Student Research & Creative Activity Day 2019

April 18 & 19
Hunt Union Ballroom

SUNY Oneonta
2019 Student Research & Creative Activity Day

April 18, noon – 5 PM
April 19, 9 AM – 1 PM
Hunt College Union

Sponsored by:

College at Oneonta Foundation, Inc.
Office of Alumni Engagement
Grants Development Office
Division of Academic Affairs

2018/19 College Senate Committee on Research

Thomas Beal, Chair (History)
Mette Harder (History)
Chien-Wei Lin (Management, Marketing & Information Systems)
Geoffrey O’Shea (Psychology)
Florian Reyda (Biology)
Kathy Meeker, ex officio (Grants Development Office)

suny.oneonta.edu/grants-development-office
PROGRAM

Hunt Union

Thursday, April 18, 1–5 pm &
Friday, April 19, 9 am – 1 pm

Oral presentations, posters, computer displays, and other exhibits spotlighting student research and creative activity projects from across the disciplines (see abstracts)

12:00 NOON–1:00 PM in the Hunt Union Ballroom
Luncheon and Keynote Address (registered guests only)

Andrea J. Casper ‘75

"The Science of Knowing Shapes the Art of Living"

Andrea Casper began her career at the National Institutes of Health Clinical Center in Bethesda, Md. She held positions of increasing responsibility for over 10 years and then transferred to the Food and Drug Administration Center for Biologics where she reviewed and approved new applications for IVD products, blood, and plasma as well as conducted establishment and manufacturing inspections. She joined Johnson and Johnson in 1989, then, in 1994, joined Roche Molecular Systems holding managerial roles in regulatory affairs. Casper returned to Johnson and Johnson as Worldwide Director of Regulatory Affairs in 1997, and was promoted in 2005 to Vice President Worldwide Regulatory Affairs and Product Vigilance. With 25 years of progressive experience in regulatory affairs, Andrea joined C.R. Bard, Inc. in 2011 and retired as Corporate Vice President of Regulatory Affairs in 2017.

Annual Student Juried Art Exhibition

Visit the Martin-Mullen Art Gallery in the Fine Arts Building to view works by student artists, featuring sculpture, ceramics, digital prints, drawings, paintings and video art

~on display through May 11~
SUNY Oneonta
2019 Student Research & Creative Activity Day
Schedule of Presentations

ORAL PRESENTATIONS (Catskill Room)

Thursday, April 18

3:30 pm  
**Student:** Mahmmod Jodeh  
**Faculty Sponsor:** Joshua Nollenberg (Physics & Astronomy)  
Dark Matter and X-ray Gas Distributions in Colliding Galaxy Clusters

4:00 pm  
**Student:** James Stamos  
**Faculty Sponsor:** Summer Cunningham (Communication & Media)  
An Autoethnographic Response to Death

4:30 pm  
**Student:** Sabrina De La Rosa  
**Faculty Sponsor:** Maria Chaves Daza (Africana & Latino Studies)  
With Loving Arms: A Story of a Family that was Ripped Apart at the Hand of the Immigration Policies of the United States

Friday, April 19

11:00 am  
**Student:** Jordan Nadelson  
**Faculty Sponsor:** Fred Zalatan (Biology)  
Determining the Effects of a Secretory Pathway Component on the Frequency of Ty1 Transposition Events in *Saccharomyces cerevisiae*

12:00 pm  
**Student:** Billy Murray  
**Faculty Sponsor:** Beniam Awash (Sociology)  
Corporate News Sources Narration of Venezuela within the United States

POSTER, COMPUTER DISPLAYS, OTHER EXHIBITS (Ballroom)

Thursday, April 18, 1-5 pm

**Student:** David Andrews  
**Faculty Sponsor:** Matthew Albright (Biological Field Station)  
Tracking Anthropogenic Impacts on Water Quality in Butterfield Lake, NY

**Student:** Michael Bagby  
**Faculty Sponsor:** Keith Brunstad (Earth & Atmospheric Sciences)  
Bathymetric Mapping and Initial Sub-bottom Profiling of the Lower Reservoir of Oneonta Creek, NY, using High-frequency Side Scan Sonar

**Student:** Ellen Barley  
**Faculty Sponsor:** Raymond Siegrist (Secondary Education & Educational Technology)  
Implementing Geogebra into NYS Common Core Math Standards

**Student:** Gizel Brewer  
**Faculty Sponsors:** Elizabeth Middleton (SUNY Purchase), Kelly Gallagher (Chemistry & Biochemistry)  
Membrane Leakage of *E. coli* and *S. aureus* by Maximin 3

