *Selected for presentation at Buffalo Association of Professional Geologists, Buffalo NY.*

168 • Utilizing Fall and Flow Characteristics to Determine Large Scale Eruption Styles, TVZ New Zealand

CHRISANNE ROSS, ANASTASIA FLANARY ESPINAL

FACULTY SPONSOR: LINDSAY MACKENZIE, GEOLOGICAL SCIENCES

The Taupo Volcanic Zone (TVZ) on the North Island, New Zealand is host to multiple volcanic events, including the Taupo and Oraunui eruptions. The eruption events are preserved as ash fall and flow deposits whose emplacement mechanisms are recorded within the distributions of particle size and shape, denoting level of sorting. Flows are characterized as poorly sorted and matrix-supported, whereas falls are well sorted, clast-supported, and weakly layered. Samples of volcanic ash were collected near Taupo, from the Totaio Cut Short Ride to Waikato River path, to distinguish fall versus flow and to clarify the eruption style through textural characterization. Samples were weighed and sieved to determine flow style and competencies. Thin sections were prepared to observe the internal microstructures of larger lapilli. The microstructures of the lapilli will give insight into the amount of water present during formation to further identify the style of volcanic eruption. The data will clarify the variety of eruption styles exposed in this area, as well as reveal the source--Oraunui or Taupo eruption--of the ash deposits.

169 • Geochemical and Structural Analysis of Siliceous Sinter Deposit: Tongariro Crossing (TVZ), New Zealand

MATTHEW HARNISH, ALEC MANKE

FACULTY SPONSOR: LINDSAY MACKENZIE, GEOLOGICAL SCIENCES

Sinter deposits are formed in association with hydrothermal vents and can have a variety of morphologies formed through biotic and abiotic processes. These hydrothermal environments are host to diverse microbial communities tolerant of extreme conditions. Sinter from ancient vents can fossilize microbes within its layers, providing information about life in these environments. These deposits are thought to be analogues for early life on Earth as well as life on other planets. This study focuses on sinter collected from an ancient vent at Tongariro National Park in New Zealand. Our goal was to search for evidence of microbes and to evaluate sinter polymorph structures with rock chemistry using light microscopy and SEM/EDS. The results of this study gives us a better understanding of ancient hydrothermal systems and the alteration processes they may undergo. This research can be used to identify similar structures in other sinter deposits both on Earth and other planets.

170 • Experimental Taphonomy: The Effects of Sediment Grain Size

on Microbial and Mineral Film Growth on Tissues

MATTHEW NIGRO

FACULTY SPONSOR: LINDSAY MACKENZIE,
GEOLOGICAL SCIENCES

Exceptionally preserved fossils are rare in the fossil record and are often found buried in fine-grained sediments, as seen in many fossil Lagerstätten. Biofilms are linked to high fidelity preservation by rapidly encrusting organisms and precipitating mineral films. Fossilization experiments have shown this process, but mostly focus on varying chemical conditions in the water. To better understand Lagerstätten, attention must also be given to the entombing sediments, which affect diffusion rates, limiting nutrient availability to the biofilms. This study analyzed how varying sediment grain sizes affect microbial film growth and development of mineral films on the tissues of buried organisms. Marine snails were euthanized, buried in different grain sizes (silts and clays, very fine sands, and fine sand) of granitic sediment, and had artificial seawater added to imitate the depositional environment of many Lagerstätten settings. Samples were harvested, and analyzed using light microscopy, X-ray diffraction, and scanning electron microscopy to identify timing of biofilm and mineral film development in each grain size. This research provides better understanding of the role of sediment grain size on the preservation of soft tissues, and helps constrain the taphonomic processes responsible for fossilization. *Selected for presentation at 2017 Geological Society of America Annual Meeting, Seattle, WA.*

171 • Using Sediment Classification to Determine the Provenance and Depositional Setting of the Clay Cliffs, New Zealand

NATHAN SMARZC, PETER VAN ECK

FACULTY SPONSOR: LINDSAY MACKENZIE,
GEOLOGICAL SCIENCES

The Clay Cliffs in the Mackenzie Basin, New Zealand are a cliff-forming sequence of coarse and fine-grained siliciclastic sedimentary facies, whose depositional environment is unclear. The goal of this research was to determine the mode of deposition and provenance of the grained facies of the Clay Cliffs. Two sample were collected, one from an upper flow and one a lower flow, for sedimentary analysis. The samples were sorted by grain size through sieving and classified by composition using a light microscope. Using a sieve, the samples were separated into 10 different size increments respectively, ranging from 5660 microns to under 63 microns. Each grain size was then weighed and plotted to illustrate the size distribution and different competencies of the flows. Classification of 3,426 sand grains were plotted on a Quartz-Feldspar-Lithics (QFL) diagram in order to determine a composition of the provenance. The imbrication of grains within the strata and the presence of a clay matrix contradicts the previously thought glacial origin of these deposits and are instead indicators of deposition by a debris flows with two different competencies. We also concluded the provenance to be a product of a recycled orogen through the use of a QFL classification diagram.

172 • Effects of Exposure Prior to Burial on Preservation of Detailed Morphology in Fossils

TIMOTHY CLARK

FACULTY SPONSOR: LINDSAY MACKENZIE,
GEOLOGICAL SCIENCES

Preservational bias in the fossil record is associated with the composition of an organism's tissues. For example, a hard-shelled organism is more likely to be fossilized because hard tissues are more resistant to decay than the soft tissues. In deposits containing exceptional fossils with soft tissues, rapid burial is often cited as a factor to preservation. It is unclear how quickly after death burial needs to occur in order to preserve the morphological detail seen in high-fidelity fossils. This study aims to determine how post-mortem burial timing affects morphological detail and mineralization potential of marine worms. Worms were buried in fine-grained sediments and artificial seawater at short-term time intervals (0, 3, 6, 12, 24 and 48 hours) after euthanasia and left buried for 2 weeks. The exhumed samples and encasing sediments were analyzed using scanning electron microscopy and X-ray diffraction. Control worms were left unburied to examine morphological deterioration and decay over the experimental period. Disarticulation occurred rapidly and morphological detail was lost in samples left unburied. This taphonomy experiment highlights how decay affects tissue preservation and how post-mortem burial can mitigate this. *Selected for presentation at Buffalo Association of Professional Geologists, Buffalo, NY.*

LANGUAGES AND LITERATURES

173 • 21st Century: World is Changing From Worse to Better? or Better to Worse

QI ZHENG, THOMAS LIN, IVAN GALLEGU
HERNÁNDEZ

FACULTY SPONSOR: JASMINE TANG, LANGUAGES
AND LITERATURES

Our GREAT Day Presentation is going to represent Chinese 102. Our great day project is consists of 3 different cultures including American culture, European culture, and Chinese culture. The 3 different cultures bring about similar and differences of culture customs. Through this poster presentation we want to spread the knowledge about different culture to different audience about all 3 of these cultures to better the understanding of 3 different communities, and their way of life.

MUSIC

174 • Music, Movies, and *Oliver Twist*

JOHN COACCI, STEPHANIE BROWN, FRANCESCA
DIGIORGIO, MIRANDA FIERO, HANNAH LOO,
TORI SHERELIS, KATHERINE ZASLAVSKY

FACULTY SPONSOR: BROOKE MCCORKLE, MUSIC
Charles Dickens' classic story *Oliver Twist* has inspired numerous cinematic adaptations, including films from 1922, 1948, and 1968. These three films represent contrasting examples from silent film, classical Hollywood era, and movie musicals. This presentation examines how the role of audio in film versions of *Oliver Twist* has evolved

from the silent era to the present day. Within films, music and sound are used to depict characters and portray the film narrative. However, the specific ways in which they are used to do so have changed as the role of sound in film has expanded. Specifically, the earliest adaptation relies upon a cue sheet for musical accompaniment, while the latter film and musical adaptations have specific scores written for the productions. Our projects draws on archival materials donated to SUNY Geneseo by Professor Jim Kimball, collections held at the George Eastman House, and the films themselves.

PHYSICS & ASTRONOMY

175 • Reduced Noise UV Enhancement of Etch Rates of Nuclear Tracks in CR-39

DAVID CLARKSON, RUBAB UME

FACULTY SPONSOR: JAMES MCLEAN, PHYSICS &
ASTRONOMY

The use of CR-39 plastic as a Solid State Nuclear Track Detector is an effective technique for obtaining data in high-energy particle experiments including inertial confinement fusion[1]. To reveal particle tracks after irradiation, CR-39 is chemically etched in NaOH at 80°C for 6 hours, producing micron-scale signal pits at the nuclear track sites. Using CR-39 irradiated with 5.4 MeV alpha particles and 1.0 MeV protons, we show that exposing the CR-39 to high intensity UV light before etching, with wavelengths between 240 nm and 350 nm, speeds the etch process. Elevated temperatures during UV exposure amplifies this effect, with etch rates up to 50% greater than unprocessed conditions. CR-39 pieces exposed to UV light and heat can also exhibit heightened levels of etch-induced noise (surface features not caused by nuclear particles). By illuminating the CR-39 from the side opposite to the tracks, a similar level of etch enhancement was obtained with little to no noise. The effective wavelength range is reduced, due to strong attenuation of shorter wavelength. *Selected for presentation at 2016 American Physical Society Division of Plasma Physics Conference, San Jose, CA.*

176 • Bulk Etch Rate and Swell Rate of CR-39

DAVID CLARKSON, RUBAB UME

FACULTY SPONSOR: JAMES MCLEAN, PHYSICS &
ASTRONOMY

The use of CR-39 plastic as a Solid State Nuclear Track Detector is an effective technique for obtaining data in high-energy particle experiments including inertial confinement fusion[1]. To reveal particle tracks after irradiation, CR-39 is chemically etched in NaOH at 80°C, producing micron-scale signal pits at the nuclear track sites. The development of these pits depends on both the bulk etch rate and the faster etch rate along the track, and is complicated by swelling as water is absorbed. Contrary to common etching models, we find the bulk etch rate to be depth dependent, as revealed by swelling TASTRACK CR-39 pieces to their maximum capacity prior to etching. The bulk etch rate was measured using the standard mass method as well as the fission fragment track diameter method. Combining models of swelling and etching rates predicts the progress of bulk

etching during a standard etch, without pre-swelling. This result has implications for the understanding the chemistry of the etch process, as well as the outcome of CR-39 surface preparation methods. *Selected for presentation at 2016 American Physical Society Division of Plasma Physics Conference, San Jose, CA.*

178 • Comparison of Energy Storage Systems for a Sustainable Future

CARA GANNETT

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

Two 1,200 watt photo voltaic sun tracking solar panels and a 3,500 watt wind turbine have been successfully installed on the eGarden site. The power they generate run a number of different electrical devices at the eGarden. The excess energy produced during the day must be stored for use when these sources are not available. For this reason, a variety of storage systems will be studied at the eGarden during the next few years to determine the most efficient means of storage. Currently, the solar panel energy is being stored in a bank of four 12 volt deep cycle batteries placed in series. Although batteries have shown to be effective storage devices, they are energetically costly to produce and may not have an effective energy return in their lifetime. Through this poster I plan to show data I have gathered on the efficiency of energy storage in lead acid batteries. This poster intends to show the connection between the voltage and current outputs of the battery to the reactions occurring within the battery while it undergoes charge/discharge cycles. This poster is intended as a compliment and extension of the information presented in my GREAT day presentation.

179 • Characterizing ICF Neutron Signals on the nTOF Line at SUNY Geneseo

HANNAH VISCA, HANNAH HARRISON, PRAVEEN WAKWELLA, DAVID (ALEX) CHIN

FACULTY SPONSOR: STEPHEN PADALINO, KURT FLETCHER, PHYSICS & ASTRONOMY

During the summer of 2016, a series of experiments were conducted at SUNY Geneseo's Tandem Pelletron Accelerator Laboratory to study the response of a BC-412 plastic scintillator to various types of radiation. Because scintillation detectors are sensitive to both neutrons and gamma rays, it can be difficult to isolate a single neutron response. Furthermore, plastic scintillators are incapable of making accurate energy measurements for incident particles. The Associated Particle Technique (APT) has been shown to be a useful method for tagging neutron signals produced by the detector, however it is a challenging and time consuming process. The hope is that by using cosmic-ray muons or UV photons, which are readily available, a comparison can be made between their response and an APT neutron response. If the light-decay curve produced by an APT in the scintillator can be correlated to different types of radiation, then this would suggest that these more convenient sources could be used to calibrate detectors for ICF and HEDP applications, mitigating the need to use only neutron-producing

sources. *Selected for presentation at National Ignition Facility Users Group Meeting, Livermore, CA.*

180 • Time-Resolved Tandem Faraday Cup for High Energy TNSA Particles

MARY KATHARINE GINNANE, BILAL KOUSAR, SARAH MANDANAS, KEVIN PALMISANO, JOSHUA SLISH

FACULTY SPONSOR: STEPHEN PADALINO, PHYSICS & ASTRONOMY

The MTW Laser at LLE utilizes an ultra-intense laser to produce high-energy heavy ion pulses through target normal sheath acceleration (TNSA). Using the Time-Resolved Tandem Faraday Cup (TRTF) the total number of heavy ions produced by TNSA can be determined, which is needed for stellar nuclear reaction cross section measurements. TNSA heavy ions stop within the thin walled front cup, while light ions pass through and deposit their remaining charge in the back cup. A two channel storage scope measures the voltages produced by the beam currents collected in the cups, respectively. The charge state fraction of the plasma ions is modified by passing the heavy ions through a charge-exchange foil at the TRTF entrance. While passing through the foil, the ions equilibrate to known charge states based on their velocities. Using time of flight, the total heavy ion current can be normalized to the correct charge state fraction. A pair of dipole magnets deflect relativistic TNSA electrons from the cup's entrance. They also prevent secondary electrons from escaping the front and back cups. Funded in part by a LLE contract through the DOE. *Selected for presentation at American Physical Society Division of Plasma Physics, San Jose, CA.*

POLITICAL SCIENCE & INTERNATIONAL RELATIONS

181 • Where is the New New Deal?

ALEXANDER FANTAUZZO

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This poster will compare the policy responses of the Great Depression and the Great Recession, and examine why the former resulted in significant changes in economic policy while the latter did not. It will include factual information about the downturns as well as analysis of the political climate.

182 • Campaign Money and Economic Inequality

ANTOINETTE LUBICH-CLAPS

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

I am going to be researching how contributing money to campaigns grants people access to politicians. There was a study done where researchers sent emails to different politicians and some stated that the person was a campaign donor and others just stated that they were constituents. The campaign donors were able to gain access to a meeting with the politicians at a statistically significant higher rate than constituents. This contributes to economic inequality because not everyone can afford to donate to a campaign and thus not everyone has an equal chance at gaining

access to a meeting to express their concerns or opinions. I am going to do more research beyond this study about campaign contributions and how that facilitates access to politicians. I am also going to look at what gaining this access to politicians accomplishes.

183 • Ethnic and Economic Inequality in Public Policy

CAROL SANCHEZ

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

I plan to explore the effects of public policy in the United States in regards to the vast inequalities that exist in the ethnic and economic playing field. I will compare different tactics used by politicians and policy-makers in order to create policies that tend to reward their supporters or specific constituencies while purposely leaving out many unpopular groups of the American public.

184 • Mentorship as a Tool for Ameliorating Economic Inequality

EITAN SIRKOVICH

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Over the last half-century, the United States has experienced a growing gap between the incomes of the poorest and richest members of society. The issue of income inequality is complex, and there is no solution that will be a silver-bullet. That being said, improving the United States' education system is viewed by many as one of the best remedies available. A good education provides two things: skills and role models. Advocates of the education solution focus predominantly upon skills. Improved skills combat inequality by making it easier to acquire good-paying, stable jobs. The impact of role models is discussed less frequently. Mentors grow students' social capital and serve as connections to the labor market who can help them land a job. Mentors also inspire students to reach higher by encouraging them to go to college or to take advantage of other opportunities that may improve their condition later on in life. This research examines the gap in availability of mentors to rich and poor youth, what mentorship programs currently exist and what distinguishes them from one another, the impact of mentorship programs on low-income youth, and if investing in these programs is an efficient way of combatting inequality.

185 • Enlightened Preferences and Perceptions of Economic Inequality

JACOB FLEISCHER

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Economic inequality is a growing concern for many Americans today. However, perceptions towards inequality can be influenced by a host of factors, including the extent to which an individual is politically informed. By analyzing ANES survey data, I will examine the influence that "enlightened preferences" have on opinions of economic inequality. Previous research into this subject has explored the relationship between party identification and opinions of inequality, but for my presentation I will also take into account the impact of other demographic variables.

186 • Economic Inequality and Gender: A Comparative Analysis

JESSE BENNETT

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the 21st Century income inequality has grown significantly across the developed world. This growing gap between the top 1% and the bottom 20% has had a disproportional impact on women in particular. Historically, women have been granted less advantages in the work place compared to men. Changes in the family structure, such as an increase in single-parent homes and increased divorce rates, have exacerbated economic inequality between men and women. Furthermore, women have been paid less than men for the same jobs, in the United States still only earning 76 cents to the dollar compared to men. Government policies across Europe and the United States have tried to compensate for this growing disparity. A comparative look at the United States and several European countries reveals the differences in treatment of women regarding income and welfare. The European Welfare state with robust social safety nets provide a staunch comparison to the individualistic American Dream where "welfare" is a stigmatized word.

187 • Public Opinion on Income Inequality: Facts versus Perception

KYLE PIPER

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Income inequality in the United States has cultivated a growing body of research in recent decades. Studies from scholars such as Larry Bartels have provided evidence that Americans are, in fact, aware that the wage gap between the wealthiest Americans and the middle/working classes has significantly widened. Despite this awareness, the issue remains on the periphery of current political discussions and debate. I theorize that while Americans perceive that income inequality is a problem, the issue does not attract the necessary popular attention required for policy change for a variety of reasons. These factors include the complexity of the issue, the slow responsiveness of elected representatives to address the problem, and the impact of the media in presenting the information in a clear and understandable manner. My poster will detail the influences these factors have on the lack of policy surrounding this issue and discuss proposed methods aimed towards shifting public opinion regarding income inequality as a salient political issue.

188 • Long-Term Effects of Childhood Educational Inequality on Income Inequality in the United States

LISA KAASIK

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

For this project, I propose an analysis of the impact of childhood educational inequality on future earnings. I will examine the existing literature on the long-term impacts of poor school districts on future income inequality and the efficacy of improving childhood

☞ Promotes sustainability

education for socioeconomically underprivileged children in terms of future incomes.

189 • Perspectives of the American Dream overtime in Varying Social Climates

MARGARET DORAN

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

My presentation will be exploring the different perspectives of the American Dream and how it has developed or depleted in our culture. I will examine the American public's overall attitude towards it. I will then draw in on specific areas of the country and how those perspectives vary based on the culture of the specific community. For example, the perspective of the American Dream in the Moron Community in Utah versus the perspective in an urban, large city setting.

190 • Exploring the Phenomenon of American Economic Equality through an International Comparative Lens

MATTHEW COOK

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

I seek to research and discuss American economic inequality, a topic increasingly relevant in the modern political atmosphere. Instead of merely researching the effects of income inequality on all factors of life in America, I wish to apply my previous findings to other nations around the world in order to create a more comprehensive look into the issue of income inequality. Most importantly, I hypothesize that the existence of the American Dream plays a very large role into the overall equation of international income inequality, especially as it pertains to the United States' perceived need to come first for almost every internationally progressive policy.

191 • Lobbying and the Inequality of Political Representation

MICHAEL BARANOWSKI

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The topic takes a look at the effects that lobbying has on political representation by the members of the Legislative Branch. Through efforts of debate framing, legislative creating, and issue funding, lobbying corporations have pushed their policy agendas throughout the American public and their political representatives in Congress. This paper examines the level of representation interest groups have been able to secure over members of congress and tries to gauge how this influenced the political landscape. Further by examining who major lobbying groups are representing, it is possible to gauge how much they are able to tilt the scales of political representation towards their policy goals. Lastly, by adding in an examination into the ethics and morality of lobbying as an industry, a full picture of lobbying and its effects on the inequality of political representation can be created.

192 • Decreasing Income Inequality in the United States: Possible

Solutions

RACHEL CAMPBELL

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Income inequality in the United States has increased substantially since the 1970s and, as the saying goes, "the rich are getting richer while the poor are getting poorer". This phenomenon is problematic for many reasons, but perhaps the main one being that the level of income inequality we have today allows for some groups of people (specifically the affluent) to have more of a voice and power in politics. This goes against our idea of a Democracy where each person is equally represented. However, it is not enough to simply examine and study income inequality, but it is even more important to examine plausible solutions to stopping the increase and even decreasing income inequality in the United States. This poster presentation will thus examine potential policy choices that could be (or perhaps are already being) made that will stop the exacerbation of income inequality.

193 • Unequal Opportunities for Higher Education

RACHEL WILCOVE

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Higher education paves the way for many future opportunities, and today is often seen as a requirement for educational and career advancement. However, the growing income inequality in America inhibits many from achieving a higher education. This presentation will focus on the divides created as a result of income inequality, and how this affects access to higher education. In addition, it will explore the intersections of class, race, and gender, and how these factors can serve as obstacles for access to higher education. Moreover, this presentation will also discuss how the lack of access to higher education for individuals of lower socioeconomic status, may contribute to increasing income inequality in the United States.

194 • Analysis of Public Opinion on Healthcare

SASHA MILLER

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This research project seeks to determine public opinion on Healthcare as it relates to inequality. Within the current socio-political climate, concerns regarding the repeal and replacement of the Affordable Care Act, commonly known as ObamaCare, has reached the forefront of the political agenda. I seek to examine the consequences of repealing and replacing ACA and the public's response to said ramifications.

195 • Economic Inequality in the LGBTQ Plus Community

TAYLOR VISHON

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The more marginalized an individual is in the United States, the more likely they are to be

impoverished. This study aims to analyze the economic disparity between the average American and the LGBTQ Plus community, further broken down by race, gender, and geographical location.

196 • Public Policy, Economic Inequality, and the Business Cycle

VICTOR LAZARTE

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The steady increase in income inequality since the 1980s has focused attention on the causes of that inequality, including the effects of government policies on the trend. Likewise, various studies have shown that the business cycle can impact the distribution of incomes through a variety of channels. This research focuses on the contribution of federal economic policy to changes in the income distribution given the known effects of fluctuations in the business cycle on inequality. I look at major policies that affect the economy during expansions or that are aimed at addressing contractions to determine whether they exacerbate or diminish the contemporaneous pressure on inequality.

197 • Impact of America's Public Opinion on Public Policy

ZORA RAGLOW-DEFRANCO

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

How does the American public's opinion of the poor affect public policy? More specifically, does a negative opinion of the poor translate to less congressional policies being implemented that decrease American economic inequality? These are important questions because often public opinion of the poor is undeservedly negative. Public opinion can be affected by biases in the media and a misguided idea of the American Dream. Public opinion that can be heavily impacted by personal bias or non-factual beliefs should not be a basis for what public policy is implemented, especially if the policy increases the ever-growing economic inequality in America. Although many Americans do not tie public opinion to tangible actions such as the creation of welfare policies, research shows that there is a correlation between the American public's opinion of the poor and the creation of public policies that affect economic inequality.

198 • Comparing Feminism Legislation and How Much Progress Has Been Made

AMY KELLEY

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Gender equality in China is something that has not come as easily as in other countries. The history of Confucianism as well as yin and yang both view women as a lower position than men in the order of the universe. Men were expected to find a wife but stay home and take care of the elders while women left the home, often becoming members of their husband's family. Feminist theorists of both comparative politics and feminism in China have been able to analyze the different methods of creating equality in the country. Although full equality has not been achieved huge steps have

been made, especially when focusing on women's sexual rights. I argue that although a lot has been done, the way rights have been enforced has limited the full potential of equality and has dragged the process on for longer than necessary. By looking at how the policies were implemented it is possible to see how, in many ways, China has fallen behind, and although making progress today equality has still not been achieved.

199 • Analysis of the Political Economy of China: How China's Economy Helps Maintain a Unitary State

ANCHI FRIEDMAN

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

China is quite interesting in terms of its relationship between the economy and its government. The purpose of this paper is to examine the role the political economy plays in China's ability to maintain a communist state. Looking closely at China's history, the path to democratization looked promising, but there have been many factors that changed its course, which include the rise of Mao Zedong and his failure to run the state efficiently and successfully and the rise of Deng Xiaoping as the father of Chinese economics. I argue that economic success is the main reason for the Chinese Communist Party being able to remain in political power for the last few decades. I will rely on my exploration of China's history and economic data to help support my argument. This study will help highlight the importance the economy has played in shaping the actions of its government.

200 • Comparative Environmental Politics of the German Middle Class

ANDREW NAGEL

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In developed nations, climate change has become increasingly debated over the past decade. The unique, pluralistic European community provides a strong base for comparative environmental political analysis. Germany, specifically, plays an important social, economic, and political role inside Europe. I ask and answer: what are the social, economic, or political effects of environmentally friendly policies on the German middle class? Are there consistent, observable political outcomes on the middle class because of the presence of popular green parties? Does membership in the European Union spotlight environmental issues and what are the resultant changes over time, due to support for environmentally friendly policies, to the middle class of Germany because it is an EU member country? I use qualitative research and case-study analysis to determine whether environmental policies have any social, economic, or political influence on the German middle class. There is reliance on comparative environmental theory, institutional theory, and the workings of the political economy of Germany. This case-study is examined under the confines of these theories. The findings of this research may help predict the rise or fall of the German middle class as climate change becomes an even more prevalent issue.

201 • Motives and Intentions of Refugees in an Era of Border Protectionism

BRANDON DAY

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Throughout the history of Africa, once desired resources have been found, mass conflict arises. This trend has been observed so much so that it aptly has been termed the "resource curse". In more recent history however, the discovery of high quality diamonds in Sierra Leone, in combination with the seemingly ever increasing demand for diamonds by the developed world, helped to shape and define this curse. Through overarching political economy theory of international relations that perpetuated the resource curse, Sierra Leone saw civil war that lasted more than a decade and created countless refugees. In today's world, with the increasing discussions of refugees, the civil conflict derived from the resource curse in Sierra Leone, can help us further understand refugee motives. In particular, through surveys of first hand accounts by refugees who fled the country and returned along with those who didn't return, in contrast with those who could not flee the war. The findings of this conflict, though only representing a small sample of refugees within a single case study, will help add to the knowledge and understanding of refugees fleeing conflict and their intentions thereafter.

202 • Government Stability: How the Monarchy of Jordan Maintains Control in a Democratic World

BRIAN YALE

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The Hashemite Kingdom of Jordan gained its sovereignty in 1946 as a parliamentary constitutional monarchy, which has created a surprisingly stable yet limited democratic state. Throughout history we have experienced many revolutions that have been caused by the introduction of democracy to its people, however Jordan has maintained its patrimonial system with fake democracy without experiencing a major revolt from its people. I argue that this is due to the ability of this government to keep the upper echelon of those identified in its distribution of wealth content with the current government, along with the government's interest in maintaining relatively low levels of socio economic inequality. These two factors give adequate reasons as to why the people of Jordan are content with their government and are unlikely to change regime forms. I will be examining information provided by the World Bank and the CIA to provide socioeconomic information to justify Jordan's lack of revolution. The analysis of the lack of regime change should be treated with the utmost importance, as constant regime changes in this particular area of the world would only add to its unstable nature.

203 • The Saudi Arabian Feminist: Dangerous Instigator or Respected Revolutionary? Do Current Feminist

Movements Pose a Threat to the Absolute Theocratic Monarchy?

DANIELLE SCHMALZ

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Saudi Arabia is the one of the world's most sex-segregated states, yet a growing number of citizens are emerging as feminists, demanding more rights for Saudi women. In this presentation, I will look at several news sources and social media campaigns to determine if the feminist movements pose a threat to the regime type, an absolute theocratic monarchy under King Salman. I will begin by examining the mechanisms of the Saudi State and the presence of Sharia law. I will then look at a history of women's growing rights under the late king, Abdullah, and analyze the current king's stance on women's rights. Several feminist leaders and groups will be explored, specifically their goals and their plausibility of success. Iran will be included as a basis of comparison and hypothesis generation for the case of Saudi Arabia. Through the use of Contentious Politics and Feminism theoretical frameworks, I intend to generate a hypothesis about whether or not the feminist movements are popular enough among the Saudi citizens, and unpopular enough among the government officials, to inspire a coup d'état. These questions could be crucial in predicting the future of Saudi Arabia, and perhaps other conservative states.

204 • Success of Revolution: The Cuban Perspective

DEJIA JAMES

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Political culture theory aims to identify the sentiments of a population and its ability to dictate political outcomes. Revolutions incorporate an aspect of cultural spirit in order to rally support and propel the success of its work. Contemporary authoritarian regimes have historically utilized revolutions to forge a connection to the population it seeks to dominate. The Cuban Revolution embodies the role cultural relevancy plays to instate authoritarian rule. The admiration and attachment to revolutionary figures like Fidel Castro, Che Guevara and Camilo Cienfuegos, exhibit the integral role revolutionaries maintain in Cuban society. Castro and the revolution became infused with Cuban culture and subsequently fostered support for his political accomplishments. The ultimate success and legitimacy of a regime depends on its cultural relevancy. Through the example of Cuba, it is demonstrated that cultural significance gained through the process of revolution determines the support and ability to sustain an authoritarian regime.

205 • Regime Change, Political Culture and the Reoccurring Demand for an Autocratic Leader in Russia

ELODIE JACOBSON

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

After the tsarist autocracy fell in 1917, Russia transitioned from an autocratic monarchy to a Marxist-Leninist regime style, followed by

communism, a rampant attempt at capitalism, only to return once again to the authority of an autocratic ruler, Vladimir Putin. Despite shifting political regimes over the course of the twentieth century, Russian political authority has the tendency to revert back to autocratic leadership. Applying theories to political culture, I seek to determine whether or not Russian citizens truly desire or depend on a strong political monarch. If they do not, do they consider their government legitimate? Are there others entirely politically unengaged? Political scientists, Almond and Verba argue cultural factors produce certain regime outcomes. The desires of the participative citizen indicate which political system should be in place. In Russia's case, the citizen may call for a central, authoritative ruling body of power. Inglehart's World Values Survey works to assess peoples values across national borders, the political impact these values have, and support for democracy. Both resources can be used to evaluate political cultures impact on regime type. The tendency for Russia to revert to autocratic rulers may be explicable by a political culture demanding a strong political leader.

206 • Gender Equality in Scandinavia: How Feminist Theories Came to Shape Sweden's Government

EMMA BIXLER

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Scandinavia--comprised of Sweden, Norway, Denmark, Finland, and Iceland--is frequently hailed as the most progressive region in the world regarding gender equality and women's rights. The aim of this paper is to apply feminist theory to the Swedish government and analyze how those theories have shaped its democracy and, in a greater respect, Scandinavian institutions, through detailed research of the country's history and legislation. I argue that Sweden's self-proclaimed "feminist government" benefits its institutions, as well as society as a whole, in comparison to democracies without such rigorous policies for gender equality. I begin by tracing the origins of women's rights through the context of Sweden's democratization after the abolition of royal absolutism, with a specific focus on enacted legislation and the political representation of women. Using this information, this paper then applies feminist theory to Swedish government and takes a comparative approach to observe how these factors act to benefit social and economic aspects of Swedish democracy. This research is significant in promoting a worldwide embodiment of feminism through its incorporation in the framework of democratic institutions.

207 • Gender Inequality During the Mubarak Regime in Egypt

FATIMA ELMARAKBI

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Arab countries are often criticized for perpetuating gender inequality and have been failing women by denying them equal education opportunities, jobs, autonomy, and a general sense of safety. The Mubarak regime in Egypt is a perfect example of

how men use politics to oppress women and deny them civil liberties, leaving a legacy of gender inequality. By using feminist theories, we can examine the evolution of the place of women in Egyptian society throughout the Mubarak regime. Research shows that since Mubarak obtained power, fewer women are enrolled in school, there are fewer prestigious jobs available for women, and the number of incidents of sexual assault and harassment has increased dramatically. By gaining a better understanding of the causes eternalizing gender inequality in Egypt we can attempt to find solutions that take into account the historical and political influences leading to injustice.

208 • The Brexit Referendum: How the Remain Campaign Failed to Appeal to the Masses

FRANCESCA PANZARIELLO

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

On June 23, 2016, the United Kingdom voted in the "Brexit" referendum to leave the European Union. The referendum, a vote in which a single political question is put up for a general vote, held an ulterior significance for the British public, especially in terms of class divisions. In a larger context, the outcome reflected the growing disillusionment held for the current party system, and served as a rejection of the status quo. In particular, using the political culture theory, I argue that the working class vote, which did not align with the Labour Party's Remain platform, functioned as an outlet of disapproval against the elitist government and their Remain campaign spearheaded by the Conservative Prime Minister, David Cameron, and the Chancellor of the Exchequer, George Osborne. The working class felt neglected and disconnected with Cameron's government, especially in regards to immigration and traditional ideas of what constitutes "Britishness." The statistics represent how the Leave campaign were successfully able to tap into working class issues to the extent that it broke traditional party lines and created a crisis within the British political culture. The Brexit referendum illuminated contrasting ideas of national identity between the metropolitan elite and the working class.

209 • The French Revolution: How a Tumultuous Political Economy Mobilized the Masses

GABRIELLE SMITH

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the early 18th century the political climate was dominated by monarchies. Monarchies were slowly being challenged with the rise of democracies and republics and the formation of what we now know as modern-day politics. With the American Revolution only a few years before, there was restlessness amongst the French people that resembled that of the American colonists. With millions of Frenchmen living in poverty and the monarchy splurging on a life of luxury, the French masses led by the disgruntled bourgeoisie had met their breaking point. In a political economic view of the French Revolution, I will examine the relationship between land ownership

and inequality and the effect this had on the role of the elite, the bourgeoisie, and the masses. Using the redistributivist theory discussed by Ansell and Samuels in the book, *Inequality and Democratization: An Elite-Competition Approach*, I will examine and detail the importance of the economic variables of inequality and landownership in relation to social class unrest. Additionally, my analysis will include the mobilization of the masses against the elite autocratic state in their demand for increased participation in government affairs and increased economic equality.

210 • Movers and Makers: The Effects of Labor Mobility on China's Industrial Transformation and Emergent Middle Class

GALEN GIBIAN

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

As China shifted towards a market-based economy in the 1980s, a trend of rural-to-urban migration developed to meet labor demand in manufacturing-intensive regions. Due to the restrictive hukou registration system, many migrant workers lack access to basic provisions granted to permanent residents. Rational-choice institutionalism and political economy can illuminate the decisions made by bureaucrats and laborers alike. I argue that the hukou system subdued political efficacy and directly contributed to the lack of wage growth among migrant populations, thus facilitating the expansion of China as a developmental state. As China's economy transitions towards consumption-based growth, government policy has begun to raise wages and provide permanent relocation for migrant populations, presenting a potential threat to the nation's political traditions. I will employ a comparative historical approach focusing on institutional reform and macroeconomic trends. As similar patterns become evident throughout the Global South, it is increasingly important to understand the dynamics of rural-to-urban migration as it applies to political and economic development.

211 • Gender Inequality and Education in Senegal: A Political Aspect

HERSHLEY NELSON

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

JOE COPE, HISTORY AND CENTER FOR INQUIRY, DISCOVERY & DEVELOPMENT

In the past several years the study of Comparative Politics has significantly evolved. From a focus on the politics of superpowers to the study of different institutions in the most remote areas of the globe, comparative politics offers us a list of lenses through which we can better comprehend the world around us. However, there are disciplines such as education, that the field still fails to explore. In this paper I investigate the State of Female Education in Senegal, West Africa. Using the feminist political theory, I demonstrate how the gender disparity in education has negative impacts on the country. When a critical component of civilization such as education complies with

gender inequality, it causes problematic issues for society as a whole. This paper indicates why there needs to be an improvement in gender parity when it comes to education in Senegal if the country wants to move forward. This project is supported by the Geneseo Student Ambassador Program.

212 • Wealth Inequality in South Africa: How Apartheid-era Economic Structures Persevere at the Expense of the Majority

KATHLEEN HEANEY

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Remnants of the social order constructed during South Africa's apartheid era continue to manifest themselves within the nation's economic structure. After the fall of the National Party, the means of production were placed into the hands of the African National Congress. Instead of dismantling the prior economic system and demanding more equitable wealth redistribution, ANC elites maintain their economic dominance by preserving apartheid era business policies. This is at the expense of the poor, working class black majority. I will use the structure of the South African mining industry to demonstrate the way in which an elite minority is benefitting from the continued exploitation of the black working class. The events leading up to the strike at the Lonmin mining plant in Marikana exemplify the tension between the working class and the government's capitalistic ventures. To examine the public's reaction to this continuing wealth inequality, I utilize the current political organization of South Africa, particularly, political parties and protests. Through the lens of the political economy, one can see the ways in which South Africa's democratization has done little to affect the nation's inequitable economic structure.

213 • A Fearful Reality for Asylum Seekers in Australia

NORA MCKENNA

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Australia's approach to asylum seekers has been a topic of contested public policy, critique by human rights bodies and non-governmental organizations. Attitudes about outsiders stem from White Australia being a founding principle of the nation. The economic and social vulnerability that Australia experienced during the period of neoliberal reform sought to figure out a scapegoat for these issues. My paper will analyze how the political culture of Australia's attitudes towards outsiders influenced the formation of harsh immigration policies, such as the Papua New Guinea Agreement, which created an offshore detention center for asylum seekers. I will be administering a qualitative case study that analyzes the history of Australia's relations with the indigenous people, how those attitudes translated during the neoliberal era and then the result of the modern day human rights abuses occurring at Nauru and Manus Island, also known as asylum seekers off-shore processing centers. My research will emphasize the importance to the Australian government of "border security" over "human security". The political culture that has translated

into the Australian population has ultimately created a distorted view of outsiders that has resulted in a neo-colonial era with grave human rights abuses.

214 • The Institutional Limitations of Nicaraguan Democracy

RYAN HAYES

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

With the 2016 election of incumbent Daniel Ortega, the efficacy of Nicaraguan democracy has come into question. This paper will work through the assumptions of rational choice institutionalism, and explain how Nicaragua's president limited party competition by manipulating the constitution, allowing him to avoid term limit restrictions and win another term. The ability to run again combined with the monopolization of public resources to run for reelection, limited the opposition in the latest election, securing Ortega the presidency and his wife the vice presidency. In short, rational choice institutionalism posits that institutions influence the strategy of political actors, and when combined with personal preferences, produces systematic results. The evaluation will include a spatial model designed to represent the preferences of the executive and the judiciary. This will show how Ortega interacted with the courts, and how the institutional strength of the executive office combined with the relative weakness of the judiciary contributed to the amendment of the constitution, which ultimately influenced the last election. The research to answer this question consists of qualitative scholarly studies, including an analogous case of electoral authoritarianism in Mexico, serving as a theoretical point of reference (Greene, 2009).

215 • What Makes Feminist Movements Effective: A Comparative Examination of Argentina and the Feminist Movements within

SARAH HERNANDEZ

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The history of Argentina is a tumultuous one. From colonization to a series of dictatorships and dirty wars, the history of this South American nation is complex. Feminist theories of comparative politics can provide a framework to explain the political events that have shaped this country. I argue that despite the history of colonialism and the often patriarchal legacy it imposes, women have been able to adapt and even alter their own course of life and in turn have impacted in the national government. In order to examine to the development of feminist movements in Argentina, I will rely upon historical events starting from the era of Juan Perón and his notorious wife, Eva Perón more commonly known as "Evita". I will end in the period commonly known as the "Dirty War". I will demonstrate how specific political events such as "Peronismo" and the "Dirty War" have led to feminist movements and how they shaped Argentina in terms of political participation by women. The study of historical events is crucial as they have the potential to reveal and explain the

subsequent political movements of this and other countries.

216 • Weimar Why Them Why Then: An Analysis of Why the Weimar Republic Fell through the Lens of Political Culture

STEVEN KELLER

FACULTY SPONSOR: KARLEEN WEST, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

World War I brought great change to the world and some of the greatest change occurred in Germany where the historical monarchy was dissolved and replaced with the Weimar Republic. The regime would last for approximately fifteen years until it was dissolved by Adolf Hitler and the Nazi party. Many reasons have been given for why the regime fell including The Treaty of Versailles, The Great Depression, and numerous other factors. However I argue that the fall of Weimar was inevitable, and this is proven through an analysis of Germany and its Political Culture after World War I. Political culture is defined as making more explicit concepts such as political ideology, national ethos/spirit, national political psychology, and the fundamental values of a people. In short political culture is a set of attitudes, beliefs and sentiments that give order and meaning to a political process. Through my analysis of the Political Culture of Germany it is clear that the fall of Weimar was inevitable as the previous government structure still dominated the political climate of Germany leading to the failure of fledgling democracy in Germany.

236 • The C.I.G.A.R.S. Act; Creating Incentive for General Use and Adjustment of Rehabilitative Services

ADAM ONTIVEROS-OBBERG

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The CIGARS Act is a hypothetical piece of legislation that could be passed by a hypothetical congress to address the rising problems of drug use and addiction in New York State. The policy is a three-pronged approach that, if successful could easily be expanded and implemented in other states as well. The presentation would detail the intricacies of this legislation.

PSYCHOLOGY

217 • Observed and Perceived Conflict and Prosocial Behavior in Latino and Anglo American Children's Sibling Relationships

ARLENIS SANTANA, YASKAIRY CASTILLO DE LA CRUZ, VANESSA CEPEDA, DANNETTE LOMBERT, ISABELLE ORITZ, DEBBIEANN SANTANA, 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 present study examined Latino and Anglo mother's and children's perceptions of sibling relationships and their linkages to observed prosocial and conflict behaviors during sibling interactions. Because of the importance placed on family harmony and obligations in Latino culture, we expected that Latino siblings might show a more intimate bond, less conflict, and more prosocial behavior than Anglo siblings. Videotapes were transcribed and coded for prosocial behaviors (defined as any voluntary behavior intended to benefit the other party or the relationship) and conflicts (defined as exchanges containing mutual opposition). Our hypotheses were partially supported; Latino mothers rated their children's relationships as having more intimacy and harmony and less conflict than Anglo mothers did. These results may be attributed to sociocultural differences. The Latino children may be exposed to environmental factors that may elicit mothers to be more attentive to their child's upbringing, creating a more in sync bond. *Selected for presentation at Society for Research in Child Development, Austin, TX.*

218 • Observed Conflict and Averted Conflict in Middle Childhood Across Three Tasks

BRIANNA BROOKS-MILLER, MEAGAN SULLIVAN, KATRINA GALVIN, MARIA REMILLARD, KAYLEIGH SCHNEEBERGER, NICOLE SPENCER

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

As part of a longitudinal study of sibling and friend relationships, we examined 7-year-olds' conflicts and averted conflicts with siblings and peers during free play, construction, and game tasks. We hypothesized that siblings would have higher overall rates of conflict, aggression, and intensity than friends. Furthermore, we expected that the game task would result in a higher rate of conflict and averted conflict, with more aggression and a higher average affective intensity. *Selected for presentation at Association for Psychological Science, Boston, MA.*

219 • Task and Partner in Seven-Year-Old's Use of Assertive and Affiliative Language

CAITLYN FISHER, SHELBY LA MOND, SAMANTHA CYTRYN, MARISSA BERRY, ADNAN AHMAD, JULIA CAMERON, ELIZABETH FURST

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

As part of a longitudinal study, we examined 7-year-olds' use of assertive and affiliative language with siblings and friends during free play and a board game. Contrary to past research, we found that task and interaction partner may influence the use of assertive and affiliative language more than gender does. Research on gender differences in children's and adolescent's use of affiliative and assertive language has focused primarily on interactions with same-sex peers. Based on these studies, researchers have long suggested that boys use more assertive language than girls and girls use more affiliative language than boys. However, recent research suggests that the relationship between language use and gender is more complicated, especially when negative affect and mitigation are taken into account. Most research has focused on data collected during interaction

with friends at single time points during early or middle childhood. Relatively little is known about differences in boys' and girls' use of affiliative language, assertive language, and mitigation over the course of development, across interactions with different partners, or across different tasks or interaction contexts. *Selected for presentation at Association for Psychological Science Annual Convention, Chicago, IL.*

220 • Quality of Social Engagement Between 4-year-old Siblings and Friends

CARLY ANZALONE, ALYX RAMSAY, MELANIE DUDEK, AMANDA HARTMAN, MELODY CHOI, NICK TRELINSKI

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

We 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, semi-engaged, or un-engaged. The present study examines the quality of 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 Annual Convention, Chicago, IL.*

221 • Competition and Cooperation in Caribbean Children's Sibling-Peer Relationships

DOMINIQUE ELLIS, MARLIN MOREL, DIMITRI WING-PAUL, GLADYS NINSON, NANA BOAKYE, SABRINA CHAN

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

Children engage in social interactions among peers and siblings. Some of the social interactions that children make can develop social competence of certain peers. Social competence can be established when the peers are able to bond through similar values and engagement of activities and routines (Kyratzis, 2004). This study investigated the dynamics and differences in competition and cooperation among Caribbean siblings and peers. We further analyzed and focused on Caribbean children's sibling and peer interactions and measured how cooperative and competitive these interactions were during the three different tasks. These tasks were given in the form of construction, free-play, and board games and were then measured with a coding scheme scale. These games were used as a good medium for the participants to form a social order of their own that consisted of either alliances or criticisms (Kyratzis, 2004). In each family, these observations were focused on a target child between the ages of 5-11, interacting with a sibling and peer in a similar age range, separately. Even though there are few studies that focus on familial and peer behavior in Caribbean children, this study inquires the significance of familial and peer cooperation and competition.

222 • Aggression in Childhood and Verbal Irony in Adolescence

ELISE JOHNSON, AMANDA BARRY, BETHANY OWENS, MATTHEW VOLCY, MEAGHAN BARRY, WILSON MEI, SABRINA SALETA

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY

The purpose of the current study was to examine the relationship of aggression over time in seven year olds and adolescents. We then compared aggression to verbal irony use in adolescents. We expected that aggression in seven year olds would relate to aggression in adolescents and verbal irony. Based on the intent to harm in aggression, we expected there to be a link to sarcasm usage in adolescence. Forty-four middle class seven year olds were videotaped at home engaging in free-play and again at 17 in separate 15-minute cooking sessions with a sibling and a friend. The videotapes were coded for aggression and verbally ironic utterances. Our results showed different patterns for males and females. Males verbal aggression and physical aggression was related to verbal irony in adolescents. Females were seen to have a relational aggression pattern from age seven to adolescences. This demonstrates the connection between aggression in childhood to verbal irony in adolescence. This suggests that the intent to harm in childhood may transform into an attempt to ridicule, which may appear to be hurtful. This could show that the internal intent is still there from childhood, but the manifestation comes about in a more socially acceptable way. *Selected for presentation at Association for Psychological Science, Boston, MA.*

223 • Differences in Social Symmetry Between Siblings and Friends in Early Childhood and Adolescence

RYAN KIRRANE, TEAGAN PLIMPTON, ERICA LIBERMAN, MELODY MCALISTER, NICOLE ACCIERNO, AARON SLACK, SYDNEY WANKOFF-BIGNESS

FACULTY SPONSOR: GANIE DEHART, PSYCHOLOGY We examined the relationship between siblings' and friends' prosocial behavior at age four and age seventeen. We used coded data from recorded sessions of 43 four-year-old and 29 17-year-old Caucasian, middle-class children interacting with their siblings and their friends. We found that 17-year-olds have higher rates of prosocial behavior than 4-year-olds, and that the social symmetry of interactions depends on gender composition of the dyads and age group. *Selected for presentation at Association for Psychological Science Annual Convention, Chicago, IL.*

224 • When Vague Memories Make Things More Memorable

LUKE BAMBUIOSKI, SARAH SIMON, JUSTIN LEONTI

FACULTY SPONSOR: JASON OZUBKO, PSYCHOLOGY The production effect is the finding that words read aloud are better remembered than words read silently. One explanation is that reading aloud is a more distinct action, which leads to better memory for the spoken words than the read words. If this account is correct, then engaging in an even more distinctive process (such as singing words) should further enhance memory, whereas engaging in a less distinctive process (such as mumbling words) should reduce memory. In the present experiments, participants studied a series of words. In one group, participants read some words silently, others aloud, and sang others aloud (the

Sing group). In the other group, participants read some words silently, others aloud, and mumbled others aloud (the Mumble group). In both groups a memory test followed in which, participants were shown studied words intermixed with new (i.e., not studied) words. For each word at test, participants indicated whether the word was studied or new. Surprisingly, sung and mumbled words were equally memorable between groups. However, participants in the Mumble group had significantly more false memories for new words than participants in the Sing group. Mumbling may therefore reduce memory accuracy, but mainly by increasing false memories. We discuss the singing results in the context of musical experience and the mumbling results in the context of representational vagueness. *Selected for presentation at State University of New York Undergraduate Research Conference, Fredonia, NY.*

225 • The Interaction of Meaning and Forgetting

MOLLY BRADY, KYLE WALSH, ADAM WEAVER
FACULTY SPONSOR: JASON OZUBKO, PSYCHOLOGY

Memory can be separated into two categories: rich and detailed memories (recollection) and feelings of familiarity. Past studies have shown that familiarity-based memories for meaningful items (such as words) are forgotten at a slower rate than familiarity-based memories for meaningless items (such as nonwords, like "HENSION") (Ozubko & Seli, 2016). The forgetting rates for recollective memories are not affected by the meaning of what is stored. The present study investigated the effect of artificially induced semantic encoding on forgetting. During a study phase, participants were shown sets of three words, which were either semantically related (DOG-CAT-BIRD) or unrelated (CLOWN-GRASS-FRIDGE). Memory for each set of words was tested at two later intervals to assess whether the items were familiar or recollected, and then to see if the items were remembered or forgotten at a final test. Results revealed that words learned in semantically related sets were more likely to be remembered at the final test than words learned in an unrelated set, but only if they were familiar. The forgetting rates of recollected words was unaffected by whether they were learned in related or unrelated sets. *Selected for presentation at State University of New York Undergraduate Research Conference, Fredonia, NY.*

237 • Sweating the Small Stuff: Exploring the Link Between Electrodermal Activity and Daily Emotional Experience

NATALIE DUBOIS
FACULTY SPONSOR: CHRISTINE MERRILEES, PSYCHOLOGY

As animals our lives are full of stressors; including but not limited to, traffic jams, promotions, first dates, scary movies and predators with big teeth. Throughout human evolution, our bodies have adapted to deal with these stressors, both good and bad, through physiological mechanisms, such as release of glucocorticoids and the inhibition of certain metabolic systems (Sapolsky, 2004). If

occurring due to a chronic stressor, these mechanisms can cause damage to our bodies over time (Sapolsky, 2004). One of these adaptive responses is electrodermal activity (EDA), or the electric characteristics of the skin due to sweat released during emotional stimuli by the sympathetic nervous system (Benedeck, 2010). Electrodermal activity can be measured by counting skin conductance responses (SCR). This research looked for structural patterns in the physio-emotional manifestation of stress. *Selected for presentation at Nebraska Summer Research Symposium, Lincoln, NE.*

SOCIOLOGY

226 • A Study of LGBTQ+ Students on Campus

BARAK STOCKLER

FACULTY SPONSOR: BECKY GLASS, SOCIOLOGY The study conducted addresses a question of the comfortability of LGBTQ+ students on campus. The study focuses on the social life here at Geneseo and addresses questions regarding where and when students feel uncomfortable and how they react to those situations. The purpose of this study is to identify the places within SUNY Geneseo that the students feel most comfortable, least comfortable, and why. As well, this study serves to identify areas of interest for further investigation if possible.

227 • Geneseo Breakout Program

TYNASIA HAMMOND, MEAGAN CENTENO, AMBER MAYO

FACULTY SPONSOR: BECKY GLASS, SOCIOLOGY WESTON KENNISON, LANGUAGES AND LITERATURES

An overnight college outreach program created by students of the Real World Geneseo class that gives students from underrepresented backgrounds the opportunity to visit Geneseo and learn more about the college process. Our project name is the "Geneseo Breakout Program". The goal of our project is to provide a pathway for minorities to SUNY Geneseo to not only increase the diversity rate in the university but to expose inner city kids to the possible university options outside of CUNY schools.

228 • Diversity in the Freshmen Orientation Program and Beyond

SASHA MILLER

FACULTY SPONSOR: BECKY GLASS, SOCIOLOGY This service learning project seeks to transform Geneseo's campus community to become more culturally sensitive. This is being done by changing the freshmen orientation program to focus on issues that are socio-politically relevant. Diverse students often feel underrepresented on campus and I seek to change that by setting the standard for what our community holds dear.

TESLA HOUSE

229 • Destruction of Nature

Through Photography

ALYSSA HENDERSON, BRIANNA ACKERMAN, BARRY GRANT, BRADY DERICK, RYAN MATHERS, TROY PARISH

FACULTY SPONSOR: MEG REITZ, TESLA HOUSE Nature has been plagued by destruction brought on by the ignorance of our human race. We must

start taking action now as a number of serious consequences have already started to unfold: the loss of resources such as water and clean air will result in an increased rate of extinction and sickness due to these poor conditions. Not only does preserving the environment help subdue these dangers, but it also carries many benefits. Some of these benefits include a greater diversity of life, more opportunities for medical discoveries, and possible prevention of climate change. Our main goal for this project is to provide evidence of human destruction of nature and illustrate what preservation efforts can do for our planet. We are focusing on the Geneseo area in hopes that by remaining close to home it will appeal more to the emotions of the audience, thus having a stronger effect on their comprehension of the issue at hand. Demonstrating a thorough selection of examples from our surrounding area to a public audience will apply this understanding to illustrate why pollution in the Geneseo area is a relevant issue.