**Students:** Brandon Brooks, Samantha Kio  
**Faculty Sponsor:** Charlene Christie (Women’s & Gender Studies)  
"Women Are Not Good At This" – How Stereotypes and Achievements Influence Self-esteem
Student: Finella Campanino  
Faculty Sponsor: Tami LaPilusa (Biology)  
Assessment of the Crab Replenishment Reserve (CRR) on North Andros Island for Fishery Management in The Bahamas

Students: Stephanie Carpenter, Nicholas Kilmer  
Faculty Sponsor: Paul French (Physics & Astronomy)  
Testing and Refinement of the Beats Method of Finding Absolute Pitch

Students: Rebekah Finster, Sarah Pokrzywa  
Faculty Sponsor: Jacqueline Bennett (Chemistry & Biochemistry)  
NMR Study of Phenylsemicarbazone

Student: Nicholas Giordano  
Faculty Sponsors: Kpoti Kitissou, Michael McAvoy (Economics, Finance & Accounting)  
The Marginal Revenue Product of a Men's College Basketball Player

Student: Matthew Gornbein  
Faculty Sponsor: Dona Siregar (Economics, Finance & Accounting)  
The Financial Crisis and the Effects on Corporate Bond Spread

Students: Connor Hatton, Robyn Margolin  
Faculty Sponsor: Allan Green (Chemistry & Biochemistry)  
Regulation of Lipolysis by AMPK

Student: Kendra Kilson  
Faculty Sponsor: Willard Harman (Biology)  
Let's Get to the Bottom of Bathymetric Maps

Student: Anastasia Klingel  
Faculty Sponsor: Antoine Blanc (Chemistry & Biochemistry)  
A Comparison of Higher Education Teaching Methods: Which Really Result in Student Understanding and Knowledge Retention?

Student: Makayla Klinger  
Faculty Sponsor: Barbara Durkin (Management, Marketing & Information Systems)  
Implementing the International Labor Standards in the United States

Students: Ryan Layman, Julieanne Sullivan, Natasha Hakim, Ashley Jones  
Faculty Sponsor: Paul Bischoff (Secondary Education & Educational Technology)  
Water Quality Analysis of Emmons Bog

Students: Ryan Layman, Melissa Amigon, Julieanne Sullivan, Sarah Jones, Madeline Every  
Faculty Sponsors: James Ebert (Earth & Atmospheric Sciences), Paul Bischoff (Secondary Education & Educational Technology)  
Earth Science Model Research and Design Institute

Student: Julia Llewellyn  
Faculty Sponsor: Yung-Jung Choi (Human Ecology)  
Creating Fashion: Uncovering Trend Analysis and Forecasts

Student: Christopher Maier  
Faculty Sponsors: Kiyoko Yokota, Daniel Stich, Willard Harman (Biology)  
Developing a Management Plan for a Small Private Lake
Student: Katherine Martinez Munoz  
Faculty Sponsor: Sean Robinson (Biology)  
Population Genetic Structure of the Flowering Plant *Diapensia lapponica* (Diapensiaceae) in the Northeastern Alpine Zone

Students: Kaitlin Martins, Heather Noulis, Nicholas McElwee  
Faculty Sponsor: Katherine Lau (Psychology)  
The Four Facets of Psychopathy and Parenting Styles

Student: Monica Matt  
Faculty Sponsor: Willard Harman (Biology)  
A Delicate Balance: The Need for Weeds in an Aquatic Ecosystem

Student: Sara McCaffrey  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
Tourism in Jamaica: A Model for a Sustainable Tourism Industry

Student: Claire McMahon  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
A Tale of Two Jackets: An Apparel Life Cycle Analysis

Students: Madison McQueeny, Athena DeCarmine  
Faculty Sponsor: Jody Aultman (Human Ecology)  
A Study of Surface Design

Student: Elizabeth Meaney  
Faculty Sponsor: Bharath Ramkumar (Human Ecology)  
Crossing the Fine Line between Fashion and Trash

Students: Taylor Metz, Anthony Ferris, Sam Havens  
Faculty Sponsor: Rhea Nowak (Art)  
The Process of Intaglio Printmaking

Student: Brigid Meyers  
Faculty Sponsor: Kiyoko Yokota (Biology)  
Current and Projected Stratification Patterns in Otsego Lake, NY

Student: Brian Mullin  
Faculty Sponsor: Florian Reyda (Biology)  
Invasive Copepod Infections of Introduced Salmonids in Lake Ontario

Students: Caleigh-Shea Murphy, Cristina Santos Carvalho  
Faculty Sponsor: Jill Fielhaber (Biology)  
Assessing Zinc Exposure Necessary for Cytotoxic Effects on Cancer Cell Lines