230 • The Pedestrian Experience at SUNY Geneseo ☞

ANDREW SCHUYLER, TRAVIS KASSNER, TYLER TIEDE, ALEX BELCHOU

FACULTY SPONSOR: MEG REITZ, TESLA HOUSE

Most students spend 30-45 minutes walking around campus per day -- shouldn't that time be enjoyable? Although walking is unavoidable, there certainly are times when we all wish the trip could be shorter. Wintery conditions from November to April, the suboptimal footpath network, closed staircases, icy walkways, and poorly-parked campus vehicles all build up to create an experience walking around Geneseo that is less than ideal. Studies show that people are less stressed when they commute via walking. If we can make that experience even more enjoyable, we have accomplished our goal. Via analysis of campus maps, collection of anecdotal experiences from students on campus, and careful observation of areas that we have identified as "problematic", we have compiled a list of changes we believe would improve the pedestrian experience on campus. These things are all relatively small, but important when they are all done together -- paving a walkway, designating some walkways as "pedestrian only" to keep walking students safe from campus vehicles, and placing signs near areas where dangerous conditions may occur. The goal of our project is to create a better environment on campus that will benefit anyone who happens to walk around it -- not just students.

231 • Schrödinger's Facts ☞

ARTHUR FOX, ALEC BADER, KATHERINE MEERDINK

FACULTY SPONSOR: MEG REITZ, TESLA HOUSE

LAUREN KUSKI, TESLA HOUSE

The purpose of this study is to build a working definition of "Post-Truth," and to investigate its effect(s) on modern society and science learning at SUNY Geneseo. The working definition, resulting from research and discussion, is that "Post-Truth" is a phenomenon where objective facts are less important in developing opinions than one's emotion or personal belief. Preliminary research has shown that "Post-Truth" is a term that has existed for a while, but has only become hyper-popularized within the last few years. Further research has shown that this rise is due to events in modern world politics, which also gives evidence that "Post-Truth" is a concept that primarily resides in the political arena. Despite this fact, "Post-Truth" has effects in many areas of First-World life, the focus in this case on science education. Although the "Post-Truth" phenomenon can be perceived as a beneficial due to the equality of ideas, in regards to science, this phenomenon has encouraged the use of incorrect data and information in order to support incorrect or flawed hypotheses. This aspect of "Post-Truth" has also led to a weakness in the science literacy of the western world.

232 • Theatrics and Television: Early Educational Programming and Impact on Childhood Education

HANNAH MCCLOW, TREVOR GRECO, ERIC LEARY, TIFFANY PLATTE, MIRANDA FELONG

FACULTY SPONSORS: MEG REITZ, LAUREN KUSKI, TESLA HOUSE

How do people learn? This seemingly innocent question is the fundamental thought to which education systems are built upon; yet there is no definitive answer. The purpose of this project is to investigate this question by analyzing how children learn through one specific medium: theatrics in educational television. The objective is to demonstrate the theatrical tactics that are used in educational television to both entertain and teach young viewers. Previously performed statistical analysis determined the effects of various childhood education television shows on adolescents. Shows such as *Sesame Street* and *Mr. Rogers' Neighborhood*, have demonstrated an increase in positive behavior in children while shows such as *The Magic School Bus* and *Bill Nye the Science Guy* promoted an interest in science. Theatrical elements such as humor, positive reinforcement, music, puppetry, and spectacle contribute to the improvement in children's behaviors as well as an understanding and appreciation of academic fields. By studying and identifying these beneficial theater tactics in children's television shows, we intend to create a

small video performance to highlight and utilize these tactics to illustrate their functionality.

233 • The Formula of Popular Music: Analyzing Musical Trends

PHILLIP KOENIG, BRENNAN MURRAY

FACULTY SPONSORS: MEG REITZ, LAUREN KUSKI, TESLA HOUSE

Music has been a basic aspect of human life for thousands of years and acts as a way of expression. According to *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*, by Mithen, music is an evolutionary precursor to language and is what separates humans and other primates communication. By looking at music as a way of communication and expression, it may be concerning to see the lack of diversity in popular music today. A study conducted by a group of Spanish researchers deemed the "Million Song Data Set" took a look at how homogeneous modern pop music has become over fifty years. The study took a look at the pitch frequency, tempo, and timbre in nearly 500,000 songs. It was concluded that modern western pop music has become much less complex, louder, and less creative. To further their research, we took a look at the *Billboard* Top 40 and discovered that pop music does follow the trends set out in the data set for the most part. But what does this mean for human communication? Its possible that we as humans may be missing out on vital stimulation by listening to such homogeneous music.

234 • Geneseo Facilities' Resource Usage and Moving Towards a Greener Campus ☞

SCOTT BOOTH, CHRISTINA MORROW, CHRISTOPHER HINES, LUCAS FINN

FACULTY SPONSOR: MEG REITZ, LAUREN KUSKI, TESLA HOUSE

The use of natural gas and the production of electricity have threatening effects on our environment, including localized pollution and the resulting contribution to global climate change. As greenhouse gases continue to collect in the atmosphere, the percentage of solar radiation reflected back into space decreases. This has led to a significant rise in global temperature over the last century. This practice is not sustainable and has led to an increase in sea level, health risks, and the extinction of many species. Through gathering and interpreting data on the various forms of resource usage on the SUNY Geneseo campus, including electricity and natural gas, we hope to demonstrate where Geneseo has made progress and where the institution still needs to focus energy in order to make buildings are more efficient and become more environmentally friendly.

POSTER SESSION 2 • 5:15 – 6:45 PM

COLLEGE UNION BALLROOM DIAGRAM ON BACK COVER

BIOLOGY

302 • Are Coral Diseases Caused by Opportunistic or Primary Pathogens in Reef Systems Located in San Salvador, Bahamas?

ALLISON JONES, MEGAN KLOOSTERMAN, KAELA TOBACK

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY
Over the past forty years, the health of coral reefs has been in decline, as a variety of factors such as overfishing and eutrophication have led to the degradation of these systems. Coral diseases are another significant factor leading to the destruction of these reefs. This study will test the hypothesis that the diseases infecting sea fans and stony corals in San Salvador, Bahamas are opportunistic infections that are taking advantage of the degraded status of coral reefs. A survey of six reefs will be conducted, three of these were previously deemed healthy, while the other three are considered unhealthy. We will record the incidence and virulence of diseases in healthy and unhealthy corals. We anticipate that these findings will support our hypothesis that opportunistic pathogens are responsible for the high rates of disease in Caribbean coral reefs.

303 • Analysis of Zooplankton Diversity in Lake Lacoma in Monroe County, NY

BAILEY SAWYER, JENNIFER RUBIN, KYLE SANDUSKI

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY
Lake Lacoma is a small spring-fed lake located in Pittsford, New York. Over the last few years, Lacoma has experienced persistent blooms of phytoplankton including, potentially toxic blue green algae. Zooplankton act as the dominant herbivore in lake ecosystems with the ability to filter feed and ingest blue green algae and other photosynthetic organisms. We are studying the zooplankton of Lake Lacoma to evaluate the potential of the community to control the growth of phytoplankton. Samples were collected and analyzed to determine the abundance, species composition, and size distribution of the zooplankton during fall, 2016, 9 years after collections were made by Geneseo students. Our initial analysis showed that two large species of zooplankton had disappeared from the lake since the last collections in 2007. Overall, the zooplankton of Lake Lacoma is impoverished and it has a limited potential to feed on algae. The zooplankton community may have been harmed by the presence of toxic blue green algae or by occasional stocking of predatory baitfish carried out by local residents. We are continuing this study into 2017 to determine how efforts to mitigate the algal blooms with artificial lake wide mixing might be affecting the zooplankton community.

304 • Analysis of Cyanobacterial Blooms at Lake Lacoma in Pittsford, New York

KATIE THARRETT, KATHERINE ROCHE, GINA SCANDAGLIA, SCOTT GUYTON, BAILEY SAWYER
FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Aquatic photosynthetic bacteria (cyanobacteria or blue green algae) and eukaryotic algae are known collectively as phytoplankton. Phytoplankton are the primary consumers of phosphorus, nitrogen and other nutrients dissolved in lakes and oceans. Excess nutrients can produce dense blooms of phytoplankton that may include toxic species of cyanobacteria that pose major environmental problems in lakes, including the study site, Lake Lacoma in Pittsford, New York. Cyanobacteria such as *Microcystis aeruginosa* and species of *Anabaena* produce toxins that may harm other species and restrict recreational activities due to detrimental effects on human health. In this study, cyanobacteria were sampled from June to October 2016 to characterize the development of blooms. Specifically, we sought to determine the timeline of cyanobacterial blooms, the dominant species, their abundance and biomass, and the level of toxins produced. Characteristics indicating two major blooms were observed throughout the study period, shown by elevated chlorophyll levels and cell counts. However, neither bloom was found to have toxin levels exceeding DEC regulations. The results of this study were used to advise the residents of Lake Lacoma to determine best management strategies for mitigating future cyanobacterial blooms.

305 • Lake Lacoma Preliminary Aeration Assessment

SCOTT GUYTON

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY
Lake Lacoma is a small, eutrophic, kettle lake that has recently been plagued by summer long blooms of potentially toxic blue green algae. This past autumn, local residents invested in an aeration system intending to control the blooms. . The aerators artificially mix the water column using bubbles and the resulting oxygenation is expected to help trap nutrients in the lake bottom sediments. Decreases in nutrients will help to hinder the proliferation of toxic algae blooming in the lake. Surveys of water quality were taken and compared to data collected during summer and fall of 2016. This management technique has not been widely used or studied in our region and could potentially be an alternative solution to internal nutrient loading and toxic algal blooms in lakes.

306 • Competition for Space Between Corals and Palatable and Non-Palatable Sponges in Overfished Bahamian Coral Reefs

KAYLEIGH SCHNEEBERGER, EMMA SCHNEIDER, FRANK LOPINTO

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Competition for space between sponge and corals is widespread in Caribbean coral reefs and involves many species of sponges, including fast-growing palatable and slow-growing non-palatable sponges. Studies indicate that overfishing of spongivorous species such as parrotfishes and angelfishes, may have released fast-growing palatable sponges from predation, thereby intensifying sponge-coral interactions. The goal of this study is to test the hypothesis that palatable sponges are competing more intensely than non-palatable sponges in overfished reefs of San Salvador Island, The Bahamas. Transect surveys will be conducted to determine the extent of sponge coral competition and the species involved. Chi Square analysis will be used to compare the expected frequency of interactions based on species abundance to the observed frequencies. The results of this study will show whether overfishing will harm coral reefs indirectly by intensifying space competition and increasing coral loss due to overgrowth by sponges.

307 • Are Parrotfish Communities More Diverse in Healthy or Impacted Coral Reefs?

LAUREN STERNBERG, JOHN MULLEN, NATHAN LOPARCO

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY
The family Scaridae, commonly referred to as parrotfish, plays a critical role as herbivores in Caribbean coral reef ecosystem by limiting algal dominance over corals. Parrotfish scrape reef surfaces for food and their feeding activity may cause significant damage to coral. On balance their feeding activity is generally believed to be beneficial to reefs but it is unclear how reef community health is related to parrotfish population health. The objective of this research is to determine the relationship between population size and species diversity of parrotfish and reef health as indicated by the coral cover in reefs off the island of San Salvador, Bahamas. The working hypothesis is that large parrotfish population size and higher species diversity will occur in coral reefs with high algal cover and low coral cover because of algae will be an abundant food source for herbivorous parrotfish and large populations of grazing parrotfish could cause significant damage to living coral.

308 • Progress in Identifying Antarctic Sea Star Species

OLIVIA HOLODNIK, KRISTY DEGENER

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

The goal of this study is to genetically identify what may be a new species of Antarctic sea star. Specimens of large adults of *Glabraster antarctica* and a closely related dwarf form that may be a new species were collected in McMurdo Sound Antarctica. Larval development and cytochrome oxidase gene frequencies are being studied to determine whether the dwarf form is a new species in the genus. To date we have amplified gene fragments of cytochrome oxidase and

samples will be sequenced to allow species genetic comparisons.

309 • Population Genetic Analyses of Stalk-eyed Fly Collection

ALLISON JONES, RYAN LANE

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

In 1989, Stalk-eyed flies were collected near Kuala Lumpur in Southeast Asia either as individuals or from aggregations. Two different species were collected, so we are investigating how species distribution and the presence of meiotic drive either changes or remains constant over time. To do this, we are extracting DNA from the 1989 samples and using PCR and gel electrophoresis to determine which species each sample belongs to and whether each individual carries meiotic drive genes. We anticipate that we will be able to determine whether species identity or meiotic drive status correlates with membership in an aggregation. Finally, we will compare this data to present-day collections. Currently, we have successfully used PCR to amplify genes of interest, assessed genotypes in samples, and determined that the squish method does not work on the old samples.

310 • The Effects of Sexual Selection and Sex Ratio on the Ratio of X vs. Autosomal Variation in *Teleopsis dalmanni*

JOSEPH TADROS, RACHEL GUINTEHER

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

Because standard populations have frequencies of 4 autosomes for every 3 X chromosomes, X chromosomes will have less genetic variation than do the autosomes. However, two separate mechanisms in sexual reproduction make the amount of genetic variation on the X chromosome grow relative to that in the autosomes: heightened ratio of females to males in a population, and female sexual selection for certain traits in males. The combined effects of sexual selection and biased sex ratio on total population genetic variation are still unknown in *T. dalmanni*, though. To examine the relationship between these two variables and on fly populations, theoretical populations were produced using SFS_Code. The amount of X and autosomal variation of the theoretical populations under varied female and sexual selection parameters was assessed at each generation. These theoretical values were then compared to standing genetic variation of *Teleopsis dalmanni*, a species that exhibits sexual selection and sex-ratio distortion. Thus far we have successfully produced simulated populations for autosomal and X-linked genes and assessed their levels of genetic variation.

311 • Mutagenesis of CG 34434 in *Drosophila melanogaster*

JULIA NICOSIA, PRAMUK WAKWELLA

FACULTY SPONSOR: JOSEPHINE REINHARDT, BIOLOGY

We used CRISPR-cas9, a gene modification tool, to create de novo (null) mutations in the *Drosophila melanogaster*'s CG 34434 gene. CRISPR-cas9 works by inducing a frameshift mutation in a gene, but it

can also be used to delete a large section of the gene. With a frame-shift, the gene will be coded into an RNA strand, and the protein translated will be nonfunctional; while the deletion will affect the function of the RNA and protein. CRISPR-cas9 requires a specific signal sequence called a guide RNA in order to determine where in the genome the mutation is produced, so we used sequence building programs to design region-specific strands. We will inject gRNA constructs we designed into a stock of flies has been genetically modified to always express cas9 in its cells, so the stock is currently being grown in the lab under optimal conditions. We are currently learning how to do methods needed for CRISPR-cas9 such as lining up and injecting embryos, PCR, and dechlorination.

312 • Microbial Identification Using Sugar Utilization Mutants During Bacterial Stationary Phase Competition in *Escherichia coli*

RACHEL KNAPP, SHELBY STENSLAND

FACULTY SPONSOR: KEVIN MILITELLO, BIOLOGY

The Militello laboratory is studying the role of the dcm gene in DNA methylation in the model bacterium *Escherichia coli*. The addition of a methyl group to DNA, catalyzed by the DNA cytosine methyltransferase (Dcm) protein, results in changes in gene expression that may influence stationary phase fitness. A system was developed utilizing MacConkey and LB-Tetrazolium plates to allow for a wild-type strain and a sugar utilization mutant with a kanamycin resistance gene to be grown on the same plate but distinguished based on colony color. Competition experiments between the wild-type strain and two sugar utilization mutants were conducted to determine whether either mutant could replace the wild-type strain in a competition experiment with the dcm knockout strain. This would be advantageous as both strains would be equivalent with respect to the kanamycin resistance gene. Results indicate the wild-type strain has an advantage over the galK knockout, but the manA knockout may be neutral in this system, indicating that it may be able to replace the wild-type strain in the next set of competition experiments.

313 • Assessing Winter Feeding Vocalizations of Black-Capped Chickadees and American Goldfinches and their Response to Anthropogenic Noise

LEEANN BRUETSCH, KAYLA SCHUM

FACULTY SPONSOR: KRISTINA HANNAM, BIOLOGY

Birds vocalize for many reasons, including communication of potential threats, behavioral cues, and alerting others to new food sources. We focused on winter vocalizations at feeding sites because few researchers focus on bird behavior outside of breeding season. Effects of anthropogenic noise on winter behaviors and vocalizations have not been studied intensively, but we predict changes in song and call characteristics. This investigation of winter vocalizations and behavior focused on Black-Capped Chickadees and American Goldfinches. Five study sites were used, two at the Roemer

Arboretum, one at the GVC Island Preserve, and two at different residential areas. Each research site was close to a road and had a bird feeder set up for a week before recordings were performed. Audio recordings of feeding site vocalizations took place at hour-long intervals for each site, once during the morning (between 6 am - 10 am) and once during the afternoon (between 12 pm - 5 pm). Observers noted species identity and behavior during recordings. Each recording was analyzed using Raven Pro software to measure maximum frequency and minimum frequency of each vocalization. We will report on differences between species, between sites, and the relationship of vocalization characteristics to anthropogenic noise.

314 • Longitudinal Assessment of Occupational and Environmental Exposures to Chlorpyrifos in Adolescent Egyptian Agriculture Workers

ASHLEY PEPPRIELL

FACULTY SPONSOR: ROBERT O'DONNELL, BIOLOGY

Chlorpyrifos (CPF) is an organophosphorus (OP) insecticide that is applied seasonally by the Egyptian Ministry of Agriculture. The specific urinary metabolite of CPF; trichloro-2-pyridinol (TCPy), along with butyrylcholinesterase (BuChE) and acetylcholinesterase (AChE) were used as biomarkers for exposure and effect, respectively, in Egyptian adolescent pesticide applicators (n = 57, 12-21 years of age) and age-matched non-applicators (n = 38). Spot urine and blood samples were collected from each individual from April 2010 through July 2011; prior to, during, and after scheduled CPF application. Urinary TCPy was analyzed via GC/MS and normalized to creatinine. Blood esterase was quantified via the Ellman method. Applicators demonstrated significantly higher levels of TCPy and greater BuChE depression compared to non-applicators over the OP spray period. Throughout the study, large inter-individual differences in TCPy were observed, with individual peak TCPy levels ranging from 8.4 - 5,715 ug/gram creatinine for applicators and 8.6 - 138ug/gram creatinine for non-applicators. Elevated TCPy levels persisted 4-7 weeks, indicating sustained exposure to CPF or slow metabolism of CPF. Biomarker data in non-applicators mirrors that of applicators indicating unintended environmental exposure. It is still necessary to identify work practices, or other parameters that may contribute to the high variability observed. *Selected for presentation at Society of Toxicology, 2017, Baltimore, MD.*

315 • Osteological Indicators of Prey Size Preference in the Forelimbs of Felids and Nonavian Theropod Dinosaurs

SAMANTHA GAGE

FACULTY SPONSOR: SARA BURCH, BIOLOGY

As obligate bipeds, nonavian theropod dinosaurs freed their forelimbs for non-locomotory uses, including a likely role in prey capture. Among modern animals, one of the few groups that use their forelimbs in prey capture are cats. A previous

study showed that aspects of the morphology of forelimb elements can serve as indicators for prey size preference in cats, despite the forelimb's prominent role as a locomotory structure. To investigate this relationship in theropods and its similarity to that in cats, we performed phylogenetic principle components analyses on a set of forelimb indices that were previously found to be functionally relevant to forelimb use and prey size preferences. The patterns found in cats and theropods show broad congruence. These results suggest that some theropods can be classed as large, mixed or small prey specialists based on the usage of their forelimbs in prey capture. The similarity in the patterns between theropods and cats suggests that theropods may have engaged in similar forelimb-based behaviors in predation, such as grappling with large prey or swiping at small agile prey. **Selected for presentation at Society of Vertebrate Paleontology, Calgary, Alberta, Canada.**

316 • Analysis of Student Feedback from Introduction to Biology Courses

DAVID MCGLASHON, RENEE WEINSTEIN

FACULTY SPONSOR: SUANN YANG, BIOLOGY

Why are student attitudes important to study? We conducted this study in order to determine how students felt towards an application-based teaching style in an introductory biology course at Presbyterian College. Student feedback from the years 2013 through 2016 was examined and analyzed. In 2013, an application-based instructional curriculum was introduced to the introductory biology courses. We surveyed the students' original reactions to this new curriculum, as well as their reactions as the teachers grew more experienced using this curriculum. The first method we used was Wordle, which created word clouds that emphasized the most common words in the student feedback. We next used R to improve the accuracy of the word clouds, so that we could omit words from survey questions from being incorporated in the clouds. Using R, we next made bigrams and trigrams that analyzed the most common two and three word phrases in student responses. Our preliminary results show that students feel less positive towards biology after introduction of this new curriculum. We will now try to discover why these negative feelings are manifesting. Student attitudes are thus important to study in order for professors to make decisions on how best to teach their classes.

317 • How Land Use Affects Tree Species Diversity

HANNAH CHASE

FACULTY SPONSOR: SUANN YANG, BIOLOGY

Within our environment, the many interacting ecological factors that determine diversity are well studied; however, in human-dominated landscapes, the influential factors are less so. We hypothesized that tree species diversity is decreased by people's landscaping choices since they will often choose low maintenance, ornamental species. Quantifying tree biodiversity in human-dominated landscapes can reveal the ability of these landscapes to support overall biodiversity. We predict that areas that have a higher percent of impermeable surfaces, on which

a tree cannot grow, are more likely to have their tree diversity shaped by human. Our preliminary results show that the SUNY Geneseo campus is dominated by a few ornamental tree species, including *Crataegus* (Hawthorn trees), and *Malus* (Crabapples). Despite not being native to the area, most Hawthorn and Crabapples are palatable to birds and insects, helping to support biodiversity in the area that they are planted. In addition, about 50% of the SUNY Geneseo campus has 20-100% of surfaces that are impermeable; suggesting that a higher percentage of impermeable surface is associated with tree species homogeneity. However, even if few species are chosen, it can still be done responsibly when their aesthetic and wildlife values are considered together. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

318 • Spatial Distribution of Beech Blight Aphids at Multiple Levels

TULPEN HANSEN-SCHWOEBEL

FACULTY SPONSOR: SUANN YANG, BIOLOGY

Gryllocprochilus imbricator (Beech Blight Aphid) is an Aphid species that lives on the East Coast and forms colonies almost exclusively on *Fagus grandifolia* (American Beech Tree) branches. Beech Blight Aphid behaviors related to colony structure and choice of host are relatively unknown. Studying colony distribution patterns and structure is crucial to understanding the Aphids' effect on their ecosystem. To accomplish this we compared the spatial distribution of Aphids at the colony level to their distribution across a patch of Beech Trees. We dissected a colony and counted numbers of non-reproducing Aphids and winged adults at 5 cm intervals, and found that the distribution along a branch was not normal (Shapiro-Wilk, $p=0.04$). Instead we found that the Aphids colonies are less concentrated the further they are from the trunk of the host tree (skewness= 0.14). To analyze distribution at the patch level we identified Beech trees with and without colonies and recorded their characteristics and placement in a patch. At patch level, distribution of Aphid colonies appears to be nonrandom. Our results will have implications for the Aphids interspecific and intraspecific interactions, including how they affect their host trees and how this could potentially negatively affect their ecosystem. **Selected for presentation at Northeast Natural History Conference, Cromwell, CT.**

319 • The Influence of Human Behavior on Parasitic Disease Transmission in a Disadvantaged Community in Ghana

MAKAYLA ROSS

FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

The threat of parasitic diseases remains prevalent in countries that are a part of the developing world. The village of Tomefa, Ghana is a marginalized community on the outskirts of the capital of Ghana that is affected by a multitude of these diseases. Certain behavioral patterns associated with culture have become major contributors to the spread of disease. A combination of anthropological and biological methods is necessary in this situation, in order to better understand the implications of

these global health issues. In this study, a Knowledge, Attitudes and Practices questionnaire from Tomefa, Ghana was analyzed to examine the epidemiology of cultural factors and their relation to disease. Activities known to be associated with diarrhoea, malaria, schistosomiasis, sleeping sickness and intestinal worms were compared with knowledge levels and prevalence rates. The results of this study hold implications regarding how human behavior can be a major contributor to disease emergence and spread. An understanding of the cultural influences on disease provides an intriguing perspective from which effective treatment and prevention programs can be created.

320 • The Effect of Schistosomiasis Resistance on Reproductive Success in *Biomphalaria glabrata*

NICHOLAS WHITTEL, ANNE RITTSCHER

FACULTY SPONSOR: SUSAN BANDONI MUENCH, BIOLOGY

The WHO estimated that in 2014 at least 258 million people required treatment for schistosomiasis, but only 24% of infected people were successfully treated. The disparity between the estimated number of cases and the number of treated individuals highlights the need for a cost effective, long term solution. Schistosomiasis is a water contact disease that uses an intermediate snail host, as well as a human definitive host in order to reproduce. Host control measures are often proposed, but initiatives are often limited by funds, or their potential impact on the existing aquatic ecology. Innovative initiatives propose the introduction of snails, that express a genetic resistance to Schistosome infection, into the existing snail populations. The goal of the project is to replace the susceptible population gradually, as to not disturb existing ecological equilibria. In practice, it has been observed that the resistant population struggles to replace the susceptible population due to increased gender conflict, a phenomenon observed in many hermaphroditic snail species. Gender conflict decreases reproductive success of *Biomphalaria glabrata* that express the resistant phenotype.

321 • Towards Investigation of Small-eye Mutant Using In Situ Hybridization

ALLIE DANANBERG, HANNAH LOO, REBECCA MIRVELLE, EVAN MULTALA

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

A genetic screen to identify alleles affecting eye development uncovered the good effort (gef) mutant. The gef mutant is characterized by smaller eyes relative to wild-type fish. Although gef mutants exhibit smaller retinas, the lens appears unaffected, suggesting the gef phenotype is a result of retinal-specific degeneration, as small-eye mutants normally display defects in both the retina and lens. Meiotic mapping has linked gef near *chaf1b*, which is part of the CAF-1 complex. However, other genes may be involved in inducing the gef phenotype. Here, we present the results of global analysis of RNA-Seq data from gef and wild-type zebrafish. Statistical analysis identified a large subset of genes which were up- and down-regulated in gef mutants as compared to wild-

types. After selecting 626 significantly down-regulated genes, gene IDs were entered into DAVID, a bioinformatics tool which allows grouping of genes by functionality and common pathways. Based on DAVID analysis, we identified 5 pathways of interest, the most intriguing being the Notch signaling pathway. Previous studies in *Drosophila melanogaster* have indicated CAF-1 signals through Notch in order to cause differential target gene expression. We then selected 2 Notch pathway genes, *her15.1* and *notch1a*, for further analysis via *in situ* hybridization.