Students: Virginia Pagan, Michael Lang  
Faculty Sponsor: Chien-Wei Lin, Lambrianos Nikiforidis (Management, Marketing & Information Systems)  
The Impact of Acquisition Mode on Consumers' Brand Roles Preferences

Student: Amy Rohrman  
Faculty Sponsor: Jeffrey Heilveil (Biology)  
Survey of Microsporidia in the Aquatic Invertebrate Taxon Glossosoma sp. in Otsego County, NY

Students: Amy Rohrman, Jeremy Pember, Sarah Pokrzywa, Isaiah Crosbourne, Claire Curtin  
Faculty Sponsor: Florian Reyda (Biology)  
Nematode Diversity in Otsego Lake Fishes
Student: Cristina Santos Carvalho  
Faculty Sponsor: April Harper (History)  
The Diary of a Depressed King as Evidence of Religion as a Form of Medical Treatment for Mental Illness in the Late Medieval Ages

Student: Amanda Setteducate  
Faculty Sponsor: Willard Harman (Biology)  
Effects on Sediment after Long-term Copper Sulfate Use on a Eutrophic Lake

Student: Megan Shannon  
Faculty Sponsor: Renee Walker (Anthropology)  
BEARS, WOLVES AND PELICANS, OH MY! Animal Bone Analysis at the Pile Mound Site, Eastern Tennessee

Student: Eric Swan  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
The Impacts of Human Interaction Upon Piping Plover Populations

Students: Dylan Syrbe, Muhammad Iqbal  
Faculty Sponsor: Tofazzel Hossain (Physics & Astronomy)  
Graphene Supported Shape-Controlled CeO2 for the Application of Supercapacitor

Student: Chlo Tarlen  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
The Long Island Aquifers

Student: Craig Wert  
Faculty Sponsors: Florian Reyda, Fred Zalatan (Biology)  
Using Molecular Biology to Determine Parasite Identity

Student: Emily Whitaker  
Faculty Sponsor: Monica Grau (New Student Services)  
Homesickness in First-Year College Students

Student: Chumin Wu  
Faculty Sponsor: Ho Hon Leung (Sociology)  
Documentary Photo Essay on Chaoyang Village, Southern China

Friday, April 19, 9 am–1 pm

Student: Serina Aridi  
Faculty Sponsor: Christine Storrie (Economics, Finance & Accounting)  
Macroeconomic Effects on Initial Public Offerings: A Time-Series Analysis

Student: Ryan Assini, Andrew Weiss  
Faculty Sponsor: Fred Zalatan (Biology)  
The Role of Clathrin Protein in Ty1 Assembly and Replication

Student: Zea Beckwith  
Faculty Sponsor: Wesley Bernard (Art)  
Homeless Heroes

Student: Hali Bedenharn  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
Say No To Plastic Bags: SUNY Oneonta Campus Case Study
Student: Ari Berg  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
Climate Changes Effect on *Ixodes sculparis* Population Density

Student: Samantha Bouton  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
Plastic Bag Policies

Student: Samantha Cassata  
Faculty Sponsor: Jeffrey Heilveil (Biology)  
Identification of Fireflies (Coleoptera: Lampyridae) at Thayer Farm, Otsego County, NY

Student: Stradder Caves  
Faculty Sponsor: Daniel Stich (Biology)  
Relating Grass Carp Growth to Hydrilla Abundance in a Southern Reservoir

Students: Kelly Comack, Hannah Hicks  
Faculty Sponsor: Jen-Ting Wang (Mathematics, Computer Science & Statistics)  
Effect of Music on STEM Majors

Students: Danielle Darrow, Kayla Norton  
Faculty Sponsor: Katherine Lau (Psychology)  
The Moderating Effect of Friendships on Childhood Physical Punishment and Borderline Personality Traits

Student: Alison Deane  
Faculty Sponsor: Dona Siregar (Economics, Finance & Accounting)  
Diversifying Your Portfolio with Cryptocurrency?

Students: Gina DiGiovanni, Gillian Suzzan, Kevin Reyna, Andrea Gomez  
Faculty Sponsor: Yoko Takagi (Psychology)  
Parental Beliefs and Parenting in Subcultures within the Greater New York Metropolitan Area

Student: Taylor Dolan  
Faculty Sponsor: Christopher Karmosky (Earth & Atmospheric Sciences)  
ENSO and Flooding on the Mohawk River from April to September 1950 to 2017

Student: Hayley Dower  
Faculty Sponsor: Daniel Stich (Biology)  
Population Dynamics of Spawning Walleye in Otsego Lake, NY

Student: Kyle Dudgeon  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)  
Mapping Eagle Flight Paths in the Proposed Bluestone Wind Project Area, Sanford, NY