322 • CRISPR Club: The Good, The Bad and The Statistically Insignificant

HANNAH LOO, ADAM WEGMAN, ALLIE DANANBERG, MEHDI ELMOUCHTARI, NAOMI WILSON, STEPHANIE SOJDA, ERIN MOZINGO, AMBER LIN, BETHANNA JONES

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

A Journal Club is a meeting of individuals for the purposes of reviewing and critiquing scientific literature, as well as eating food. Previous studies have suggested that the implementation of undergraduate Journal Clubs improves student performance, particularly students' abilities to effectively communicate science. They thus present a means by which to increase scientific literacy in universities which may have limited access to educational resources. Here, we present our reflections on Geneseo's first undergraduate Journal Club, now called as "CRISPR (Critical Reading in Scientific Peer Review) Club" - the name change was intended to provide clarity to those who thought we were a club about journalism. Started at the suggestion of Dr. Travis Bailey, we found that although club attendance was constant, it was difficult to recruit underclassmen and the club largely consisted of a self-selecting group of motivated individuals involved and invested in scientific research (many of us being friends with one another). However, we were consistent in bringing food every week, and found that switching to topical presentations made our meetings more enjoyable for members. In the future, we hope that efforts to increase undergraduate scientific literacy will expand, and garner the support of students and faculty.

323 • Multiplex Mutagenesis in *Danio rerio* Using CRISPR/Cas9 and Multiple gRNAs

JONATHAN KORDIYAK, MAXWELL COSTICH, MEAGAN SULLIVAN, QUINN JOHANSON

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

The good effort (*gef*) zebrafish mutants develop small eyes because their retinal cells die. A 3-base-pair deletion was found on the 5' end of intron 3 of the chromosome assembly factor-1b gene (*chaf1b*) in *gef* mutant embryos. *Chaf1b* protein is responsible for loading histones onto DNA; failure to do so leaves the genomic DNA prone to cleavage. A recent study of *chaf1b* mutant zebrafish suggested that the Tumor suppressor protein 53 (*Tp53*) might be responsible for promoting the cell death seen in *Chaf1b* mutants. To investigate this claim, we developed a one-generation multiplex gene-targeting construct using the CRISPR/Cas9 system. The Cas9

endonuclease is capable of creating a double-stranded break in DNA. Cas9 requires the cooperation of a specific guide-RNA (gRNA) to target it to a specific cut site. We can determine where Cas9 activity is strong by observing the disruption of pigmentation in fish where the melanin promoting gene, tyrosinase, is targeted. We created a plasmid that expresses three specific gRNAs targeting tyrosinase, *Tp53*, and *Chaf1b* to ensure equal expression of their gRNAs in all cells. We hypothesize that the cell death will be prevented in the *Chaf1b* zebrafish mutant if *Tp53* was also silenced.

324 • Evaluating Feed for Zebrafish to Maximize Cultivation Efficiency

TYLER MACK

FACULTY SPONSOR: TRAVIS BAILEY, BIOLOGY

Zebrafish (*Danio rerio*) have become increasingly valuable model organisms in numerous biological disciplines since their introduction in the mid-twentieth century. However, culturing them can be fairly labor intensive as standard feeding protocols require upwards of twenty man-hours per week. At Geneseo, students spend many volunteer hours feeding the zebrafish colony before they can do research. Skretting USA claims that their feed product can reduce these labor requirements while being nutritionally advantageous to standard feeding regimens. Further, they claim their feed will increase viability and fecundity of fish raised on GEMMA Micro feed. To validate these claims, treatment fish were given GEMMA Micro feed and control fish were given standard feed. Mortality rates were compared for each experimental group under identical living conditions.

438 • Hymenopteran Trap Color Preference in a Forest Clearing

RYAN CARPENTER

FACULTY SPONSOR: ISIDRO BOSCH, BIOLOGY

Water-filled pan traps are commonly used to sample insects, and yellow is considered the best color for collecting a maximum number of species. However, preference has been assessed for relatively few taxa, mostly insects in agroecosystems, using a small number of colors. The objective of this research is to determine if species richness, composition, and abundance differ with pan trap color for select groups of Hymenoptera. Bees, Proctotrupomorpha, Cynipoidea, Ichneumonoidea, and several feeding guilds were analyzed in this study. To address the research objective, insects were sampled using colored and clear water-filled Solo™ bowls placed in a power line easement forest clearing. Bowls were arranged in circular plots, and each plot contained seven different colored bowls. The collection resulted in 25,004 specimens, that have been sorted into 402 morphospecies. Species richness was analyzed for five groups, and abundance was analyzed to reveal that bee abundance was significantly higher in all colors compared with clear and red, but otherwise, significant differences were not observed between any of the other colors. Proctotrupomorpha was significantly higher in yellow than compared with all other colors. Evaluating quantified color preferences, will allow researchers to make scientifically sound decisions about what colors to select for sampling.

BLACK STUDIES

325 • Voter Suppression Study

MARY ELIZABETH LUNDQUIST

FACULTY SPONSOR: EMILYE CROSBY, BLACK STUDIES

Looking at the context of both the 2017 election and Civil Rights Movement.

WITHDRAWN

CHEMISTRY

326 • Fluorescence of Single CdSe Quantum Dots in Controlled Atmospheres

BRANDON MEHLENBACHER

FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

The photo-physical behavior of single CdSe quantum dots were studied using single molecule fluorescence spectroscopy in a controlled atmosphere. CdSe quantum dots were synthesized and single molecule samples were prepared using conventional techniques. Following the synthesis, the blinking trajectories (fluorescence intensity vs. time) were then studied in atmospheric conditions. The entire system was then sealed in a glovebox where no atmospheric oxygen came into contact with the quantum dots, and the same approach was taken. Surprisingly, quantum dots' kinetic patterns are sensitive to atmospheric conditions. In air, the power law exponent for the ON event probability distribution is -2.65 ± 0.10 ; in N₂, the power law exponent is -1.61 ± 0.05 . Control experiments that followed showed that this isn't due to sampling and that the quantum dots blinking kinetics are highly sensitive to oxygen exposure. Generally, people measure blinking kinetics of quantum dots using shell quantum dots, whereas these results show that an "N₂-only" approach is a viable means to investigate the quantum dots kinetics in simple systems. These results also indicate an important role in surface composition of CdSe quantum dots and their blinking behavior. *Selected for presentation at American Chemical Society 253rd National Meeting, San Francisco, CA.*

327 • Separation and Purification of Single-Walled Carbon Nanotubes through Aqueous Two-Phase Extraction

MARGARET DAVIS

FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

Single-walled carbon nanotubes (SWNTs) with different diameters demonstrate different material properties. An important step in the research and use of SWNTs is the development of an efficient and effective purification method to separate SWNTs based on their different diameters. This research works to further the understanding of how varying the amount of different surfactants promotes different separations of SWNTs in an aqueous two-phase separation (ATP). A sample of SWNTs was mixed with a surfactant solution that produced two immiscible phases, into which the SWNTs spontaneously separated. The relative concentration of SWNTs present in each phase of the separation was determined using optical

spectroscopy. We find that the particular SWNT species that is concentrated in each phase can be tuned by varying the amount of sodium cholate and sodium chloride in the stock solution. The results demonstrate the viability of ATP for SWNT purification and point to further possible optimizations in the future.

328 • Sizing Curve and Extinction Coefficient Determination of CdSe/CdS Core/Shell

Semiconductor Nanocrystals

REMY RIZZO, CHRISTOPHER BRIGHTON

FACULTY SPONSOR: JEFFREY PETERSON, CHEMISTRY

One of the most intriguing nanoscience topics is quantum dots (QDs), spherical nanoparticles with diameters approximately 1/10,000th the width of a human hair. QDs exhibit unique optical properties that render them attractive for a variety of technological applications. For example, by controlling the QD size, one can tune the wavelength of light they absorb and emit over wide regions of the electromagnetic spectrum. One current challenge is developing simple methods to reliably determine the concentration of QD solutions. Here, we present a simple method to meet this challenge in a novel type of nanomaterial using absorbance measurements. CdSe/CdS core/shell QDs with absorption peaks between 500-600 nm and 1-3 monolayers of shell material were synthesized. QD diameters were measured with transmission electron microscopy and correlated with their absorption peak to produce a "sizing curve." QD concentrations were determined with inductively-coupled plasma optical emission spectroscopy and were combined with absorption spectra to determine extinction coefficients at 300 nm. Results are compared with simple theoretical models and with results from other QD materials. We expect the results will be of significant practical utility for researchers working with these materials.

329 • Beta-2-Microglobulin Temperature Dependent Reversibility

APAUOLA ISLAM, MANAMI ENDO, MONICA PUJOLS, VALERIE MEDINA, RAVNEET SINGH

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The Alzheimer's association of America estimates that as many as 5.1 million people suffer from Alzheimer's disease nationally. Millions more suffer abroad. One of the key proteins implicated in Alzheimer's disease is the amyloid beta protein. It is the key component in amyloid plaques found in Alzheimer's patient brains and is theorized to be one of the main causes of this neurodegenerative disease. Beta-2-Microglobulin (β 2M) is a precursor to this amyloid beta protein, as it aggregates to form amyloid. In this experiment, we aim to determine the temperature dependence on the folding of the β 2M protein. Using nanoscale gold surface particles and UV-Vis Spectroscopy, we can determine if the protein is folding on the surface or if at certain temperatures it shows reversibility in folding. The experiment deals with two variables, the gold size, and temperature, while the quantity of β 2M remains constant. Results so far suggest

there may be quasi-reversibility of β 2M on the 50nm gold surface at 65 °C. However, further experimentation is necessary to determine if this temperature and gold size is significant in β 2M reversibility.

330 • Investigation of Reversible Self-Assembly of Amyloidogenic Peptides at Nano-Scale Interface

JESSICA BATTAGLIA, MANAMI ENDO

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-2-Microglobulin (β 2M) to be approximately 0.9 nm in width over a 30 nm gold colloid surface. This layer is used to aggregate residual β 2M coated gold colloid particles under only acidic conditions, in which unfolded β 2M 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. *Selected for presentation at 253rd American Chemical Society National Meeting, San Francisco, CA.*

331 • Investigation of Hydration Process of Semi-frozen

Amyloidogenic Peptide

ISHAN DESHMUKH, PETER SHEVLIN

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

We investigated the effects that protein coverage has on the diffusional motion of gold nanoparticles in a frozen solution. This effects were confirmed through the measurement of fluorescence spectrum and picosecond fluorescence decay time of the frozen peptide-gold solution. The size of the gold nanoparticles being studied ranged between 20 to 60 nm. The solution was studied at a constant temperature of -2 °C and at varying pH. The purpose of this research was to understand the intermolecular effect that peptide folding and conformation has on a nanoparticle surface under a constant freezing temperature. This information can be used as a standard work and it will help to better understand how a specific protein can fold into a more dangerous structure that can lead to neurodegenerative diseases, such as Alzheimer's. In order to understand the effect of frozen peptide conformation on the gold nanoparticle surface, we studied the peptide, Fluorescein-Beta Amyloid (1-40).

332 • Investigation of Gold Nano Particle Shielding Due to Protein Surface Area Coverage

PETER SHEVLIN, KIERAN BROWN, MINA ABDELMAKIL

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

We investigated the structure of protein-gold nanoparticle complexes with regards to surface coverage and three-dimensional packing of the proteins. Coverage of gold nanoparticles by proteins is a new field of study, which can only be determined indirectly through data-analysis and geometric reasoning. Our goal was to create an accurate model of surface coverage to be used to describe protein structure and organo-metallic interaction. In addition, this research sought to understand the effect of pH on protein folding with the gold interaction. This information can be used as a standard work and it will help to better understand how a specific protein can fold into a more toxic structure that can lead to neurodegenerative diseases, such as Alzheimer's disease. Ultimately, we have successfully described a peptide coverage over a nanoscale surface. *Selected for presentation at 253rd American Chemical Society Conference, San Francisco, CA.*

333 • Effect of Peptide Insertion to a Solvent Diffusion Rate in a Silica Sol-Gel Matrix

RANDHIR SAH, KIMI SMYTH, ERIKA ESQUIVEL

FACULTY SPONSOR: KAZUSHIGE YOKOYAMA, CHEMISTRY

The rate of solvent (acid) diffusion in silica based sol-gel matrix was found to be controlled by inserting different size of nano-gold colloid dopants (n-GCD) by a factor of 10. This rate was maximized when the size of 20 nm (n-GCD) was inserted to rearrange the "channels" resulting in an enhancement of flow. However, the rate was slowed/stopped when the size of 60 nm (n-GCD) was inserted to close the "channels". The flow rate was increased as the n-GCD increased from 60 nm-100 nm because of the "cavities" being destroyed by a dopant and building new "channels". Recently, we discovered that the diffusion rate based on pH sensitivity can be changed dramatically by utilizing a peptide pre-coated with gold nano-colloids. As the acid/base solvent intrudes into the sol-gel matrix channels and cavities, they interacted directly with peptide and conduct either protein folding or unfolding. Since, the conformation of peptide is controlled by pH, degree of interaction between peptide and sol-gel cavity, and the gold colloid results in a different degree of diffusion rate. To probe the diffusion rate of a solvent, fluorescence decay and time decay of Fab (Fluorescein Amyloid β 1-40) coated gold colloid is encapsulated into a sol-gel matrix was monitored as a function of diffusion time. *Selected for presentation at American Chemical Society 253rd National Meeting, San Francisco, CA.*

334 • Development of Silver Nanoparticle Decorated Graphene Oxide for Enhanced Detection of Microplastics in Lake Water

MATTHEW SCHWEIZER

FACULTY SPONSOR: RABEKA ALAM, CHEMISTRY

Effectively apply silver nanoparticles and graphene oxide to filters in order to detect the presence of microplastics via surface enhanced Raman spectroscopy (SERS). By applying a graphene oxide film to a surface, silver nanoparticles can be

deposited that allow this complex to become SERS-active. This will allow for the detection of microplastics in a sample of water through Raman spectroscopy. The goal of this project is to synthesize and characterize 2-D graphene oxide nanosheets and silver nanoparticles with controlled morphology and dimensions. Which will allow us to control the optical and electrical properties of these materials, hence allowing us to apply them to sensing applications.

335 • Synthesis and Characterization of Plasmonic Semiconductor Cu₂-xS Nanocrystals

MICHELLE LEIP

FACULTY SPONSOR: RABEKA ALAM, CHEMISTRY
The effect of size and composition on the properties of plasmonic Cu₂-xS particles was studied. Cu₂-xS nanoparticles of varying sizes were synthesized using high temperature organometallic reactions and characterized using UV-vis spectroscopy, transmission electron microscopy (TEM), and X-ray powder diffraction (XRD). We are currently investigating charge transfer capabilities between Cu₂-xS and other nanomaterials to charge the Cu₂-xS with visible light energy. *Selected for presentation at State University of New York Undergraduate Research Conference, Fredonia, NY.*

336 • Spectroscopic and Calorimetric Analysis of DNA G-Quadruplex/Ligand Interactions In Vitro

MEHDI ELMOUCHTARI

FACULTY SPONSOR: RUEL MCKNIGHT, CHEMISTRY
The classic image of DNA is the iconic double helix: two interwoven strands of DNA held together by noncovalent interactions. However, recently, attention has been brought to other structures formed by DNA. The G-quadruplex occurs when four guanine nitrogenous bases interact with each other to form a tetrad. These structures have been shown to limit excess cell division, making them a target for cancer research. We have created G-quadruplex structures in vitro using the human telomeric repeat sequence (5'G₃(T₂AG₃)₃) and have analyzed the interactions of these structures with small molecules via circular dichroism (CD), UV melting, and isothermal titration calorimetry (ITC). The compounds we have worked with have been shown to bind to G-quadruplexes. In particular, we have been focusing on disubstituted naphthalene diimides (NDIs), a class of compounds for which there is limited research with regards to G-quadruplex interactions. *Selected for presentation at American Chemical Society Rochester Undergraduate Symposium, Niagara Falls, NY.*

337 • Effects of the 4977-bp Common Mitochondrial DNA Deletion on Metabolism and Cell Growth of Lymphoblasts

CHRISTOPHER KECK, AMANDA KEPLINGER

FACULTY SPONSOR: WENDY POGOZELSKI, CHEMISTRY
ROBERT O'DONNELL, BIOLOGY

Human mitochondria (mt) contain circular DNA molecules of 16549 base pairs. Mismatching of this DNA can occur during replication, resulting in large deletions. One particular deletion of 4977-bp results in truncated respiratory complexes and reduced cellular lifetimes, but cells bearing this deletion are functional due to the fact that normal and abnormal mtDNAs co-exist in the cell. However, an accumulation of mtDNAs bearing this deletion is known to result in physiological symptoms, yet how metabolism and cell growth are affected is still unknown. Our group compared the growth and metabolism of the normal lymphoblasts with lymphoblasts containing elevated levels of mtDNA bearing this deletion. We show differences in growth using media with varying glucose content, and we show differences in rates of glycolysis and oxidative phosphorylation, as well as shape. *Selected for presentation at Experimental Biology, Chicago, IL.*

437 • Dimerization and Recrystallization of Apocynin and its Analogs

TORY WELSCH, REIDIS LATA

FACULTY SPONSOR: DAVID JOHNSON, CHEMISTRY
Apocynin, a naturally occurring plant extract, has been shown to prevent inflammatory diseases caused by reactive oxygen species through NADPH oxidase inhibition. The reactivity of apocynin has been investigated by studying its dimer form, diapocynin, and its analogs, such as 4-fluoro-2-methoxyphenol. A dimer of 4-fluoro-2-methoxyphenol was successfully prepared using iron (II) sulfate heptahydrate and potassium peroxydisulfate, and the structure was confirmed through nuclear magnetic resonance spectroscopy. The determination of diapocynin's solubility and its crystallization were also attempted to potentially view its crystalline structure via X-ray crystallography. A crystalline structure would elucidate the mechanism by which diapocynin helps prevent atherosclerosis and diabetic retinopathy in the human body.

CIT

338 • Chocolate 3D Printer

ANTHONY TANTILLO

FACULTY SPONSOR: SUE CHICHESTER, KIRK ANNE, CIT

A 3D printer has been modified to print in materials such as chocolate and wax. Current printers on the market cost upwards of \$2,000 US and are restrictive in their operation. The printer was designed to accept many materials, which expands the options for 3D printing applications. Material will flow while printing and harden shortly after extrusion. The frame comes from a Solidoodle Apprentice printer and the electronics are controlled by a Printboard. The design consists mostly of 3D printed parts and can be customized for various printer frames. This is a proof of concept suitable for insight into non-plastic based extrusion systems. The desired outcome is to print layer heights at a minimum of 0.5 mm with a print volume of 216 in³ (6 in x 6 in x 6 in).

339 • Computational Finance Using Python

BRENDON COLBY, ABDULLAH MONIM, JACOB BORTH

FACULTY SPONSOR: KIRK ANNE, CIT

The purpose of this project will be to combine our group's knowledge of python with our knowledge of financial markets. Using python, we will build a way to import stock information from an application program interface (API), and express that data in the form of a candlestick chart. Furthermore, we will take the imported data and create common technical indicators and strategies for certain stocks and index ETFs. In addition, we will be building other indicators and implementing other strategies involving options trading, specifically a cal-put ratio and a pricing model. Then, we will see how some of these strategies fared over time, and what the net profit margins were.

EDUCATION

340 • Innovative Communication Technology (Smartstones :prose)

DANIELLE LEVY, MOLLY ST. THOMAS, BARRY GRANT

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

This form of augmentative and alternative communication (AAC) has a wide range of options and can be used in a variety of different ways. It can be used by anyone from a child who has difficulty forming sentences, to someone who is paralyzed and cannot speak. The program can be installed through an app on iPhones, iPads, or on an Apple Watch. Words and sentences can be programmed into the app to then be repeated back. In addition, a sensory remote controller can be used to help users control word expressions they want to use. This technology allows the user to record up to 24 phrases that can be said aloud. It can also be used for people who lack the ability to use a traditional AAC application or press small buttons by using a remote control. It can also be set up so that it can read people's brainwaves and use that information to form words and sentences.

341 • Take a Gaze at our Poster

JORDAN WISSET, EVE ZANCHELLI, DANIELLE DISABATO

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

This poster provides a detailed description of how and why some individuals with disabilities use the Tobii Dynavox Eye Gaze as a form of AAC. The Tobii Dynavox Eye Gaze is used for communication when an individual is unable to communicate verbally and lacks physical abilities that limit motor responses. This poster will also discuss the history of this form of AAC and give background information on why it was developed and how it may be used by students with disabilities. Further details about different features offered by this form of AAC, as well as limitations and benefits, will be included.

342 • Proloquo2go: What it Can Do for Your Students

RACHEL BLOCK, JESSICA DRECHSLER, JUSTIN FRANKEL

FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

Proloquo2go is an iPad app specifically made for students with certain types of disabilities, such as autism. The app provides keys/buttons that contain pictures and words. When the child presses the key the app vocalizes that word and the child can form sentences or phrases. The app can be customized to fit the needs of individual children. This poster will provide information on how the apps works, benefits to users such as accessibility, affordability, and customization, and discuss specific disabilities where it may be beneficial in a school setting.

343 • Sign Language as a Form of Augmentative and Alternative Communication

REBECCA GENNES, KIMBERLY BUEHLMANN, ELIZA COX, NICOLE EDWARDS, DANNI RAFFLOER
FACULTY SPONSOR: DOUGLAS MACKENZIE, EDUCATION

This poster will examine how various sign language systems are used as a form of augmentative and alternative communication (AAC) for students with disabilities. The poster briefly describes the history of using sign language as a mode of AAC. A number of different signing systems used, such as American Sign Language, Invented Manual Signing, Manually Coded English, and Simultaneous Communication, will be outlined, as well as how each would be used in an educational setting. The implementation of sign language for students with disabilities will be discussed, as well as advantages and disadvantages of this implementation. Finally, the poster will detail studies regarding the use of sign language as a form of AAC in students with disabilities, specifically in children with autism and cognitive disabilities.

344 • Disability Studies in Higher Education

JESSICA RILEY, CATHERINE HEZEL, KITRICK MCCOY, LAURA SATURNINO, LEONIDAS CHRISTOFILOPOULOS

FACULTY SPONSOR: LINDA WARE, EDUCATION

Our analysis will present a study on the importance of disability studies which directly leads to the critical need of a disability minor at SUNY Geneseo. We believe this minor would be a great asset to our college because it will add a level of diversity to our campus, that it is currently lacking. A new perspective on disabilities in America that applies on a societal level will also be a direct implication of this new minor.

ENGLISH

345 • Community Organizing: Creating a Tool Box for Efficiency and Inclusion

MARY RUTIGLIANO

FACULTY SPONSOR: BETH MCCOY, ENGLISH

This poster will give context to my work with Dr. McCoy in the directed study, Community Organizing: Readings to Guide Practice. Currently, my organizing includes the start up of Geneseo Chapter of Showing Up for Racial Justice (SURJ). SURJ is a national organization dedicated to organizing white people for racial justice. As their

mission states, "through community organizing, mobilizing and education, SURJ moves white people to act as part of a multi-racial majority for justice with passion and accountability." To paraphrase Mariame Kaba, this is an opportunity to get our people. Organizing, facilitating and the host of other skills included in effective activism are new to me, and while SURJ puts its work into action, it is crucial to engage in self-education and development to ensure effective, inclusive organizing. My position as a new, young, white organizer necessitates that I call upon the past work and knowledge of experienced activists. This poster will outline the theory and ideas behind the practice of SURJ and my own experience as a new activist in the context of our Geneseo community.

346 • Argentina's Exquisite Treasure

CONSUELO MANSILLA, FACUNDO ARIZAGA

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

Argentinean presenters will make a poster describing their country's cuisine by showing some traditional dishes and drinks. They will also explain how they connect to their culture and why they are of paramount importance to creating a sense of belonging within society. Some of the dishes described in the poster will include dulce de leche (milk candy), asado (Argentinean barbecue), and empanadas. As for the drinks, the presentation will include fernet con coca and mate. Presenters will not only give a description of these exquisite plates and beverages, but they will also explain the role Argentinean food plays in creating special moments within families and groups of friends. The students will make a special emphasis on the historical background of Argentinean cuisine and the significance of preparing these meals together. Finally, the presenters will depict a typical Sunday family meal while trying to illustrate the feelings associated with this shared moment.

347 • Korean Lifestyle and Etiquette Compared to American Culture

HEUIJOON YUN, ANDY LEE, DOHYUN KIM, HYUN SEONG PARK

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

We will be covering the cultural differences between South Korea and the United States in terms of etiquette and lifestyle. More specifically, we will demonstrate cultural differences in schools, workplaces, and restaurants. There are many major cultural differences that Korean's and American's have. For instance, Korean's value the idea of respecting elders, even among similar age groups. We will explore differences in the general atmosphere of workplaces and restaurants within these categories and discuss some fun facts that people from other cultural backgrounds may not know. Overall, we will try our best to present what it feels like to experience Korean etiquette and lifestyle. We hope our presentation will help those who might be interested in traveling to Korea.

348 • Karaoke Cultural

IKKI TANAKA, GRACE JIN, QI ZHENG

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

For our Great Day project, our group has decided to focus our presentation on the performance of karaoke within the context of different cultures. We will begin by providing a brief overview of the history of karaoke in order to build a foundation for how the practice has since evolved. Similarly, we will also include a discussion on how exactly the practice of karaoke became so popular globally. Throughout the presentation we will display pictures of different karaoke rooms as a visual representation to better inform the audience. Our presentation will conclude with a display of some of the most popular English songs which are sung abroad, particularly in Japan, China and Korea, during karaoke performances.

349 • Korean Holidays

SEUNG WHYAN LEE, TAEWON HWANG, MIN JUNG HA, YEDARM HAN

FACULTY SPONSOR: IRENE BELYAKOV-GOODMAN, ENGLISH

Our group is going to make a poster about Korean holidays. such as New Year, March 1st Day, Memorial Day, Chu-Suk (Korean Thanksgiving Day), Independence Day, Gae-Chun Day, and Hanguel Day. We will present traditions, family celebrations, and cultural phenomena that are associated with these holidays.

350 • To the Shoreline

JASON GUISAO, SASHA MILLER

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

With assistance from S.A.S.I. President Sasha Miller, To the Shoreline--a socio-political chapbook project funded by the Geneseo Foundation Undergraduate Summer Fellowship--will be presented and discussed; namely, the experience of writing political poetry; and the ways in which said poetry navigates the macro-American landscape. S.A.S.I.--student experts on social injustice resistance and activism--will provide veritable discourse on the myriad injustices that appear in the collection.

GEOLOGICAL SCIENCES

351 • Foraminifera from the Muriwai Formation, Auckland, New Zealand

DEBORAH PIERSON, MACKENZIE WATTS

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Miocene turbidite deposits of the Muriwai Formation located on the southern end of Muriwai Bay, near Auckland, New Zealand contain foraminifera. *Globigerinae*, *Orbulina*, and *Allomorphina* which range from 0.5mm to about 1.55 mm in diameter. Four separate methods were used to break down the rocks to extract the foraminifera specimens. After careful sifting and drying the foraminifera were examined with a scanning electron microscope to identify them. The foraminifera indicate deposition in an offshore environment, likely a deep marine shelf. *Allomorphina* are benthic in nature while the *Orbulina* and the *Globigerinae* are planktic in nature. The rock containing these foraminifera was a siltstone section that was likely a section of a turbidite sequence, which was not well cemented.

352 • High Frasnian Conodonts from the Canaseraga Sandstone, Java Group, Upper Devonian, Western New York

EZEKIEL MCGINN

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

A fossiliferous calcite cemented conglomeratic sandstone formed at the base of a large channel feature in the marine strata of the Canaseraga Sandstone, close to the Frasnian-Famennian boundary (Upper Devonian), contains a diverse *Polygnathus* (Conodont) fauna in addition to fauna typical of a deep shelf environment, including the brachiopods *Cyrtospirifer* sp. aff. *C. whitneyi*, *Spinatrypa* sp. aff. *S. compacta*, *Nervostrophia* sp. *Douvillina* sp. *Douvillinaria* cf. *D. perversa*, and *Pseudodouvillina* cf. *P. euglyphea*, as well as bivalves, bryozoans, cephalopods, corals, crinoids, and fish. The genera *Douvillinaria* and *Pseudodouvillina* became extinct in central and western North America shelves during the Lower Kellwasser extinction (LKE) in the uppermost part of Frasnian Zone 12. *Nervostrophia* occurs in post-LKE Frasnian Zone 13a strata in the Iowa Basin, and *Cyrtospirifer* ranges into early Famennian rocks in eastern and western North America. *Spinatrypa compacta* Cooper and Dutro, is restricted to Frasnian Zone 13a deposits of the Contadero Formation in the San Andres Mountains in southern New Mexico, although similar species such as *S. trulla* first occur in Frasnian Zone 11 deposits but are extinct in Iowa at the close of the LKE. The conodonts include *Polygnathus aequalis*, *Po. alatus*, *Po. brevis*, *Po. webbi*, and at least one new *Polygnathus* taxon, as well as two palmatolepid fragments suggestive of *Palmatolepis hassi*. Both the conodont and brachiopod faunas are typical of an Upper Devonian offshore shelf environment. The conodont fauna is may be as young as Frasnian Zone 13 in the Late Frasnian. The channel is speculatively representative of a significant sea-level fall at the end of the Frasnian that coincides with the Frasnian-Famennian boundary.

353 • Petrographic Analysis in Determining Sand Layer Origin and Timing Between Two Ignimbrite Deposits from 26.5 Ka Oruanui Eruption, New Zealand

NICHOLAS JONASSE, MATTHEW REBOLINI

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

Two Ignimbrite deposits from the Oruanui eruption, 26.5 Ka, located 46 km north east of the Taupo supervolcano caldera, New Zealand, were found to be bisected by an unidentified sand layer. Samples from the three layers were analyzed using Munsell colors, sieving and imagery from a Scanning Electron Microscope to determine maturity and chemistry. The yellowish gray ignimbrite deposits contained pumice lapilli and ash sized particles signifying that they came from pyroclastic density flows. The pale yellowing brown, coarse to medium sand layer had angular to sub rounded grains, ample amounts of quartz, hornblende, plagioclase, and potassium feldspar grains as well as a presence of Mg and Fe indicating

an intermediate composition provenance from the surrounding area and was moderately well sorted indicating that it was deposited in a sub mature fluvial environment that was likely a result of the often-flooded Paleo Lake Huka. The ignimbrite deposits low presence of Fe and Mg alluded to a rhyolitic source confirming it came from the Taupo volcano.

354 • Petrographic Analysis of "Shrunken" Ooids of Upper Cambrian Age, Allentown Formation, Bethlehem, Pennsylvania

NICHOLAS JONASSE

FACULTY SPONSOR: JEFFREY OVER, GEOLOGICAL SCIENCES

The Allentown Formation of eastern Pennsylvania is characteristic of half-moon or shrunken ooids. Ooids of shrunken structures project an upper light and a lower dark portion within the inner structure which appears as a half-moon texture. This is the result of settling and deformation of the core structure that develops later concentric rings that form around the inner nuclei. Internal structures of shrunken ooids are rare within the rock record and are characteristic of Cambrian age strata which provides interpretation on diagenetic processes and depositional environments. From microscopic and cathode luminescence observations, shrunken ooids of the Allentown show textural and mineralogic alterations due to burial diagenesis and eustatic sea level changes during the Upper Cambrian. The presence of anhydrite minerals correlate to the introduction of dolomite which effected the diagenesis process of ooid growth within the Allentown Formation.

355 • Remote Spectroscopy of Hydrothermal Fields in South West Iceland

ALLISON BARGABOS

FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

Geothermal systems are actively studied for their economic and environmental benefits. They are common in Iceland, and are often characterized by fields of hydrothermally altered rocks and minerals. These systems can be identified from orbit using Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) images. Three ASTER images of known geothermal systems in South West Iceland, including Krysuvik, Geysir, and Hengill, were obtained, and then analyzed with ENVI software. The results validated ASTER as a source for locating unique hydrothermal spectra, and for mapping other geologic landforms, such as basaltic lava flows, palagonite, and vegetation. Mean regions of interest (ROI) plots show diagnostic absorption features for hydrothermal ROIs at around 2.2 μm , further validating ASTER's accuracy in locating hydrothermal systems. These methods can be applied to other locations with geothermal activity, such as New Zealand, and can be tested with higher resolution instruments to further improve precision.

356 • Comparison of the Timing and Hydrology of Drainage Networks in the Xanthe Terra Region of Mars

ANNE KELLY

FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

In order to better understand the surface and climate history of the equatorial highlands of Mars, the river systems of both the Xanthe East and Xanthe West regions were analyzed. Both drainage density calculations as well as relative age dating techniques were used to gather information on the climate and the physical features of the drainage basin present at the time of the most recent activity. Data regarding the craters, ejecta blankets, and fluvial networks of the East Xanthe Terra region of Mars was collected and analyzed using GIS software. The area of study spanned 361,259 km^2 , and included 83 identified fluvial networks. Of those 83 networks, 25 were given relative age dates in relation to the catastrophic outflow channels that cut across this region. 17 out of the 25 were found to have postdated these large outflow channels. Crater statistics performed on the 401 craters that were mapped yielded an average crater area of 114.93 km^2 , and an average diameter of 7.47 km. This data was compared to the data gathered from the West Xanthe Terra region of Mars in order to yield greater insight into how these massive outflow channels affect the basin drainage of specific regions.

357 • Using Remote Sensing to Map Hydrothermal Alteration of Geothermal Sites on the North Island of New Zealand

CASEY HOFFMAN, DAVITIA JAMES

FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

This study aims to test the accuracy of the ENVI program, a geospatial software application, by creating mineral maps of geothermal sites on the North Island of New Zealand. These will be compared to field photographs and notes taken at the locations in January 2017. Three hydrothermal areas in New Zealand were examined: a geothermal national park in Rotorua, the Tongariro Alpine Crossing, and White Island. High resolution images from the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) database were obtained for each study area. In ENVI, Regions of interest (ROIs) were created for the areas. All areas of distinct composition were highlighted as a ROI, including basaltic andesite lava flows, pine forests and ocean water. This allowed the program to differentiate between minerals and other materials by comparing surface reflectance of ROIs to the rest of the image. Specific minerals were identified using spectral library matching techniques. Minerals of interest were selected, then categorized maps of the study areas were created. Finally, the extent of hydrothermal alteration at each site was examined. This demonstrated the effectiveness of ENVI as a tool in mineral mapping. *Selected for presentation at Buffalo Association of Professional Geologists, Buffalo, NY.*

358 • Laki Lava Flow - The Rise and Collapse of Pits in the Eastern Lobe

ELIZABETH PELLEGRINO

FACULTY SPONSOR: NICHOLAS WARNER,
GEOLOGICAL SCIENCES

The 1784 Laki eruption, located in Southern Iceland, created an inflated pahoehoe lava composed of basalts. This lava flow is noted for meter to ten-meter sized pits. The larger of those are thought to be lava-rise pits, which formed during the flowing and cooling processes of the lava. The smaller pits, however, showed a slightly different morphology when examined in the field, specifically the moss growing on the top of the lava flow hung over the side of the pit. If the these one-meter to three-meter large pits were not formed like lava-rise pits, then they might have formed due to the rock collapsing underneath the moss. Using remote sensing programs, ENVI and ASTER, and techniques, we studied the variation in vegetation health on the lava flow and observed where the rivers were in the area. ROI images showed that there were multiple types of vegetation grown in the area and that healthier vegetation grew on the western side of the lobe, which correlated with where the densest areas of pits were located, suggesting that groundwater played a part in forming the smaller pits by causing the rock to collapse.

359 • Characterization of Ancient, High Thermal Inertia Units on Mars

KATHRYN CHRISTOFF

FACULTY SPONSOR: NICHOLAS WARNER,
GEOLOGICAL SCIENCES

This research focused on age dating and resurfacing history of two distinct units in the Terra Cimmeria region on Mars that were previously dated to Noachian age. There is a distinct high thermal inertia olivine-bearing unit that is present in Terra Cimmeria as well other locations on Mars including two of the Mars 2020 landing site finalist. Thermal inertia is a materials resistance to change in temperature. Olivine-rich high thermal units are unusual for old terrains on Mars because they tend to be degraded and lacking olivine. Craters with a minimum diameter of 200 meters were counted and then crater statistics plots were produced. The high thermal unit yielded an age of 820 ± 0.3 Ma for smaller craters while the low thermal unit yielded an age of $2.30 \pm .1$ Ga for smaller craters. The difference in age suggests degradation, either erosion or resurfacing in the area. The difference in age suggests that the high thermal inertia units is possibly more friable and unable to retain older craters. The high thermal units could be a lava infill or exposed bedrock due to a strong wind regime while the low thermal units are well covered in regolith.

360 • Drainage Development and Evolution in Response to a Valley Filling Lava Flow, Laki Iceland

MARK LING

FACULTY SPONSOR: NICHOLAS WARNER,
GEOLOGICAL SCIENCES

The Laki flow is located in southeast Iceland originating at the Lakagígar fissure located between 64.0707°N , 18.23378°W and extending to 63.831°N , 17.743°W . The Laki eruption (1783)

produced ~ 14 km³ of inflated, bubbly pahoehoe (10-15 m thick) lava which flowed down a former pro-glacial valley, with properties similar to a confined sandur plain. The emplacement of the Laki Flow blocked the valley and the flow routing in this region has since had to respond to that event. The primary objective of this research was to constrain how a river responds to a lava flow filling its valley. The rivers were digitized and overlain on the digitized lava flow. The data suggest the rivers have responded in three ways. First, rivers diverge around the lava flow. Second, where the rivers flowed into an obstacle, the water ponded in semi-enclosed basin and at some locations could spill over the basin margins. Third, runoff that infiltrates through the porous lava flow reemerges at the toe of the lava. Low stream ordering, low drainage density, and a convex up long-profile indicates the river systems are immature. Our study suggest inaccuracies in ArcHydro predictions of significant channelization on the flow due to the porous pahoehoe lavas. *Selected for presentation at Buffalo Association Professional Geologists, Buffalo, NY.*

361 • Evaluating Impact Crater Ejecta Thickness Models in Xanthe Terra, Mars

MORGAN MCDONNELL

FACULTY SPONSOR: NICHOLAS WARNER,
GEOLOGICAL SCIENCES

This research aims to evaluate the ages of impact craters in the Xanthe Terra region of Mars as well as the crater counting methodologies involved in the age assessment. Ages of craters are used here to determine the relative age for rivers that superpose, or are blanketed by, crater ejecta. Ejecta thickness for large, >3 km sized craters has been calculated to test the validity of ages generated by crater counting their ejecta blankets. This method does not traditionally consider that some craters in the count may either superpose the ejecta blankets or are partially buried by the ejecta. Partially buried craters should not be included in crater counts of ejecta. To determine the maximum crater diameter that should be included in a count, a depth to diameter ratio is used to illustrate how crater depth must not exceed ejecta thickness. An annulus of certainty is calculated to show the maximum size of craters (which decreases as ejecta thins) that should be counted. The average thickness at varying distances from the centers of craters is determined from profiles taken with 3D Analyst in ArcMap.

362 • Rheology, Emplacement Characteristics and Morphology of Andesitic Lava Flows, Tongariro Crossing, New Zealand

PATRICK SUTER, WILLIAM BARNES

FACULTY SPONSOR: NICHOLAS WARNER,
GEOLOGICAL SCIENCES

On the North Island of New Zealand lies the Tongariro Crossing, containing Mt. Ngauruhoe and Red Crater. This research aims to 1.) Establish criteria in order to distinguish a lava flow from a block and ash flow from both systems and 2.) Test the validity of empirical models for flow rheology and emplacement characteristics as demonstrated by Warner and Gregg (2003). Aerial photographs

and topographic maps were downloaded from Land Information New Zealand (LINZ), and a NASA TOPSAR digital elevation model was downloaded from UAF (Uni. Alaska.) Using the aerial imagery, we identified and mapped block and ash flows and lava flows from both systems. Morphometric properties of the lava flows such as length, width and thickness were collected from this map and input into a series of equations for yield strength, effusion rate, viscosity and time of emplacement. Distinct features of lava flows such as the presence of compression ridges and fractal lobate flow fronts were identified. Key characteristics of block and ash flows such as their lack of coherence and impermanence were also identified. Because the values for viscosity, etc. fell well within acceptable ranges, the empirical models were determined to be valid.

363 • Age Constraints on Faulting from Paleomagnetism, Mount Talloc Roof Pendant

BRANDON PERPALL

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The Mount Talloc roof pendant is an isolated block of Jurassic volcanic arc strata completely surrounded by younger igneous intrusions. In an effort to understand the geologic history of this region our collaborators from the University of the Pacific collected samples from the dikes that intrude the roof pendant. Dikes are tabular igneous bodies that cut through pre-existing units and typically preserve the inclination and declination of Earth's magnetic field at the time of emplacement. By analyzing cores drilled from these hand samples dikes through the process of demagnetization, we can determine the remnant magnetization of the dikes during emplacement. These data can then be used to calculate the age of emplacement, which will place a time constraint on the age of the faulting in the region. Preliminary analysis indicates that most of the sites have a stable paleomagnetic signature with a consistent orientation. These data suggests that it is possible to use magnetics to constrain the age of an intrusion to a specific geologic time period.

364 • Magnetic Susceptibility of Samples Deformed within the Variscan Foreland Fold-Thrust Belt in the Western Irish Namurian Basin (WINB)

HANNAH SACKETT

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

The Western Irish Namurian Basin (WINB) exhibits kilometer-scale deformation related to the Variscan foreland fold-thrust belt, yet recent studies have revealed that the grain-scale strain within the strata has little to no tectonic fabric. These studies were completed using normalized Fry Analysis to create ellipsoids for each sample; providing information on both shape and orientation of the grains. Measured fabrics were weakly deformed, primarily oblate, and indicative of vertical flattening due to compaction and lithification. Anisotropy of magnetic susceptibility (AMS) was performed to further analyze the magnetic fabrics of the carbonate samples from

the WINB. AMS fabrics are characterized by z-axes consistent with vertical shortening, while the x-axes suggest NE-SW elongation. AMS ellipsoids were primarily oblate and weakly anisotropic, with anisotropy parameter (Pj) values ranging between 1 and 1.06. Similar to the strain analysis performed in prior research, AMS fabrics are consistent with compaction rather than tectonic activity. A regional scale investigation of strain could provide more clarity as to why grain-scale strain does not reflect the large-scale deformation. The similarity between the strain and AMS fabrics suggests that AMS is a good proxy for strain, which could provide a more efficient approach for collecting a larger data set. **Selected for presentation at Buffalo Association of Professional Geologists, Buffalo, NY.**

365 • Evidence for Shear Strain in the Fabric of Gneiss: An Analysis of the Alpine Fault at Gaunt Creek, West Coast, New Zealand

PAIGE HAVENER, PAIGE WALSH

FACULTY SPONSOR: SCOTT GIORGIS, GEOLOGICAL SCIENCES

Gaunt Creek is a well-preserved exposure of New Zealand's Alpine Fault, an active tectonic boundary between the Pacific and Australian plates. The type of boundary the Alpine Fault represents on the South Island is a transpressional zone, where both shear and convergence occur simultaneously. A stream cobble of gneiss was collected from the study area and turned into two microscope slides, or thin sections. After a series of cutting, grinding, and polishing, a fabric analysis was performed in order to better understand the mechanics of the active fault. Gneiss is a metamorphic rock that has been subjected to intense heat and pressure, which alters its mineral and structural composition. Multiple microfabrics, or alignments of the minerals that make up the overall structure of the rock, are present within the sample. These include mica fish, rotated porphyroclasts, sheared microfolds, and others. From the data collected, the sense of shear expressed by all of the microfabrics are consistent with each other, indicating that they all experienced shear deformation in the same direction.

439 • Fluvial Terraces of the Castle Hill Basin, New Zealand

ANTON GRUNING, NICOLE GREGG

FACULTY SPONSOR: NICHOLAS WARNER, GEOLOGICAL SCIENCES

The aggradational terraces of the Castle Hill basin were used to calculate an uplift rate for the basin. 72 terraces were mapped as polygons with aerial imagery and DEM's from data.linz.govt.nz. These were correlated to each other by using a Hillshade model, DEM, Google Earth, and 3D Analyst tool in Arcmap. Using values for average elevation of the basin, base elevation, and a glacial age of approximately 15,000 years, an uplift of 16.6 mm/year was calculated. This fits within the expected 10-20 mm/year range previously calculated. Sources for error could include resolution conflicts between the aerial imagery and DEM, and vertical datum inaccuracies.

HISTORY

366 • Newton V. Hooke: The Battle over Intellectual Property and Scientific Knowledge

CONNOR TERRY, LIAM COLLINS, DEMETRIOS GIANNIOS

FACULTY SPONSORS: JOE COPE, HISTORY GARY TOWSLEY, MATHEMATICS

This poster explores the rivalry between Isaac Newton and Robert Hooke and the motivations behind their arguments over the theories of light and gravitation. Both men were driven by personal recognition within the Royal Society. Newton's Theory of Light was rejected by fellow scientists. However, after Hooke's death, Newton's Theory of Gravitation achieved widespread scientific acknowledgement. To this day, Newton's theoretical framework is considered the most accurate and useful model. Hooke's contributions to Newton's work, however, are largely uncredited. Newton did not credit Hooke's work in *Principia*, but rather emphasized the superior quality of his mathematical presentation and the support of his new patrons. Ultimately, their rivalries signified the importance of intellectual property, quality of patronage, empirical research, and the reputations of their philosophies.

367 • Robert Boyle: The Relationship Between Spirituality and Scientific Inquiry

TALIA FABIILLI, LENA EVERS-HILLSTOM, CARLOS ABREU

FACULTY SPONSOR: JOE COPE, HISTORY JAMES MCLEAN, PHYSICS & ASTRONOMY

Our poster will look at the relationship between Robert Boyle's religious sensibilities and scientific work. Influential in shaping science around experimentation and observation, Boyle was also very religious and concerned with finding a way to prove his religious ideals through scientific means. Specifically, Boyle was concerned with the reconciliation of his scientific and religious world views through experimentation with the transmutation of metals, such as the transmutation of gold into base metals. Boyle linked this with the presence of the otherworldly, as he believed that through transmutation he could give more legitimacy to the potential existence of spirits and, on a larger scale, God and religious belief. Thus the poster looks at how religion led Robert Boyle to experiment with certain aspects of science, and how this experimentation reflected Boyle's perception of the world.

435 • From the Minds of Many: James Joule and the Scientific Social Networks of the 19th Century

GABRIEL PONCE, TRAJEN CRACIUM, MORGAN WEBER

FACULTY SPONSOR: JAMES MCLEAN, PHYSICS & ASTRONOMY JOSEPH COPE, HISTORY

James Prescott Joule is a significant 19th century English scientist and whom the unit of energy, the 'Joule', is named after. His work on the mechanical equivalence of heat redefined the way scientists viewed heat and laid the foundation for the study of thermodynamics. This poster will map out the

interactions that Joule had with notable members of the scientific community including scientists such as Kelvin and Playfaire. This will lead into Joule's creation of his heat apparatus in 1845 and the implications of this invention thereafter. The map will include short descriptions of Joule's scientific contacts and his relations to them, in order to illustrate that scientific progress does not come from one person, but rather is the result of a confluence of scientists collaborating with one another. There will also be a timeline describing Joule's introduction into science, the progression of his influence in the community, and the discoveries resulting from Joule's works. Joule's connections to other scientists serves as a reminder that while great innovations are frequently attributed to one person, this view potentially discounts the influence of a scientist's social network to any one person's work.

368 • Voices from the War on Terror

KATHERINE ZASLAVSKY, RACHEL OLLIS, ISABEL OWEN

FACULTY SPONSOR: MEGAN ABBAS, HISTORY

In 2001, a foreign terror attack devastated the American nation. Sixteen years later, 9/11 remains in our country's consciousness as one of the most significant events in recent history. The world has been shaped by this event and the ensuing societal changes. Utilizing the methodology of oral history, we explore the narratives of individuals, juxtaposed against the official accounts that shape our understanding of global events. This project seeks to share the multitude of experiences affected by and related to the War on Terror, the ongoing military conflict stemming from 9/11.

369 • Drag Balls, Drag Queens, and AIDS in New York City: How Drag Culture Became a Source of Liberation, Community, and Identity

JESSICA LISI

FACULTY SPONSOR: RYAN JONES, HISTORY

Drag queens and the art of drag is often viewed as a small subculture of the LGBT community, rather than an essential part of LGBT history. This presentation argues how instead, drag was a form of gay liberation before Stonewall; how drag culture flourished along with the LGBT community after Stonewall and provided a safe space for homosexuals and transsexuals figuring out their identity in the Post-Stonewall period; and how drag culture and drag queens played an important role during the AIDS crisis. Whether it is for transformation of one's self and identity, blurring the lines of gender and sexuality, or to create a feeling of belonging, drag queens participate in drag to express some aspect of themselves and show it openly to the world. Drag is visible, drag is a form of art and creative expression, and drag remains to be an important aspect of LGBT art and culture. This presentation aims to analyze the importance of drag queens within the larger LGBT historical narrative, but also in New York City, and how the culture and atmosphere of New York City and the culture of drag work well with each other, creating a symbiotic relationship.

MATHEMATICS

370 • How a Flipped Classroom Approach to Teaching Undergraduate Students in Mathematics Can Instruct My Future Teaching

NICOLE TOMEI

FACULTY SPONSOR: DOUGLAS BALDWIN,
MATHEMATICS

As a pre-service teacher, I hope to utilize a “flipped” instruction approach in my future classroom. A flipped format is where the traditional delivery of material through lectures is moved out of the classroom, and in-class time concentrates on hands-on learning exercises (such as might traditionally be done through homework assignments). Alongside my hope to utilize a flipped instruction approach, my desire to teach high school mathematics motivates why I am observing Dr. Baldwin’s teaching style. There is great value in flipped classroom teaching, as I discovered in research literature on flipped instruction; it has been shown to increase student performance. Flipped classrooms permit more time for students to build their knowledge. In contrast, in a traditional lecture-based class, students have less opportunity for self-discovery and are doing less independent thinking. To better gauge the effectiveness of mathematics classes taught in a flipped format, I am holding a focus group session for Dr. Baldwin’s students. Their responses will provide me with a better sense of the similarity between Dr. Baldwin’s instruction and flipped classrooms I have read about. I hope thereby to gain insight on how students view a flipped classroom in contrast to classes taught by direct instruction.

371 • Connecting Conventional Computer Rendering with 3D Printing

STEVEN SICARI

FACULTY SPONSOR: DOUGLAS BALDWIN,
MATHEMATICS

When working with computer graphics in object oriented programming it is common practice to use class hierarchies to establish renderers which all present the same interface to clients but draw to different display devices. The question was: can one create an STL (Standard Tessellation Language) file renderer class which exists in a given renderer hierarchy which was constructed with the intent of making screen renderers? The answer is yes, I have been able to construct such an STL renderer and put it in use with models of crystals. In this project, I worked with an already existing rendering class hierarchy which was being used to perform generic screen rendering for models of crystals. The existing screen renderers receive triangles from the client and draw all the triangles onto the screen using a single “draw” method. The STL renderer I wrote overrides this “draw” method and writes the triangles into an STL file. After successfully constructing the STL renderer, I was able to find 3D printer settings which work very well with my models and print out the models on both the LulzBot Mini 3D printer and the MakerBot Replicator 3D printer.

372 • 3D Boundary Detection Using Cellular Automata and Genetic Algorithms

WALTER GERYCH

FACULTY SPONSOR: DOUGLAS BALDWIN,
MATHEMATICS

We designed and implemented an algorithm for boundary detection in 3D images that consisted of a cellular automaton [1] optimized by a genetic algorithm [2]. The method involves randomly generating an initial population of rule sets for cellular automata. The fitness of each rule set is determined by the Peak Signal to Noise Ratio of the image generated after running a cellular automaton using that rule set on a ground truth test image. A genetic algorithm then breeds the most fit rule sets together. After several generations, the fittest rule set resulting from the genetic algorithm is used to define the cellular automaton that acts as the boundary detector for the 3D images. We compared the performance of this genetic algorithm-derived cellular automaton to the performance of other boundary detectors, using the PSNR as a metric for performance. The cellular automaton rule set derived from the genetic algorithm produced results that outperformed a previous method of 3D boundary detection when run on brain scans from the BRATS 2016 dataset. [1]: Wolfram, Stephen, *A New Kind of Science*. Champaign: Wolfram Media, 2002. Print. [2]: Toffoli, T., Margolus, N., *Cellular Automata Machines*. Cambridge: MIT Press, 1987. Print. *Selected for presentation at Consortium for Computing Sciences in Colleges, Northeastern Region, Albany, NY.*

373 • Patronage in 17th Century Europe: How Tycho Brahe Influenced Johannes Kepler's Research in Planetary Motion

DANIEL WOLFANGER, LOGAN CLEARY, MAUREEN HENRY

FACULTY SPONSOR: GARY TOWSLEY,
MATHEMATICS

JOSEPH COPE, HISTORY

This poster will explore how Johannes Kepler's research was affected by Tycho Brahe's patronage of Kepler. Furthermore, we will look at how the countries that they chose to conduct their research in directly influenced their resources during the Protestant Revolution. Johannes Kepler had a background in mathematics and science, particularly, the computational aspect of science. Brahe on the other hand worked with direct observation and theory. After their meeting in Prague, Brahe hired Kepler as an assistant; their combined efforts allowed both to expand their astronomical research. Throughout their collaboration, Brahe and Kepler had to work around political and cultural instability associated with the Protestant Reformation. Brahe and Kepler's collaboration in Prague was the result of the former's conflict with his former patron, the King of Denmark, and a new patronage relationship that he had formed with the Holy Roman Emperor, Rudolf II. After Brahe's death in 1601, his connection with Kepler helped enable Kepler to continue to build and revise Brahe's research until he finally refuted Brahe's initial thesis and discovered his own Laws of Planetary Motion.

374 • Applications of Discrete Mathematics in Computing: Apportionment, Forbidden Positions, and Shortest Paths

SHAYNE O'BRIEN

FACULTY SPONSOR: HOMMA FARIAN,
MATHEMATICS

The purpose of this study is to demonstrate select applications of discrete mathematics in computer science. In particular, we consider the apportionment problem, computing arrangements given forbidden positions, and the notion of finding a shortest path. While these problems are not novel, they are foundational to many tangible, real-world problems such as gerrymandering, scheduling, and the traveling salesman problem.

NEUROSCIENCE

375 • A Neuroscience Approach to Fostering STEM Education in Elementary School Students: Impact of STEM Workshops at the RKids Afterschool Program

MOLLY BRADY, SUNITA SINGH, WILSON MEI,
RAVNEET SINGH, MONICA PUJOLS

FACULTY SPONSOR: TERENCE BAZZETT,
NEUROSCIENCE

THOMAS MATTHEWS, GOLD PROGRAM AND
JESSIE GYR, NYCC AMERICORPS VISTA

Recently, there has been a surge of education promoting Science, Technology, Engineering and Mathematics (STEM). Within the overarching field of science, neuroscience is among the fastest-growing areas. Increasingly advanced research technology and methods allow for better understanding of nervous system functions and malfunctions, and how researchers can work to prevent and combat some common malfunctions such as neurodegenerative disorders. Neuroscience is a field of the future, making it beneficial to begin teaching students about the brain and nervous system as early as elementary school. Sparking an early interest in STEM fields is essential to future research and advances in medicine, and beyond. A collaboration with SUNY Geneseo's Center for Community, AmeriCorps VISTA, and the RKids afterschool program presented a STEM outreach opportunity. Thus, SUNY Geneseo Neuroscience majors enrolled in Applications in Neuroscience (NEUR 215) spent the current semester developing a series of workshops to present at an afterschool enrichment program for 4th-6th graders. These workshops are designed to expose students to a range of neuroscience activities, including studying anatomical structure of the brain and perceptual abilities involving visual and tactile stimuli. Basic student understanding and interest were assessed pre and post-workshops to determine the relative impact of this novel program.

PHYSICS & ASTRONOMY

376 • 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 130 images, taken with 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.

377 • Quest for Signs of Life in the Midst of Chaos

JEFF DOSER

FACULTY SPONSOR: DAVID MEISEL, PHYSICS & ASTRONOMY

Automated classification of habitats and its species using deep learning techniques can provide a way to more easily and accurately assess the biodiversity of a habitat and its surrounding soundscape. To accomplish this task with minimal quantitative representation for unique identification, we performed a complete multi-resolution analysis of the characteristics and qualities of the signals using Mathematica. We developed a series of model signal sources, including sounds of common predator species, prey, and neutral species, as well as a series of model noise sources, including mobile and fixed anthropogenic sounds. We performed an exploration of different types of wavelets and other filtering techniques to determine what techniques had the desired characteristics of shift-invariance, optimum time-frequency localization, and classification enhancement of features for the deep learning system. Upon analysis, three wavelets showed the desired characteristics: the Cohen-Daubechies-Feauveau wavelet, the Biorthogonal Spline, and the Daubechies Orthogonal. Testing of these wavelets was performed by using a deep learning identification system to locate individual sound sources from a recording of Mendon Ponds Park, from which we judged the success of the system with each wavelet at identifying specific sound sources.

378 • Explorations of an X-Ray/Alpha Particle Micro-Imager

LAUREN FARRELL

FACULTY SPONSORS: DAVID MEISEL, CLINT CROSS, PHYSICS & ASTRONOMY

A low cost X-ray microscope built by modifying an optical CCD device uses electromagnetic radiation in the soft X-ray band (or low energy alpha particles) to produce lens-less but magnified images of small objects. The first step was to fabricate a detector housing that also holds the target mount. A Kapton window is placed over the detector and optionally over the target to protect the CCD surface that for image clarity has to be in close proximity to the target object. Two lens-less configurations are available: parallel rayed, monochromatic X-rays reflected onto the CCD from a plane metallic reflector, and a mono energetic point source illuminating the sample with alpha particles. Minimization of diffraction is essential to get sharp shadows cast on the CCD for

evaluation. Images of a variety of samples will be presented and will include small metallic objects of various sizes and shapes.

379 • The Target Chamber

Manipulator

DILLON RAMSEY

FACULTY SPONSOR: EDWARD POGOZELSKI, PHYSICS & ASTRONOMY

Geneseo's Pelletron accelerator is used to accelerate ions. These ions are accelerated into a terminal vacuum chamber in which they collide with a target. A nuclear reaction occurs and the products of this reaction scatter about the chamber. To detect these products, detectors are positioned around the target. Frequently detectors need to be moved to different positions. The Target Chamber Manipulator is a device that automatically repositions targets in the vacuum chamber without the need to break the seal of vacuum. The Target Chamber Manipulator can move targets to new positions in seconds. This device eliminates the time needed to ventilate the chamber and manually reposition the targets.

380 • Photon Existence in an Adaptation of the Hanbury Brown-Twiss Experiment

TRISTAN WILKINSON

FACULTY SPONSOR: GEORGE MARCUS, PHYSICS & ASTRONOMY

In an adaptation of the Hanbury Brown and Twiss experiment we explicitly demonstrated the existence of the photon. To do this we used a high power diode laser and a nonlinear crystal to generate correlated pairs of 800 (nm) photons. One of the pair traveled directly to a high efficiency avalanche photodiode detector, while the other was sent to a beam splitter and subsequently one of two other detectors. To show the photon exists we looked at coincidences between these three detectors using nuclear instrumentation module electronics (NIM). Showing that there are no coincidences between the two detectors after the beam splitter, with the other two coincidences present means that the photon does exist. We showed this to be the case by calculating an anti-correlation coefficient of 0.74 ± 0.17 .

381 • Using Rutherford Backscattering Spectroscopy to Characterize Targets for MTW

BARAK STOCKLER, GUNNAR BROWN, RYAN WARD

FACULTY SPONSORS: CHARLIE FREEMAN, 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 which was mounted on a silicon carbide stalk. The computer program SIMNRA is used to analyze the spectra. Co authors: C.R. Stillman, S. Ivancic, S.P. Regan, T.C. Sangster, Laboratory for Laser Energetics

Selected for presentation at Omega Laser Users Group, Rochester, NY.

POLITICAL SCIENCE & INTERNATIONAL RELATIONS

383 • The Unique Challenges Only Homeless Women Face

ALISHAH BHIMANI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Homeless women are faced with more difficulty than a man would because of their unique biological differences. Women have certain inherent challenges that force them to need more care that causes a financial strain on their everyday lives. As a homeless woman, that strain is multiplied tenfold. Women have to manage themselves physically every month during their menstrual period. This requires having the financial means to buy overpriced sanitary products. For a homeless woman, it means choosing between buying food or the products they need to take care of themselves. The government subsidies for the homeless do not allocate enough money to include enough of these invaluable products in shelters. Another example of how biology influences homeless women is their difficulty to gain access to maternal health care. Not only do homeless women have to worry about how to willingly have a child, they have the added fear of being raped in the streets and/or in the shelters. More of a problem is that these women felt that they could not get the medical attention they needed. Homeless women have a higher chance of having birth complications than women who are not homeless.

384 • Creating Employment Opportunities for Disabled Americans

ANTHONY KESLER

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

There are thousands of people in the United States that have documented physical disabilities. Many people with these disabilities also fall well below the poverty line. Getting out of poverty is a difficult task for any American, but being a working aged American with a physical disability makes getting out of poverty even harder. The only way to help these disabled Americans is to provide them with jobs. Employment is the only way to keep someone out of poverty, and finding a job with a physical disability is extremely difficult in the United States. The current policies that are in place have failed many disabled Americans for far too long. These policies need to be changed, and something needs to be done to help the thousands of disabled Americans who have no choice but to remain in poverty.

385 • Policies to Aid Homeless LGBT Youth

ARAM PEERS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In the United States, it is estimated that up to 40% of the 1.6 million homeless youth identify as being apart of the LGBT community (True Colors Fund). LGBT may be defined as any persons who identify as lesbian, gay, bisexual, and/or transgender. Only 7% of American youth identifies as any of the defined groups under the umbrella term, LGBT (True Colors Fund). These youths are often forced out of their homes due to unaccepting parents and/or other family members, or they leave due to unsafe living conditions, such as abuse from family, be it physically or emotionally. According to the True Colors Fund, "More than 1 in 4 are thrown out of their homes" (True Colors Fund). Policy based solutions for this issue are not simple or easy, but if found successful would help an often overlooked group.

386 • Teenage Mental Illness in America

CAITLYN BEST

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Mental illness among the youth in America is an enormous amount, reaching 20% between ages 13 and 18. 37% of students with a mental illness dropout of school, which is the highest dropout rate among disabilities. 50.6% of children aged 8-15 have received services for mental treatment. 70% of the youth in juvenile justice programs have a mental illness. Suicide is the third highest cause of death among this age group and 90% of suicides had an underlying mental illness. Not only do many mentally ill teenagers wind up dropping out of school, ending up in jail, but some may go on to be homeless or develop substance addictions. As we see through the statistics on adult mental illness, 26% of adults who are homeless have a history of mental illness and 10.2 million adults have mental illnesses concurring with substance abuse disorders. The prevalence and effects of mental illness have an effect on those not suffering from them as well. 193 billion dollars in American earnings each year are due to mental illness.

387 • The Recidivism of Mentally Ill Individuals In Federal And State Correctional Systems

CALLEN GROSS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Impoverished mentally ill individuals comprise a large portion of the inmate population in our nation's correctional facilities. Of this mentally ill population, only 33 percent of inmates received mental health treatment while incarcerated. They are sent through the same criminal channels and are detained and incarcerated without sensitivity to their challenges. Often lacking family support systems to vouch for their disability or see that they receive the right care, these individuals are doomed to fall into a cycle of imprisonment that becomes harder to escape over time. Their low economic status may prevent them from posting bail once they have been detained, regardless of the severity of their crime. While it may be more beneficial for these individuals to be sent to special treatment facilities or mental hospitals, they are incarcerated with other offenders of more sound

mental health and may be mistreated without sensitivity to their disabilities. The recidivism, or tendency of individuals to reoffend after being convicted of a crime, of mentally ill or challenged people causes a draining of resources for the prison system and the government that funds it and neglects to work in the best interest of this overlooked population.

388 • Giving Foster Children a Stable Support System: Keeping Siblings Together

CATHERINE WALSER

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Children in foster homes have a hard time adjusting to a new living environment as well as life after they turn 18. One factor that can make the foster system even more difficult to thrive in is the splitting up of siblings. Research has shown that children do better in school and are less likely to be involved in crime when they have at least one of their siblings placed in the home with them. However, keeping kids together can be much harder than it seems. There are many factors that determine if siblings will be placed in the same home, including when they were admitted to the system, ages of the children, and the abilities of the foster parents. I plan to discuss options for new regulations and procedures that would increase this likelihood, such as monitoring homes with multiple children both in and out of foster care, and supplying the foster parents with more resources so that they can better take care of multiple children.

389 • Public Policy Challenges Surrounding American Veterans Suffering from Post-Traumatic Stress Disorder

CEARA GILMARTIN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

America has been at war for a large portion of our history. From World War I to the Iraq War, many men and women have devoted their lives to military service. Current policy regarding Veterans Affairs needs to be improved so that American veterans are receiving the benefits they deserve. Post-Traumatic Stress Disorder (PTSD) is a common mental illness which affects veterans. Battle Fatigue, Irritable Heart, and Shell Shock have been names for PTSD in the past. Many veterans who have PTSD are not afforded the care that they deserve. 12,632 Iraq and Afghanistan veterans were diagnosed with PTSD in 2013 alone. The stigma around mental illnesses in America is already an issue, so veterans do not seek help because it is very difficult to receive any in a timely manner. Untreated PTSD can lead to the development of depression, suicidal behavior, homicidal tendencies, or unsafe situations for loved ones of the afflicted veterans. Some of the tragedies from untreated (or lack of regular treatment) can result in events such as the Fort Hood shooting in 2014, the murder of "American Sniper" Chris Kyle, and the shooting at the Fort Lauderdale airport this past year.

390 • Resolution in Veteran Social Issues and Affairs

CULLEN BRENNAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Issues that surround veterans and their families are quite serious and revolve around the well-being of the veterans themselves. Suicide is one of the largest issues that the veteran community faces. Related to suicide, another issue is the trauma faced by many returning veterans. Service members and their families endure this hardship because of the involvement in combat and stress filled, taxing experiences. The trauma raises the question of the mental health in the community and the amount of veterans that are coping. It seems that many use drugs to combat their issues, which leads to facing legal issues. Lastly, veterans seem to make up about ten percent of the nations homeless population. Due to healthcare being a primary issue, and more specifically, mental health being one of the biggest issues facing veterans, all healthcare options for veterans that need psychiatric and mental health doctors should be covered under federal healthcare, as well as an option to fund and facilitate private plans that cover mental health substance abuse. Many more implementations will be addressed in the article on the variety of issues that veteran's are now facing, as well as the challenges that follow the policies.

391 • Reintegration

DIANA GANIS

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The target population I will examine is formerly incarcerated men and women. These men and women often struggle to productively integrate into society as members with the capacity to earn sufficient income. This problem is serious, as disenfranchisement with society leads to recidivism. The failure to integrate formerly incarcerated men and women into society will keep ex-prisoners impoverished and disconnected. This phenomenon is a public problem because the high recidivism rate creates a tax burden. In New York State, for the fiscal year of 2010, the annual cost to keep one person incarcerated for a year was \$60,076 (Vera Institute of Justice, 2012). There are additional costs associated with the judicial system including the cost of public defenders. To mitigate recidivism and therefore the tax burden, the public must accrue the burden of assisting formerly incarcerated men and women with re-integration into society. Lastly, prisoners have the potential to become productive members of society upon release. Guiding ex-prisoners towards bettering society and lifting them from poverty is a moral duty everyone owes to his or her society.

392 • Title I School Reform

ELLIOT TOLKIN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The American education system is severely flawed, with clear inequalities between public schools across the country. The main problem I will be addressing regarding the American Education System is under funded public schools, specifically Title I schools and there lowered graduation rates. Title I schools are considered poor enough by the

federal government to be eligible to receive federal funds. Commonly Title I schools are found in the inner cities across America. These under funded Title I schools and by extension their poor students are suffering. My target population, these so called Title I students, face many problems including poverty. One such way of escaping poverty is through a strong education. Thus by helping these Title I students we are effectively fighting to end poverty at the source. This is why we need to help Title I schools raise their graduation rates.

393 • The Mentally Disabled and the Prison-Industrial Complex

FRIAS ANABEL

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The United States Department of Justice has been notorious for depriving mentally disabled prisoners rehabilitative services to focus on incapacitation and retribution that appease voters. Prison privatization has caused further maltreatment of mentally disabled inmates for many reason. Private prisons play a major role in the marketplace and aim to make a profit at any cost, which requires them to have prisoners inhabiting their facilities at all times. Many times the target population for prisoners-for-profit are poor mentally disabled people who have little representation and are seen is a nuance to society. When deciding to minimize cost prisons, private or government- funded, eliminate fundamental services that aim to aid the mentally disabled. When mental health services must be provided, they are usually lackluster or limitedly available. My goal is to determine three potential policies that could divert this targeted group away from the prison-industrial complex and towards receiving the services they need to eventually re-entry society productively.

394 • Low Income Families

GEOFFREY MOORE

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

A major problem in the United States right now is the state of American health care. Even with the Affordable Care Act, which was signed into law by former President Obama in 2010, the state of American health care is still troubling. My target population, which is currently suffering the most from America's poor health care system is the 30 million low income Americans that are uninsured which represents 10% of the U.S. population. The main reasons these low income people are uninsured is because there is no ideal healthcare coverage plan that is available to them. Medicaid is a government social welfare program that covers low income families, but unfortunately many low income families don't qualify for medicaid. Obamacare offers health coverage to these low income families, through purchasing private insurance that is subsidized by the government to be made more affordable. There is a mandate that taxes the uninsured to encourage buying Obamacare, but many low income families find it more economical for them to pay the penalty than to purchase Obamacare. These low income families are not poor enough for medicaid but are left without a feasible option for purchasing health care. A solution is needed to bring coverage to these low income families.

 Promotes sustainability

395 • Unemployment and

Transportation

GNIRE KONE

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

In December, the number of unemployed persons increased by 632,000 to 11.1 million and the unemployment rate rose to 7.3 percent. Since the start of the recession in December 2007, the number of unemployed persons has grown by 3.6 million, and the unemployment rate has risen by 2.3 percentage points. The number of long-term unemployed (those jobless for 27 weeks or more) rose to 2.6 million in December and was up by 1.3 million in 2008. However, today the unemployment rate is just 4.8 well below the natural unemployment rate (Figure 1). Yet, many people are still unemployment, many reason are because of forces out of their control, for example many of those in the auto industry lost their jobs due to technological advances (automation) as well as corporations moving factories to other countries such as Mexico for cheap labor. Another reason that job lose occurs, is because of the demand of employers wanting workers with more experience and higher education levels. This poses a problem of people being unable to enter the work force again. In my opinion the unemployed are a group of people that need reform and additional welfare policies. The unemployed, low income in the top 3 populated states, New York, California, and Illinois are often told to "buckle down" and "lift themselves by their bootstraps." These statements undermine the difficulty that unemployed people go through and additional social welfare policies will allow the unemployed to have a better quality of life.

396 • Mentally Ill Homeless, American Social Welfare Policy

HANNAH KNAB

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The target population of this poster is the mentally ill homeless; they are often overlooked by American policy makers and suffer from serious debilitating mental illnesses, such as schizophrenia or bipolar disorder. The mentally ill homeless face a number of issues: they are at higher risk of being beaten, robbed, threatened with a weapon, injured, and sexually assaulted. Additionally, there quality of life is lower than the mentally stable homeless person, and they are at higher risk of death (Torrey, 2013). Through this poster I shall bring up policies that would be solutions for these problems, look at what the American welfare system is currently doing to help the mentally homeless, and discuss how to improve on these existing policies.

397 • Foster System Policy Changes in US

HILDA GOMEZ

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Foster children are the responsibility of the government. These children are displaced from homes that were not able to provide sufficient care to sustain a healthy development for these children. Now under the care of the US

government, these children are entitled to a satisfying home environment. With this responsibility that the government has taken on, there should be thoughtful evaluation of foster parents and homes. These past insufficient evolutions have left an alarming amount of children to be victims of abuse, inadequate care and other cases that may hinder their development. There are statistics that report children in foster care not measuring up to their counterparts outside the system whether academically, financially or economically. For example, only about 10% of foster youth graduate from college. In comparison about 60% of people who start college graduate from college nationally. These statistics call for a change to the foster care system.

398 • Reducing Childhood

Obesity

HYESUN YI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The goal of this policy is to help facilitate better nutrition amongst individuals living in poverty, particularly children, to decrease the rate of obesity. In the United States, the National Center for Children in Poverty estimated that 15-16 million children live at or below the poverty line. They represent 23.3% of the total population and 33.3% of the population living below the poverty line. A study published by the US National Library of Medicine showed counties with poverty rates exceeding 35% have 1.45 times higher rates of childhood obesity. In the long term, children with obesity are predisposed to diabetes II, respiratory issues, cardiovascular issues, and orthopedic issues. Obesity also affects childhood confidence, stress, and may leads to decreased academic performance. Some may argue that these health issues are personal. However, there are nationwide economic effects as well. The Harvard School of Public Health reports obese individuals spend 42% more on healthcare than those who are not obese. The cost of obesity related complications have varied findings, but is estimated to be 20% of medical costs in the United States, upwards of \$190.2 billion per year. Given these economic and social effects, continued dialogue on improving nutrition is important.

399 • Veterans & Post Traumatic Stress Disorder

IAN STEWART

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The United States has roughly 21.8 million veterans of the armed forces. This is a huge percentage of the total population and they are an important part of our society. A large majority of veterans suffer from different issues such as mental disorders or physical problems. One of the worst ailments afflicting veterans is Post Traumatic Stress Disorder. It is estimated that about 30% of Vietnam veterans, 12% of Gulf War veterans, and between 11- 20% of the second Iraq War veterans suffer from PTSD or have at one point in their life.

400 • Additional Effort Required: Working Towards Education Equity in Secondary Schools

JASMINE CUI

WITHDRAWN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 From the SAT & the ACT to International Baccalaureate (IB) exams & Advanced Placement (AP) testing, standardized tests have become the standard bearers in terms of measuring a student's academic proficiency. Moreover, in many institutions standardized tests are often utilized when determining class placements. In other words, test results, in many cases, determine the trajectory of a student's academic career. When it comes to these tests, the "playing field," so to speak, is not level for individuals with LDs & appropriate accommodations (e.g. extended time, separate test location, etc.) must be administered to compensate for any deficiencies; however, accommodations are typically granted only with extensive documentation – something which few find themselves able to afford or obtain. When students are misplaced in classes the effects are multifarious and resonant, often having a demonstrable, negative impact on student outcomes, affecting college prospects & compromising postsecondary readiness. Clearly, the stakes are high. This study assesses deficiencies in special needs education concerning standardized testing for students ages 14-18 (secondary school) with ADD/ADHD and poses possible solutions, specifically, increased coordination between "in-house" disability coordinators and test providers such as the Collegeboard and the Educational Testing Service.

401 • Treatment of Opiate Addiction as Social Welfare Policy ☞

JOHN SULLIVAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 The Center for Disease Control has described the current state of opiate addiction as an epidemic. The rise in addiction and addiction related deaths in the past decade have had socio-economic effects that reverberate throughout all strata of American society. I will look at the relationships between economic and education levels and their relationship with opiate addiction as well as current treatment services offered by the government. My project will explore the primary causes of opiate addiction in America as well as offering three policy proposals to help curb the rate of addiction and addiction-related issues.

402 • Special Education Welfare Services in the Education System ☞

KRISTEN RASQUIN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 Within the education system it is critical for all students to receive access to the same opportunities and benefits that an education can afford to them. Children with disabilities require the same, if not more, guidance from the education system. However, sometimes it is difficult to overcome certain aspects in the education system in order to grow and improve their overall educational opportunities. There are many problems that a child with special needs may face while in the education system. Some specific problems these children are facing include a lack of parental participation, defining the standards necessary for children with disabilities, and the children's performance levels in the classroom. These problems need to be addressed properly in

order to ensure the highest levels of care of children among the education system. Therefore, children with special needs in the education system are among the target population for receiving necessary social welfare benefits. This project will work to address the possible welfare benefits that can be made available to these students.

403 • Assisting the Homeless Population ☞

LAUREN GIANTELLI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 The targeted population of interest is the homeless population. The National Health Care for the Homeless Council defines homelessness as "an individual who lacks housing, including an individual whose primary residence during the night is a supervised public or private facility that provides temporary living accommodations, and an individual who is a resident in transitional housing. A homeless person is an individual without permanent housing who may live on the streets; stay in a shelter, mission, single room occupancy facilities, abandoned building or vehicle; or in any other unstable or non-permanent situation [Section 330 of the Public Health Service Act (42 U.S.C., 254b)]. As of November 2016 there was a reported 62,840 homeless people in New York City alone, 15,899 homeless families with 24,251 homeless children. Research shows that some of the many causes of homelessness include; the lack of affordable housing, eviction, job loss, and dangerous housing conditions. Permanent policies need to be put in place to improve the welfare system in order prevent homelessness.

404 • Rural Education Reform ☞

MADELINE STOKLOSA

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 Whenever education reform is discussed, many automatically think of the failing inner city schools and the multiple problems they endure to produce quality students. Schools in rural areas do not even cross their minds, but the students from these rural schools are arguably worse off than those who attend urban ones. Rural and urban education approaches must vary to meet the needs of the post-graduation job market in their respective geographic locations. Since there is no single, magical solution to education reform, there are several avenues that should be explored to curb the problems America's educators face within rural areas. Rural education reform can be achieved through a combination of quality teachers, distance education, and a 4-day school week. The target population for these policy proposals are primary and secondary school age children and their parents who live in impoverished rural communities and attend rural public schools.

405 • American Social Welfare Policy: Long-Term Unemployment ☞

MELISSA WHYMAN

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 According to the Bureau of Labor Statistics, the survey of the current population for January 2017

shows that 4.8% of Americans began the new year unemployed. This percentage consists of individuals who are unemployed through no fault of their own, who have enough work hours and wages covered in previous employment, and are currently employable and actively seeking new work, defining them as unemployed. Social policies are in place for those who are eligible to receive unemployment benefits from government welfare programs, such as unemployment insurance in New York State and federal Social Security, which contains provisions for UI. However, within this population of individuals, are those who have been unemployed for 27 weeks or more, falling into the category of long-term unemployment, while most unemployment benefits are designed to shelter individuals against distress for only a short period of time. By further exploring the causes and effects of long-term unemployment, and the already existing policies, social welfare policies can be better proposed and implemented to address the issues and concerns of not only the target population (the long-term unemployed), but the remaining population of the unemployed as well.

406 • Veterans Access to Health Care and VA Hospitals ☞

PATRICK CALDARELLI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 In the United States there are nearly one million veterans with injuries and psychological issues they receive serving their country. The Wounded Warrior Project, calculates as of Jan. 1st, 2017, that there are 52,000 wounded veterans, 400,000 veterans with PTSD, and another 320,000 with a brain injury. These men and women bravely served this country and became injured as a result. It is the duty of the U.S. government to provide our veterans with appropriate health care. For many veterans it is difficult to obtain access to health care and for others the quality of the health care is poor. In an effort to provide healthcare to military personnel the government created the Department of Veterans Affairs, which included hospitals and facilities specifically for vets. Funding for the VA and its facilities comes from the taxpayers and the issue of aiding our veterans is rarely controversial. Both parties support the veterans and are engaged in ensuring they get the medical treatment they deserve. Challenges for improving the accessibility and quality of the care, are mainly finding the most efficient way of expanding the availability of healthcare and how to ensure veterans receive the best care possible.

407 • Comprehensive Reproductive Healthcare Access in Poor Rural Areas ☞

RACHEL CRAIG

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS
 Impoverish rural women lack agency in their reproductive healthcare choices. State-level cuts and restrictions have caused poor women in rural, isolated areas to be unable to regularly receive proper reproductive healthcare. There are few facilities in these areas that are able to provide safe, reliable, and truthful healthcare options. A lack of funding has been caused by a lack of governmental support and a fierce movement to

limit a women's access to reproductive healthcare, including abortion. When women are not in control of their reproductive healthcare, their well-being is threatened and society as a whole suffers. The United Nations declared the right to an abortion a human right along with the ability to plan and regulate your family. The bulk of the burden of family planning falls upon women in our society. For a poor woman in the United States, having another child could mean financially drowning especially if it is a single-income home or for a single mother. A woman in control of her body is in control of her future. Without access to clinics, women and families suffer.

408 • Policy Suggestions for Urban High School Dropout Rates

SAMANTHA PAWLICKI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

The urban/inner city students of the public school systems are at a higher risk of dropping out than any public school setting in the United States. For example, in Rochester New York, the inner city public schools had a 46 percent four year graduation rate, meaning, that 46 percent of all the students that enrolled in 9th grade graduated with their high school diplomas. Students are part of system that isn't created for their success. Factors shown to be associated with increased likelihood of school dropout include low self-esteem, frequent confrontation and non acceptance by teachers and peers, poor school attendance, unstable family life, pregnancy, substance abuse, and history of disruptive behavior. 69% of the dropouts claimed that adults did not expect them to perform well, and that these low expectations contributed to their decision to drop out. There needs to be change in how we as a nation address the issue of inner city/urban school system dropout rates. This presentation will highlight some possible reforms that could be implemented.

409 • Special Education in Urban Schools

STEPHANIE RESILA

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

This poster presentation is looking at the development of students in elementary and middle school who qualify for special education in an urban school setting. There are both inside and outside factors that may affect these students' progress in school and all aspects of their development. The programs and support children receive at this stage in their life could possibly set the ground work for the rest of their lives. That is why I am developing a public policy to develop reform in the urban school districts.

410 • Give our Elders the Care they Need

STEPHEN SHIMSHI

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

An estimated one in three seniors die of old age diseases such as dementia and Alzheimer's making it the sixth leading cause of death in the United States outnumbering the combined number of fatalities resulting from breast and prostate cancer. Such illnesses put immense strains on the

individuals as well as their families and loved ones. To ease the pain of the patient as well as the strain on their caretaker and family, we must give our greatest teachers the care they desire and deserve. Many of the people suffering from such diseases are our grandparents and parents; those who worked, raised children, and made this world a better place. It is time that we serve to them, in their darkest hour, what is owed to them for nurturing us. I propose that welfare policies are created to supply elders living with dementia or Alzheimer's disease with live in care so that they can spend the remainder of their days in the comfort of their own homes and surrounded by those who love them.

411 • The Rise of Heroin in the United States

TIMOTHY PREZLOCK

FACULTY SPONSOR: EUNJU KANG, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

From coast to coast, heroin is devastating communities and overwhelming the healthcare system. In 2015 alone, 591,000 people had a substance use disorder involving heroin and over 12,000 died of overdoses. This Presentation intends to evaluate why heroin has seen such a dramatic increase in use, while also focusing on those who have been affected. In addition, several policy initiatives that can curb this epidemic will be introduced and analyzed.

412 • Tracking Change in Occupational Backgrounds of Congress, and Its Effect on Inequality

ANTHONY SERIANNI

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Over time, the occupational composition of Congress has changed. Since the 1950s, the proportion of lawyers and farmers in Congress have decreased, while the proportion of businesspeople have increased. At the same time, income inequality between the top 1% and bottom 20% of earners have increased dramatically. I hypothesize that changes in income inequality are related to the change in Congress, and the occupational backgrounds of representatives in government. With more businesspeople representing the American people in Congress, legislative policy has changed to become one of the most pro-business governments since the Gilded Age.

413 • The Mass Incarceration of America's Poor

KATHLEEN SHARP

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Economic inequality was forced into the spotlight during the 2016 election cycle through the rhetoric of both Democrats and Republicans. However, this inequality carries greater implications throughout American life than redistribution and tax policies. The idea of disproportional incarceration rates in America, based on race and gender, is not a new one in the realm of sociology and political science. Nevertheless, we must consider disproportional incarceration due to economic class. The environment within urban, impoverished areas of

the United States has been known to churn out criminals, due to numerous obstacles -- not starting or ending with an education system far below standard of that which one would find in affluent neighborhoods. These obstacles make the lack of opportunity for upward economic mobility more than obvious to the individuals within these neighborhoods, making the decision to turn to crime as a way to survive that much simpler. When these people are caught by law enforcement, they find themselves with higher sentencing rates than individuals of a higher economic class who may have committed the same crime. The individuals who are disproportionately prosecuted effectively diminish the low-income voter population, making it easier for legislators to ignore the concerns of low-income families.

436 • Economic Inequality in America: Effects and Solutions

NATHAN WAGNER

FACULTY SPONSOR: JEFFREY KOCH, POLITICAL SCIENCE & INTERNATIONAL RELATIONS

Economic inequality in America has been growing rapidly, especially in the late 20th century and into the 21st century. The majority of the American people are not among those seeing gains in wealth and income. Increased strain on the middle and working class is becoming detrimental to our society as a whole. This presentation will help illustrate the problems faced by a majority of Americans due to their economic status and will seek to offer possible solutions to remedy the intense inequality in America.

PSYCHOLOGY

414 • Personality Predicts Environmentally Friendly Behaviors: The Relationship of Egoism and Personal Distress

JOANNA PALM

FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY
Research shows that people display both altruistic and egoistic motivations for environmentally friendly behaviors. We tested how personality characteristics might influence egoistic motivations for this behavior. Results showed that egoistic individuals were environmentally friendly only if low in the trait of personal distress.

415 • The Influence of Altruism and Environmental Values on Environmentally Friendly Attitudes

JENNIFER MAZZOLA, MARGARET DORFNER, MATTHEW HEATON, CHLOE OKTAY, JOANNA PALM, ELIZABETH SULLIVAN, GERENA TAN

FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY
Recent research indicates that altruistic personality characteristics, such as perspective taking, predict some portion of pro-environmental attitudes. However, it is less clear how these personality characteristics might interact with other factors, particularly environmental values. We hypothesized that perspective taking and environmental values would interact. Specifically, we expected that perspective taking would predict pro-environmental attitudes only among individuals with weak environmental values. The basis for this hypothesis

was that individuals with strong environmental values would already have pro-environmental attitudes, and therefore altruistic personality characteristics such as perspective taking should matter very little. However, individuals with weak environmental values would not be positively inclined toward protecting the environment unless they also possessed a specific motivation to do so, such as the altruistic personality trait of perspective taking. Results confirmed predictions by indicating a perspective taking by environmental values interaction whose pattern matched our hypothesis.

416 • Altruistic Personality as a Predictor of Environmentally Responsible Behaviors and Attitudes

MATTHEW HEATON, JENNIFER MAZZOLA, MARGARET DORFNER, ELIZABETH SULLIVAN, JOANNA PALM, GERENA TAN, CHLOE OKTAY
FACULTY SPONSOR: JIM ALLEN, PSYCHOLOGY

Some research suggests that altruistic personality characteristics are positively related to environmentally responsible attitudes and behaviors. However, relatively little research has directly compared altruistic and egoistic personality characteristics as predictors of environmental responsibility. In addition, it is difficult to determine whether these variables are causally related because of the necessary correlational nature of these constructs. For instance, environmental values might produce a coincidental relation between altruistic personality characteristics and environmentally responsible behaviors. Specifically, these values might induce feelings of altruism and environmental responsibility. The present research addressed these problems in the literature by examining the association between the altruistic personality characteristics of empathic concern and environmentally responsible behavior after controlling for both egoistic personality characteristics and environmental values. Results indicated that empathic concern predicted even after controlling for these variables. These results suggest two conclusions: 1) altruistic personality characteristics predict environmentally responsible behaviors independently of egoistic personality characteristics; 2) the altruism/environmentally responsible behavior relation may be causal, as environmental values, a prominent potential confound, does not appear to explain the relationship. *Selected for presentation at Association for Psychological Science, Boston, MA.*

417 • The Influence of Economic and Regulatory Freedoms on Well-being

MARGARET DORFNER, MATTHEW HEATON

FACULTY SPONSOR: JAMES ALLEN, PSYCHOLOGY
This study used state rankings of economic and regulatory freedoms generated by the conservative Cato Institute to predict measures of state level well-being in the United States. These rankings reflect Cato's position that free market capitalism and its relatively weak regulatory environment is an optimal way to organize a culture and an economy. Our results did not support the Cato Institute's assumption that free markets promote well-being. In general, states that Cato lauded as having high levels of economic and regulatory freedom had lower levels of well-being. For example, Cato's measures of freedom predicted higher state level suicide rates and

greater prevalence of mental illnesses. These results are consistent with other research indicating that economic policies emphasizing free market ideologies and corporate capitalism are associated with lower levels of well-being. Methodological issues and potential theoretical connections between these variables are discussed.

418 • The Efficacy of Animal-Assisted Interventions on Reducing Anxiety in Children

MARGARET DORFNER

FACULTY SPONSOR: MICHAEL LYNCH, PSYCHOLOGY

This research examined how animal-assisted interventions affects anxiety in children undergoing a mildly stressful mathematical task. It was hypothesized that those who interacted with the therapy dog would experience less anxiety and a faster recovery rate compared to the control group. As a result of the lower anxiety and faster recovery, those interacting with the therapy dog would have a higher accuracy rate on the mathematical challenge and would experience a lower pulse rate immediately following the task. Participants were required to fill out a modified version of the State-Trait Anxiety Inventory before and after the mathematical task to measure the change in self-reported anxiety. The participants had their pulse rate measured before the task and two times following the task to measure the physiological change. Following these pre-task measures, participants either interacted with a therapy dog or a stuffed dog before completing the mathematical challenge. Results showed that those in the experimental group experienced an increase in physical arousal during the mathematical task, a decrease in self-reported anxiety, and a trend toward greater physiological recovery. The results of this study provide further evidence for the growing body of research showing that animal-assisted interventions are a beneficial therapeutic tool.

419 • Perfectionism as a Moderator of the Relationship Between Mental Health and Changes in Blood Oxygenation Across the Dorsolateral Prefrontal Cortex

LIAM MCMAHON, KADIN FAWCETT, ZARMEEN ZAHID, TIFFANY LUI, TORI SIMPSON, LAURA DOLAN, BRAEDEN SHARER, CAROLINE O'BRIEN

FACULTY SPONSOR: MICHAEL LYNCH, PSYCHOLOGY

This study examined the impact of pre-existing symptomatology and styles of perfectionism on blood oxygenation in the dorsolateral prefrontal cortex (DLPFC). The sample consisted of 296 undergraduates. Participants completed cognitive tasks consisting of a card sort trial and two distinct anagram solving sections. Activity in the DLPFC was monitored through the use of functional near infrared (fNIR) spectroscopy for the duration of two cognitive tasks. Next, participants completed a questionnaire assessing various indicators and strategies related to perfectionism and mental health. Cluster analysis of the self-report data was used to identify and validate four distinct profiles of perfectionism. Additionally, a median split was

performed for depression, bulimia, and anorexia to create higher and lower symptomatology groups. A repeated measures ANOVA revealed three-way interactions among perfectionistic profile, mental health, and DLPFC region in predicting changes in blood oxygenation. These findings suggest that individuals with a specific combination of perfectionistic profiles and mental health symptomatology will have a distinct pattern of blood oxygenation compared to individuals with other profiles of perfectionism and symptomatology.

420 • The Impact of Cognitive Performance and Perfectionism on Changes in Blood Oxygenation Across the Dorsolateral Prefrontal Cortex

ZARMEEN ZAHID, KADIN FAWCETT, LIAM MCMAHON, TIFFANY LUI, TORI SIMPSON, LAURA DOLAN, BRAEDEN SHARER, CAROLINE O'BRIEN

FACULTY SPONSOR: MICHAEL LYNCH, PSYCHOLOGY

Perfectionism and cognitive performance were assessed to predict activity in blood oxygenation across the dorsolateral prefrontal cortex (DLPFC) during various anagram tasks. The sample consisted of 296 undergraduates. Activity in the DLPFC during the anagram tasks was monitored through the use of functional near infrared (fNIR) spectroscopy. There were two categories of anagram tasks, event-related and homogeneous. The event-related anagram task consisted of anagrams that alternated between 3, 4, and 5 letters. Participants were presented the anagram for 2 seconds and had 13 seconds to solve the anagram. The homogeneous anagram task consisted of three trials: 3, 4, and 5 letter anagrams. For each trial, participants had 1.5 minutes to complete as many anagrams as possible with the option of skipping anagrams by pressing the space bar otherwise the slide advanced automatically after 15 seconds. Participants then completed a questionnaire assessing various behaviors, cognitions, and emotion regulation strategies related to perfectionism. Cluster analysis of the self-report data was used to identify and validate four distinct profiles of perfectionism. Results revealed that unique patterns of activity across the DL-PFC were associated with either performance or perfectionism, depending on the nature of the anagram task.

421 • Perceptions of Unintended Adolescent Pregnancy: Associations with Neoliberal Beliefs and Contraceptive Problems

CAROLINE O'BRIEN

FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY

The purpose of this study was to explore perceptions of unintended adolescent pregnancy as associated with level of neoliberal beliefs and type of contraceptive problem. Northeastern U.S. undergraduate college students (N = 72) completed a measure of neoliberal beliefs and were randomly assigned to read about a couple that became pregnant after contraceptive non-adherence or a contraceptive accident. As expected, observers with greater neoliberal beliefs perceived an unintended adolescent pregnancy as more controllable than those with lesser neoliberal beliefs. Additionally, a pregnancy following

a contraceptive accident was perceived as less controllable and elicited more sympathy than a pregnancy following contraceptive non-adherence. These findings suggest perceptions of unintended adolescent pregnancy are both context-dependent and related to the observer's level of neoliberal beliefs. This knowledge can be applied to promote the well-being of pregnant and parenting adolescents in social service, clinical and school settings. Educators and providers might use this information to improve their attitudes toward pregnant adolescents, allowing for better and more effective care.

422 • Perceptions of Motives for Contraceptive Sabotage: Patterns of Gender Difference and Similarity

COLLEEN BURTH, RACHEL HERSHEY
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY
Contraceptive sabotage (CS) occurs when partners directly interfere with effective contraceptive use. Perceived motives for CS warrant empirical study. We hypothesized that common barriers to condom use might also be perceived as motives for CS. In addition, we explored potential gender differences in perceptions of these motives. Undergraduates with prior vaginal sex experience (N = 334) read a hypothetical vaginal sex scenario depicting CS in order to rate the degree to which different barriers to condom use may have motivated this behavior. Results showed that all participants perceived that CS was motivated by intent to enhance male pleasure. Compared to women, men more strongly perceived CS occurred because the female partner was using another type of birth control and because the male partner preferred not to discuss condoms. Compared to men, women more strongly perceived CS occurred because the female partner was faithful and because the male partner felt using condoms was difficult. Interventions geared toward preventing CS should emphasize that even behaviors motivated by benign intent may yield negative sexual and reproductive health consequences.

423 • Income, Material Hardship, and Clinically Elevated Prenatal Anxiety

JILLIAN LAROSE, CLARE EDGINGTON
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY
Although poverty is an established factor of poorer prenatal mental health, limited research has examined the mental health effects of material hardship (i.e., difficulties meeting basic needs such as food, transportation, or stable housing) during pregnancy. The current research examined the potential independent and overlapping effects of income and material hardship as factors of prenatal anxiety. Pregnant women (N = 892) responded to self-report measures of mental health symptoms, yearly household income, and current material hardship in the waiting area of urban community-based obstetrics/gynecological practices. About 17% reported clinically meaningful anxiety. Clinically meaningful anxiety was predicted by both lower income and greater material hardship, even after controlling for demographic variables including age, race/ethnicity, relationship status, and number of children in the home. Material hardship partially mediated the effect of income on elevated mental

health symptoms. These results converge with the broader literature focused on the social determinants of physical and mental health.

424 • Amnestic Heterosexism and Bystander Responses to Anti-Gay Bullying

TESS RAMOS-DRIES, MARISA MOTISI
FACULTY SPONSOR: JENNIFER KATZ, PSYCHOLOGY
DILLON FEDERICCI, LGBTQ PROGRAMS AND SERVICES
Amnestic heterosexism (AH) refers to the belief that, in contemporary society, discrimination based on sexual orientation no longer occurs. We investigated individuals' AH beliefs as related to their responses to anti-gay bullying. Heterosexual undergraduates (N = 238) completed a measure of AH beliefs and then responded to a scenario in which a man accuses another man of being a "fag." As expected, AH beliefs were associated with less perceived severity/danger for the target of bullying, less personal responsibility to intervene, and more blame toward the target of bullying. In multivariate analyses, AH beliefs were indirectly associated with less intent to confront the perpetrator via a path of reduced personal responsibility to intervene. These findings suggest that beliefs about the existence of discrimination based on sexual orientation reduce personal responsibility to address anti-gay bullying. In turn, personal responsibility negatively predicts intent to confront those who perpetrate such behaviors.

425 • Effects of Noise, Task Type and Anxiety on Attentional Performance

ALEXIS KIDDER, GABRIEL BIRKBY
FACULTY SPONSOR: JOAN BALLARD, PSYCHOLOGY
Previous research has been inconclusive thus far regarding the relationship between noise type, noise volume level, anxiety, task type, and attention performance. The purpose of the present study was to explore the relationship between noise, task, attention and anxiety. In addition, this study used a standardized task and reliable volume measurement to address past inconsistencies in research. Subjects performed two consecutive two-back identical pairs tasks; one with letters and one with shapes. During task performance, participants were exposed to white and intermittent noise at two different volumes. We expected that performance would be best in the intermittent noise condition at 70dB for those with low levels of anxiety.

426 • The Role of Faculty in the College Adjustment and Retention of Racial/Ethnic and Sexual Minorities

GAVIN RAFFLOER, YVETTE WILLIAMS, ERICA KANE, DINETRA GOWDIE, LESLIE TETTEH
FACULTY SPONSOR: MONICA SCHNEIDER, PSYCHOLOGY
This study examined factors contributing to students' perceptions of faculty support and their implications on the college adjustment of underrepresented students. We asked both racial/ethnic and sexual majority and minority students to identify which faculty behaviors influenced their perceptions of

support the most, and to report their experiences with those factors. Lastly, we examined how these experiences predicted their academic self-efficacy, academic adjustment to college, their attachment to the institution, and their intentions to graduate. Participants completed a survey assessing 1) demographics, 2) measures of perceived faculty support, 3) measures of how important various factors were to their perceptions of faculty support, 4) their experiences with those factors, and 5) their college adjustment, attachment to the institution, and intention to graduate. Results indicated that there were certain behaviors that were considered most important for all students (e.g., believing in students' potential). However, there were differences between majority and minority students in the support factors considered important, as well as the support factors experienced in their interactions with faculty. All students who experienced both the interpersonal support factors as well as the diversity support factors with faculty had greater efficacy, academic adjustment, and attachment to the institution. *Selected for presentation at Association for Psychological Science, Boston, MA.*

427 • How Peer Support is Related to the College Adjustment and Retention of Racial/Ethnic and Sexual Minority Students

GAVIN RAFFLOER, YVETTE WILLIAMS, ERICA KANE, DINETRA GOWDIE, LESLIE TETTEH
FACULTY SPONSOR: MONICA SCHNEIDER, PSYCHOLOGY
This study examined factors contributing to students' perceptions of peer support and their implications on the college adjustment of underrepresented students. We asked both racial/ethnic and sexual majority and minority students to identify which peer behaviors influenced their perceptions of support the most, and to report their experiences with those factors. Lastly, we examined how these experiences predicted their social self-efficacy, personal/emotional adjustment to college, and institutional attachment. Participants completed a survey assessing 1) demographics, 2) perceived peer support, 3) how important various factors contributed to their perceptions of peer support, 4) their experiences with those factors, and 5) their college adjustment and institutional attachment. Results indicated that certain peer behaviors were considered most important for all students (e.g. acting in a friendly and welcoming manner), with few differences between majority and minority students. Differences between majority and minority group members in their experiences with important peer support factors emerged, with minority students experiencing several important factors less frequently than majority students (e.g. willing to welcome me into their friendship groups). Differences between majority and minority students emerged regarding how their experiences with peer support were related to their personal-emotional adjustment and institutional attachment. *Selected for presentation at Association for Psychological Science, Boston, MA.*

428 • The Effects of Media Genre on Sexual Harassment Judgements

MONICA PACK
FACULTY SPONSOR: STEVEN KIRSH, PSYCHOLOGY

The purpose of this study was to examine the effects of media on attitudes towards gender stereotypes and judgments of sexual harassment. Participants watched video clips of sexual harassment portrayed in the context of either a drama or comedy and then made judgments related to (1) gender stereotypes and (2) sexual harassment involving teachers and students. Results found that participants rated shyness to be a more feminine characteristic after viewing comedic clips and childlike behavior to be a more masculine characteristic after dramatic clips. In addition, the results of the sexual harassment scenarios indicated that male participants and participants viewing dramatic clips were more likely than others to view the female victims of sexual harassment as being responsible for the perpetrators' behavior. These findings suggest that the context in which sexual harassment is portrayed may differentially impact attitudes towards gender stereotypes and judgments of sexual harassment in real life. Additional implications of these findings and direction for future research will be discussed.

429 • Effects of the Glutamatergic Drugs MK801 and CDPBB on the Development of Myelination in the Mouse Hippocampus

HARRIET DESOUZA, TYLER BELL

FACULTY SPONSOR: VINCENT MARKOWSKI, PSYCHOLOGY

Dizocilpine (MK801) is a noncompetitive inhibitor of the N-methyl-D-aspartate (NMDA) receptor, a receptor linked to a channel that allows the passage of the excitatory neurotransmitter glutamate. Binding of MK801 to this receptor inhibits the passage of glutamate through the receptor, preventing excitation of the associated neurons. In mice this drug has been commonly used as a model for both the positive and negative symptoms of neuropsychiatric disorder, schizophrenia. Previously, our lab examined operant behavior in a group of mice that were treated with MK801 as neonates and later with a "rescue" drug, CDPBB. CDPBB is a positive allosteric modulator for metabotropic glutamate receptors and is hypothesized to interact with the NMDA receptor in a similar fashion to its normal substrate, so as to overcome the inhibitory effects of MK801. In the current experiment, we examined the brains of the adult mice after they completed the operant testing. Brains were extracted, sectioned with a cryostat, stained with myelin-specific Luxol-Fast Blue, counterstained with cresyl violet, and the stain intensity was examined microscopically. Preliminary data analysis from this work in progress suggests that the drug treatments manipulated myelination in the hippocampus, a brain structure critical for memory and cognition.

430 • Effects of the Glutamatergic Drugs MK801 and CDPBB on the Development of Social Behaviors in a Mouse Model of Schizophrenia

MEGAN EHMANN, AMANDA HODGE, MADISON WEISS, JENNIFER MAZZOLA, SARA FARNSWORTH, AARON FIDURKO, ASHLEY MELGAR, KYLE URBAN

FACULTY SPONSOR: VINCENT MARKOWSKI, PSYCHOLOGY

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 CDPBB, 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 CDPBB or saline during their juvenile period. After mice reached adulthood, they were examined with the 5-trial social memory test. During the first four trials of this procedure, the test mouse was exposed to the same stranger mouse in its home cage. During the fifth trial, a novel stranger was placed in the home cage. Mice with intact social memory were expected to show diminishing exploration of the initial stranger in trials 2-4, followed by increased exploration of the novel stranger in the fifth trial. Preliminary results from this work in progress indicate that MK-801 impaired social memory, an effect that was partially reversed by CDPBB.

431 • Attentional Breadth and Trade-Offs in Spatial and Temporal Acuity

ASHLEY EDWARDS

FACULTY SPONSOR: JEFFREY MOUNTS, PSYCHOLOGY

Focused visual attention is typically associated with enhanced visual processing. However, recent work suggests that attention improves spatial acuity but diminishes temporal acuity. Here we examine whether the effect that the breadth of the attentional has on spatial and temporal processing. We manipulated attentional breadth with exogenous (involuntary) cues. We found that narrowing the attentional focus led to improvements in spatial processing and decrements in temporal processing. *Selected for presentation at Council of Public Liberal Arts Colleges Northeast Regional Undergraduate Research, Scholarly and Creative Activity Conference, North Adams, MA.*

432 • The Effects of Endogenous Attention on Spatial and Temporal Processing

ASHLEY EDWARDS, GAGE MATYASOVSKY, MEGAN HILLIS, ANTHONY NGUYEN

FACULTY SPONSOR: JEFFREY MOUNTS, PSYCHOLOGY

Focused visual attention is typically associated with enhanced visual processing. However, recent work suggests that attention improves spatial acuity but diminishes temporal acuity. Here we examine whether the breadth of the attentional focus manipulated with endogenous (volitional) cues has the same effects. In contrast to exogenous (involuntary) allocations of attention, the endogenous allocation of attention improves spatial resolution but does not affect temporal resolution.

433 • Safety or Threat?: The Role of Gender Inequality on Sexual Assault

SARA CROSSLEY, CAROLINE BUCHER, EMILY CAMACHO

FACULTY SPONSOR: CLAIRE GRAVELIN, PSYCHOLOGY

Using secondary data sets, we demonstrate that states within the United States that have the greatest amount of gender equality, coupled with a higher male-to-female sex ratio, also have the greatest amount of rapes reported. We present this data, as well as the preliminary results from an ongoing experimental investigation assessing two competing hypotheses to explain this finding. Specifically, given prior research on precarious manhood (e.g., Vandello et al., 2008), greater reports of sexual assaults in gender-equal states may indicate that in these environments men feel the greatest threats to their masculinity and therefore are more likely to sexually aggress to demonstrate and regain their power. An alternative explanation, however, is that in states in which men and women are relatively equal in power, women simply feel safer in reporting their victimization. Implications of these competing hypotheses and our findings will be discussed.

STUDY ABROAD

434 • You're Gonna Need a Better Software: Evaluating Morphological and Genetic Approaches Used to Identify Shark Fins for Global Conservation

COURTNEY KING

FACULTY SPONSOR: SAMUEL CARDAMONE, STUDY ABROAD

International bodies such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the International Convention on the Conservation of Migratory Species (CMS) have promoted the conservation of several shark species. However, there is evidence that shark fin traders are still exporting mislabeled and unidentified shark fins, including those from regulated species. Our team has found that iSharkFin, the software currently recommended for shark fin identification, is frequently inaccurate. Shark fin samples and photographs were collected from landing sites in Costa Rica, Chile and Peru. Genetic analysis of tissue samples was used to determine the fin species, and images of the same samples were analyzed in iSharkFin. This allowed us to determine the percentage of samples for which the software correctly identified the species. The software was designed to identify wet fins, and as predicted, frequently misidentified dry fins. However, wet fins of certain species, included those protected under CITES Appendix II, were also misidentified at high rates. Based on our research, we suggest improvements in the morphological identification of dry and wet fins to ensure that officers have the tools to identify the species involved in the international shark fin trade. *Selected for presentation at Joint Meeting of Ichthyologists and Herpetologists, Austin, TX.*

GREAT DAY MUSIC FESTIVAL

HUNT ROOM, MACVITTIE COLLEGE UNION

SESSION 1 • 8:30 – 11:10 AM

8:30 – 8:55 AM

“Riptide”, Vance Joy; *“Can’t Help Falling In Love”*, Twenty One Pilots; *“Light Up the Sky”*, Grace Vanderwaal

Solo Performance PATRICIA MCCASLAND
FACULTY SPONSOR: SUSAN SALMON, EDUCATION

9:05 – 9:25 AM

The Flute Choir at Geneseo

JACKIE PFALTZ, CATHERINE BLASZAK, ASHLEY MONTGOMERY, JULIA DIBERNARDO, MADELINE YOUSEY, DYLAN FICHERA, KATE COTTEN, GRACE BUECHNER, ARIANNA MILLER, CASSANDRA TABER, BRITTNAY SULLIVAN, SARAH MANDANAS

FACULTY SPONSOR: GLENNA DOVE-PELLITO, MUSIC

9:30 – 9:45 AM

Geneseo Low Brass Ensemble

“Achieved is the Glorious Work”, Franz Joseph Haydn; *“Sing Joyfully Unto God”*, William Byrd, arr. Timothy Snyder; *“Tiger Rag”*, Original Dixieland Jazz Band, arr. Jack Gale

TIMOTHY SNYDER, RACHEL GUINTEHER, ROBERT MARINO, MIRANDA FIERO, PATRICK SUTER
FACULTY SPONSOR: BEN DAVID ARONSON, MUSIC

9:55 – 11:10 AM ACAPELLA HOUR

Between the Lines

COLIN BUCKOWSKI, DESTINY PARSONS, EMILY HURLBUTT, EVAN BURR, GRETTA CAVATASSI, CAROL SANCHEZ, JUSTIN LEONTI, KALIL HENDEL, KEVIN PIERCE, MADISON MURPHY, MATT RAPOZA, MELISSA FRANK, QUILLE HUGHES, RYAN ZIPPER, TAYLER NGUYEN, TREVOR GRECO, VINNIE MECCARIELLO

Southside Boys

MATTHEW BURLEY, ALEXANDER KRAMER, BRETT HAMMES, MATT KEOUGH, KADIN FAWCETT, JACK GRANT, JORDAN BACHMANN, ZACH MCGARVEY, GRANT TAYLOR, GEORGE PERDOMO, DAN INFRANCO, ANDREW WEBER, JORDAN HECHT

Emmelodics

ALEX WEBBER, BARRY GRANT, BRIANNA BROOKS-MILLER, BRYCE GEBHARDT, CAITLEN EPPERSON, CLAIRE PRUNIER, DENIS HARTNETT, GAGE MATYASOVSKY, JACK MCALEVEY, JASON HANDY, JEN MELFI, JEREMY DAVIES, JONAH GOLDSTEIN, KAILA MCKIERNAN, KELLY KULAKOWSKI, MACKENZIE HINTZE, MEAGHAN BARRY, SAMUEL NICHOLS, SARAH MAPHEY, WILLIAM BLANDING

Exit 8

TOM VANGELLOW, MICHAEL MASETTA, SAIGE HORVATH, EMILIOS PAPAS, MADISON KEMLER, MATT CRAWFORD, SAMANTHA EBERSOLD, NINA LACOMBE, KATE KELLER, LAUREN THURBER, MADALYN BOWEN, ALLISON ALTSCHILLER, SEAN RYAN, DANIELLE KAHN, COLIN SUGRUE, MATT BURLEY, CHRIS MILLER, SARAH BISSELL, RYAN ANDREWS

COLLEGE UNION LOBBY 12:00 PM

Geneseo String Band

LEEANN BRUETSCH, BRIDGETTE SROKA, LINA CLIFFORD, TORI BARONE, MARC LATTANZI, MORGAN MCDONNELL, SARAH SPARKS-STEWART, SAMUEL SMITH, RUSSELL BRINKMAN, DAVID TERNER, HANNAH GARTY, STEVEN WILLIAMS, KAYLA SCHUM, JENELLE NYITRAI
FACULTY SPONSOR: JAMES KIMBALL, MUSIC

SESSION 2: 2:25 – 5:05PM

2:25 – 2:45PM

The String Theory

“String Trio in F Major, Op. 14, No. 1”, Boccherini, Luigi
MICHAEL MICHALKO, GABRIEL PONCE, STEVEN WILLIAMS
FACULTY SPONSOR: ED POGOZELSKI, PHYSICS & ASTRONOMY

2:50 – 3:05 PM

“Latch”, Sam Smith; *“Giving Up”*, Ingrid Michaelson; *“All I Want”*, Kodaline

SARAH BISSELL, MADI KEMLER
FACULTY SPONSOR: BELYAKOV-GOODMAN, ENGLISH

3:10 – 3:40 PM

Solo Performance NOAH WEISS

FACULTY SPONSOR: BILL TIBERIO, MUSIC

3:50 – 4:05 PM

Clarinet Choir

“Wind In The Reeds”, Gordon Jacob; *“A Study In Lavender”*, Eric Osterling

EMILY BUCKLEY-CRIST, JASON HANDY, JOSHUA GALLARO, ERIN HOGAN, LENA EVERS-HILLSTROM, ELENA KLEINHENZ, FRANCESCA BOVE, XIANE SMITH, KATHERINE KASHA, VICTORIA RIVERA, DAVID TERNER, LAUREN ELLIS
FACULTY SPONSOR: ERNEST LASCELL, MUSIC

4:10 – 4:25 PM

Allison and Maddy

Original music and a few covers

ALLISON ALTSCHILLER, MADALYN BOWEN
FACULTY SPONSOR: TAYLOR GALE, AREA COORDINATOR

4:25 – 4:40 PM

Jonathan and Sarah

“Wandering Child”, Wild Rivers; *“Barton Hollow”*, The Civil Wars; *“In My Life”*, The Beatles

SARAH BISSELL, JONATHAN BECKER
FACULTY SPONSOR: BELYAKOV-GOODMAN, ENGLISH

4:45 – 5:05 PM

Solo performance MATT RAPOZA

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.

ANCHI FRIEDMAN

Winterscape: Watercolor on watercolor paper

Faces of Baylon Temple: Taken at Angkor Wat in Siem Reap, Cambodia during study abroad of Spring 2016

Lost in the Alps: Kleine Scheidegg, Switzerland

CAITLIN CASTELLETTI

Roman Holiday: 2017. This black and white photo was taken of the Riviera Theater in Geneseo, NY with a Canon Rebel T5.

Lights: 2017. This photo was taken with a Canon Rebel T5 under a light painting technique.

St. Paul's View: 2016. This aerial view of London was taken from the top of St. Paul's Cathedral (279 ft above). Camera used was a Canon Rebel T5

HANNAH MRAKOVIC

Lost in Translation: "Because I do not speak or read Croatian, and I am also not familiar enough with the social and political situation in Yugoslavia - I am unable to execute a particular work for this Zagreb exhibition as I have elsewhere executed works appropriate to specific circumstances." I am half-Croatian, but I do not know the language, just as the artist of this reflective piece claims. I traveled to Croatia for the first time to meet my family, learn some of the language, and absorb the culture of this country that has been part of my identity my entire life, but I have never felt connected to it until this moment. The artist's dilemma complements my identity and experience of being lost in translation in a country and culture that is half my heritage. Muzej Suvremene Umjetnosti (Museum of Contemporary Art), Zagreb, Croatia September 2016

Muse: Taken at the Guggenheim Museum, NYC May 2016

Le Louvre: Taken at Musee du Louvre, Paris December 2016

JESSICA LISI

Blueberry Man: Acrylic Paint, 2015. Series: Open Hand Theater's Puppet Circus. This piece shows a very famous and reoccurring character in Open Hand Theater. The Blueberry Man is a paper mache monster that frequently shows up in our Circus Camp shows, parades, and events. The picture features Katie Willard within the costume, standing on top of the theater and looking out to see all of Syracuse. I wanted to juxtapose the light from the window with the darkness within the theater and its affect on the colorful costume.

Puppet Street Circus: Colored Pencil, 2015. Series: Open Hand Theater's Puppet Circus. This features a snapshot from a festival that Open Hand performed at known as the International Puppet

Day Festival. Here, I incorporate both aspects of the large puppets, and the circus spin we put on our performances. I transformed the city of Syracuse into a circus-like environment that's both colorful and surreal.

Puppet Lion Tamer: Colored Pencil, 2015. Series: Open Hand Theater's Puppet Circus. Here, I have incorporated the founder of Open Hand, Geoffrey Navias, directing some young campers who are currently dressed as lions. These kids are balancing on a large board, again incorporating elements of circus and puppetry. The bright colors work well to express the circus-esque feel of the show.

TIM BURGER

A Study of Age: I drew this with graphite pencils in 2016 as an effort to gain experience analyzing the unique facial features of the elderly.

ANNIE LEVINE

Mastery: Within my feminism concentration, I choose to focus on women, and express through my works the hardships they have endured throughout time. As displayed in the painting, a female marionette is dangling by the threads of a dominant hand. The figure is wearing a house-wife style uniform, representing the supremacy men held, and still hold over women within American culture. While the commonplace of this stereotype is at times incredibly outdated, women today still struggle with defining themselves as independent, and hardworking members of society.

Insecurity: Within my feminism concentration, I choose to focus on women, and express through my works the hardships they have endured throughout time. I intended that this piece express the raw, barbed pain that comes from women's everyday insecurities; especially concerning their bodys, and their appearances. Today more than ever, women are constantly bombarded with psychically intangible expectations that lead to overall decreases in self-esteem, confidence, and happiness.

Purity: This piece recognizes the harsh laboring conditions children alike faced during the early years of the 20th century. Children starting at the age of 8 were put through horrific laboring conditions as the American industrial revolution began. Specifically, within this piece a child is being seen with a gas mask on his lap and a mining hat to his side. Notoriously it was common, especially for black children, to be seen working in coal mines.

REBECCA CERVI

Cosmic Creations 1: Colorful galaxy art using spray paint, newspaper, and a lot of creativity. I love that this kind of art is so simple to make, yet still so beautiful and unique.

Cosmic Creations 2

Cosmic Creations 3

WALTER STOERGER

Broken: I am broken. I am left here but a silhouette, only a shadow to my name. People may see me as one complete whole, but instead I take on qualities of others. Only to be left here with a chameleon like soul, trying to take in all these different shattered reflections. Attempting to fill blankness with shards of friends and family, like a jigsaw puzzle that cuts you as you try to put the pieces into place. Every time I cover myself with that shard of mirror, a piece of who I really am must die. What happens when I am covered completely with mirror? Am I no longer broken? Funny thing is I am more broken then before, I am left with only cracks of me trying to slip through. It is not one mirror, but many different ones crudely carved into place. People will not see themselves, nor will they see me. They will see a broken individual, that not even all the king's horses and all the king's men can repair. They will see seven years bad luck, that no rabbits foot, no four leaf clover, and no horseshoe can help. They will see a phony, that mirror mirror on the wall will say you will never be the fairest of them all.

DIANA DEFILIPPIS

Holland: Acrylic on Canvas, 2017

Untitled: Acrylic on Canvas, 2017

JENNY WONG

Fruits and Flowers: Acrylic on canvas, 2014

Hand Drawing: Graphite, 2015

Portrait: Charcoal, 2015

ALEXANDER SHAW

Cheetah: Watercolor, 2017

Golden Retriever: Watercolor, 2017

BRIANNA KOPACZ

12-Oct-14

Man in the Mirror

Grand Central Station; October 12, 2014; 1:57 PM

The other side

RACHEL DORR

Nature's first green is gold: My photograph of a leaf emulates that nature is beautiful regardless of its health. I chose to title my piece using a line from Robert Frost's poem, "Nothing Gold Can Stay," because Frost is correct when he says nothing lasts forever and this leaf proves his idea. The leaf has gone through its whole life cycle and has provided nutrition for insects, however when I took this photo, I thought it was as beautiful as it was when it was new and green.

Morning Frost: I took this photograph during a nature photography session during the late fall, when frost covers the ground each morning. I have

always been fascinated by frost and dew, so when I came across this plant, I really wanted to highlight the detail of every little droplet of frost in the crevices of the plant. I framed my shot this way to focus on the natural symmetry of the plant.

WHITLEY BRINCKA

Beauty In One's Backyard: Photo: Rochester, New York, summer 2015.

By The Sea Shore: Photo: Massachusetts, summer 2016.

Go With The Flow: Photo: Adirondacks, New York, spring 2015.

SARAH MANDANAS

Quiet Summer Sunset: A photograph of the Geneseo sunset from this past summer. Nice.

NICHOLAS VANAMEE

Kin: Acrylic on canvas. Done in half an hour at the Nassau Hall Art After Hours event.

Untitled: Acrylic on paint board.

Self-Portrait: Acrylic on paint board. Attempted expressionism.

EMMA PURE

Unity in Black and White: 2017. In light of recent events, I did a spontaneous photo project with two of my friends to symbolize the strength that comes from unity. In this time more than ever we need to look past our differences and hold each other up, as members of the human race. I wanted to convey that feeling of unity and strength, through the light and dark times, in this photograph.

People Watching: Children watch the Fetu Afahye Festival from their house in Cape Coast, Ghana. This festival happens yearly and celebrates the chiefs of local tribes. It is a colorful parade with costumes, music, and dance.

The Fisherman: 2017. A local fisherman pauses to smile in Ada Foah, Ghana.

LEAH RUSSO

On The Road: Photography. This is a photo I took while hiking in the mountains of Bend, Oregon. I can across this abandoned bus in a snow park parking lot. Taken in January of 2016.

Pink: Photography

Kelsey: Photography. This is a portrait of a really good friend of mine who isn't afraid to be herself.

ESTHER KEON

Shadows in the Snow
Calm Before the Storm
Rainy at Dusk

MOLLY DOWNING

Bird is a Word

SPECIAL PRESENTATIONS

The Geology of Art/The Art of Geology

ISC Lobby

KENDALL FITZGERALD

FACULTY SPONSOR: AMY SHELDON, GEOLOGICAL SCIENCES

This project seeks to reconcile the perceived divide between science and the humanities by examining how both artists and scientists depict and understand the natural world. In this presentation I will be examining works of art that incorporate geology (like Thomas Cole's *The Oxbow*) alongside data from scientific research in order to uncover how both disciplines contribute to a fuller understanding of the world. Through this juxtaposition I aim to show how art and science can be used in tandem to communicate research to a broader audience, in the hope of working towards a more sustainable future.

Guerrilla Student Artists – Voices from Geneseo's Migrant Worker Community

Sturges Quad

EVAN GOLDSTEIN, KALLIE SWYER, ROBBIE HELD, DIEGO BARCACEL PEÑA, AND ISABEL OWEN

FACULTY SPONSOR: LYTTON SMITH, ENGLISH

Guerrilla will be presenting the results of a long process of interviews with local migrant workers, conducted with the help of anthropology students and professors, and edited and published by our poets. The presentation will feature narratives from the lives of migrant workers, spread prominently around campus. The aim of this project is to humanize the migrant community that is so vital and so, at times, difficult to see, around Geneseo, by allowing them to speak for themselves.

Music at the Gazebo

11:00 am Gazebo

Geneseo String Quartet

STEVEN YEE, EVELYN WELCH, ERIC WANG, RYAN LEE

FACULTY SPONSOR: ANDREW BERGEVIN

Performance of Beethoven's Quartet in F minor, Op. 95 "Serioso", Bartok violin duos, and possibly other quartet movements by classical composers.

Geneseo Brass Quintet

KATHERINE ZASLAVSKY, TORY WELSCH, ANNE KELLY, ROBERT MARINO, TIMOTHY SNYDER

FACULTY SPONSOR: ANDREW BERGEVIN

Join the Geneseo Brass Quintet for a performance that spans hundreds of years, from classical pieces to folk music to pop songs of today. Selections include "Hallelujah", "Shenandoah", "In the Hall of the Mountain King", "The Liberty Bell", and more!

Saphire Winter Guard People at Geneseo

5:10 PM College Union Plaza (outside)

JANE FENG, MADISON WAYLAND, KAYLAN RUIZ, SHELBY SCHMIGEL, BROOKE MONFALCONE, ANNA DIFEDE, BRITTANI JOPSON, CECELIA GONZALES, JASMINE WEED, LINA CLIFFORD, LINDSEY HAWKINS, MARISSA CANARELLI, MARY SIMPSON, JANE BARANELLO, SAMANTHA JAYNE, STEPHANIE BROWN

FACULTY SPONSOR: LISA SMITH, MATHEMATICS

Geneseo Winter Guard is a 100% student run team. The guard competes in the Northeast Color Guard Circuit, and has been very successful jumping back into competition after many years break. The performance features dance, rifle, and flag routine set to music.

Hula Hoops

5:15 College Union Lobby

BEN SPAID

SPONSOR: PATTY HAMILTON-RODGERS, SPONSORED RESEARCH

A hula hoop manipulation performance. This is a co-ed and high energy team that dances at on-campus events, local events in the Geneseo community as well as competitions in the local area.



Geneseo Insomnia Film Festival

6:30 PM reception, 7:00 PM screenings Wadsworth Auditorium

The Sixth Annual Geneseo Insomnia Film Festival took place on March 24/25. 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, whether they be 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 2017 Insomniacs!

GIFF Teams and Participants

What's in a [Team Name]

KADIN FAWCETT
JULIA CAMERON
RICHARD JAMES
JACK GRANT

Panda Production

SANG WOOK NAM
GAVIN RAFFLOER
ERWIN UY
ERIC WANG

The Reel MVPs

HANNAH MRAKOVIC
JULIA CUMMINGS
MOLLY DOWNING
ANCHI FRIEDMAN

The Lean Mean Meme

Machine

CHARLES ROBERTSON
JOHN ROBINSON
RACHAEL MERLAU
BENJAMIN JUCHNIEWICZ

Team Rocket

MICHAEL MACDONALD
SHANNON HAYES
CON ROCHE
DAMIAN ROBERTS

John Wilke's Tooth

JOSEPH DEBRITZ
THOMAS PERLEE
DONOVAN INGRAM

Asskickers United

TIMOTHY BLOMQUIST
DIEGO BARACACEL PEÑA

Rupkotha

SAMUEL AVILES
JANELLE CLEMENTS
JUSTIN WINLEY
THASFIA CHOWDHURY

Valley Motion Pictures

TIMOTHY WILLIAMS
MUSTAFA AMINALHAQ

Filmic Brilliance

ALPHA BARRY
NANA BOAKYE
SARAH SIMON
JASON GUISAO

Wanna Piece of Steph?

STEPHANIE STAVROU
THOMAS PIAZZA
KYLE WANNAMAHER

Newton's Knights

IAN COSTLEY
NICK LAURELLI
DAVID BONE

Make it Work Productions

CATHERINE WHITE
DORIS KANE
HANNAH MCSORLEY
JACK KITZEN

Pigs in Space

THOMAS GOTTSINE
GRAHAM PATTERSON
JOELLE CREAM
ELIZABETH BRIERTON

Currently Known As

ZOOEY SORICE
BRANDON CHUNGATA
RACHEL MOLINO
TREVOR GRECO

Pretty Little Liars

TOLUWA JAYEOLA
JENNA COBURN
ADAEZE NWOKOLOBI
BRITTANI SAMUEL

Buffalo Bills

DAVID YEROFEEV
GIANCARLO DENAROSO
SEAN LAUBER

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Patty Hamilton-Rodgers, Anne Baldwin, Andrea Klein, Tammy Hill and Erica Doherty for their special expertise and many hours devoted to planning this event.

GREAT Day is funded by the Office of the Provost, the Student Association, Campus Auxiliary Services and the Jack '76 and Carol '76 Kramer Endowed Lectureship.

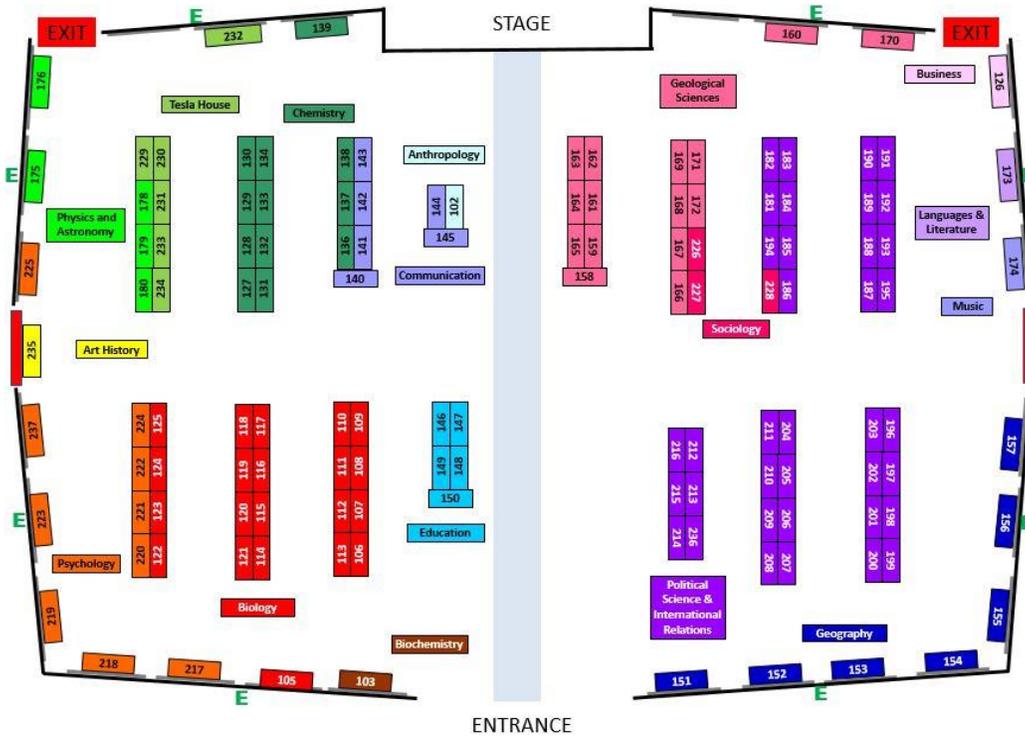
http://www.geneseo.edu/great_day

GREAT Day would like to acknowledge our partners:



POSTER SESSIONS COLLEGE UNION BALLROOM

Session 1: GREAT Day Poster Locations

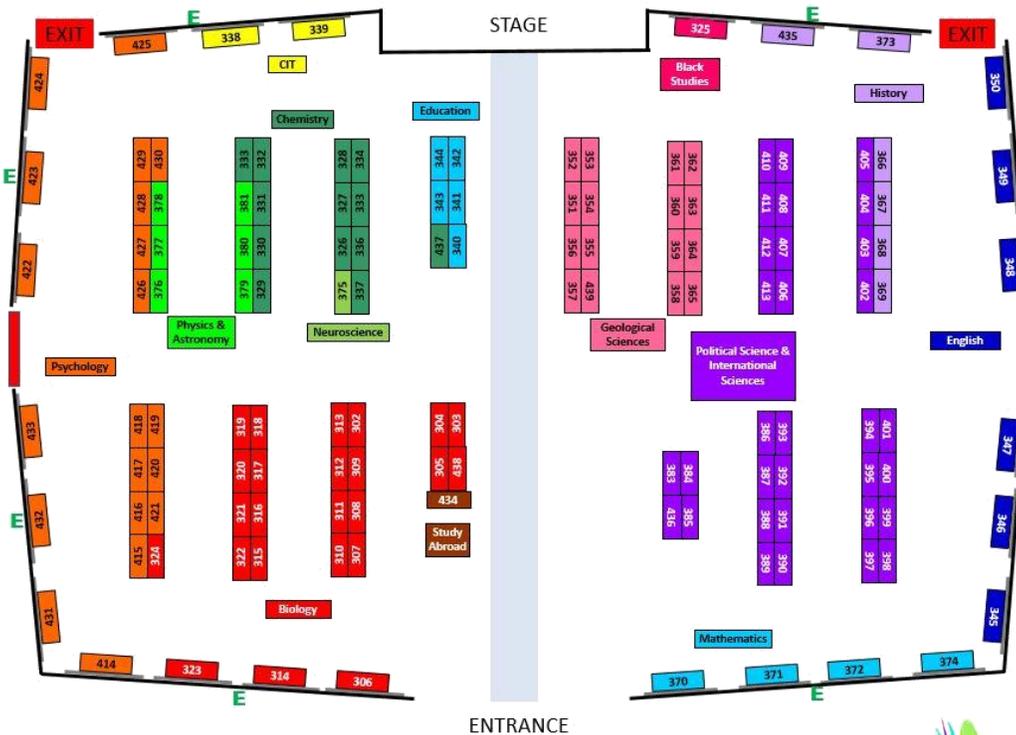


Session 1

11: 15 AM – 12:45 PM

Lunch and the Geneseo String Band performance at noon

Session 2: GREAT Day Poster Locations



Session 2

5:15 PM – 6:45 PM

Reception with Keynote Speaker, Dr. Erich Jarvis



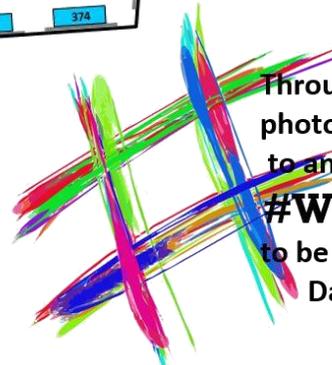
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Throughout the day post photos, videos and more to any channel with the **#WeAreGREAT** to be featured on GREAT Day social media!