Students: Nicole Faraci, Sarah Curtin, Alexandra Cunningham  
Faculty Sponsor: Katherine Lau (Psychology)  
The Moderating Effect of Self-Esteem on the Association Between Disordered Eating Habits and Social-Closeness in Fraternity and Sorority Life

Student: Sam Feinman  
Faculty Sponsors: Philip Sirianni, Kai Chen (Economics, Finance & Accounting)  
The Effect of Green Policies on the U.S. Stock Market

Students: Constance Finnerty, Casey McCurty  
Faculty Sponsor: Tracy Allen (Geography & Environmental Sustainability)  
Arsenic in Lake Atitlán, Guatemala
Student: Bailey Gano  
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)

Otsego County Electric Grid Proposal

Students: Joshua Garufi, Heather Noulis  
Faculty Sponsor: Katherine Lau (Psychology)

Attitudes Towards Police

Student: Erin Gilligan  
Faculty Sponsor: Daniel Stich (Biology)

Integrating Climate Change into Growth Models for American Shad Populations throughout the Atlantic Coast

Student: Alec Gudowitz  
Faculty Sponsor: Florian Reyda (Biology)

Crustaceans of the Long Island Sound

Students: Hannah Harby, Amanda Rhodes, Alexandra Vlk  
Faculty Sponsor: Elizabeth Bastiaans (Biology)

Comparing Contemporary to Historical Fluctuating Asymmetry in Plastron Scutes of Wood Turtles

Student: Stephen Hatalla  
Faculty Sponsor: Joshua Nollenberg (Physics & Astronomy)

Planet Nine Search

Student: Taylor Held  
Faculty Sponsor: Rahul Rastogi (Communication & Media)

Sustainability in the Everyday: Exploring Everyday Practices of Sustainability in Rural India

Students: Benjamin Hubert, Brendan Bonura  
Faculty Sponsor: Sen Zhang (Mathematics, Computer Science & Statistics)

Enhancing Nao’s Tic-Tac-Toe AI using a Monte Carlo Tree Search Algorithm

Student: Savannah Irwin  
Faculty Sponsor: Ursula Sanborn-Overby (Psychology)

Evaluating the Gender Stereotypicality of Unisex Names

Student: Cindy Isidoro  
Faculty Sponsor: Gregory Fulkerson (Sociology)

Bringing Awareness of Food Waste Reduction and Composting

Students: Selena Jelic, Keenan Jones  
Faculty Sponsor: Katherine Lau (Psychology)

The Associations between Subtypes of Overprotective and Nurturing Parenting with Borderline Personality Traits

Students: Selena Jelic, Laci Nellis, Nicolette Nault  
Faculty Sponsor: Katherine Lau (Psychology)

The Influence of Interpersonal Sensitivity on the Friendships of Borderline Personality Disorder

Student: Dillon Jones  
Faculty Sponsor: Ursula Sanborn-Overby (Psychology)

Examining Gender Differences in Negotiation

Student: Dylan Joyce  
Faculty Sponsor: Andrew Bottomley (Communication & Media)

Tabletop Tales Video Series
Student: William Leahy  
Faculty Sponsor: Matthew Hendley (History)  
Hong Kong's Children: Child Labour and Mui Tsai in Hong Kong

Students: Melissa Marry, Ben Weir  
Faculty Sponsor: Hugh Gallagher, Jr. (Physics & Astronomy)  
Seiche Characteristics and the Feasibility of Detecting Them in Coastal Basins

Students: Anthony Messina, James Bethel, Alyssa Brault, Hannah Kaplan, Juliana Valencia, Olivia Allrich  
Faculty Sponsor: Lawrence Guzy (Psychology, faculty emeritus)  
Prevalence of Motion Sickness Symptoms with Student-Athletes Traveling by Bus to Away Games and Competing Shorty After Arrival

Students: Anthony Messina, Joshua Garufi  
Faculty Sponsors: James Zians (Psychology), Rebecca Harrington (Counseling, Health & Wellness), Daphne Thompson (Athletics)  
Student Athletes' OPROS Leadership Program: Quantitative & Qualitative Evaluation Results

Student: Emilie Mull  
Faculty Sponsor: Alejandra Escudero (Foreign Languages & Literatures)  
Articulatory Phonetic and Dialectological Companion Site

Student: David Ndambuki  
Faculty Sponsor: Junryo Watanabe (Biology)  
M1 and M2 Genes in Drosophila melanogastor Plasmatocytes

Students: Amanda O’Meara, Mikala Gallo, Clare Jay  
Faculty Sponsor: Elizabeth Seale (Sociology)  
The Good, the Bad, and the Double-Edged Sword: First-Generation College Experiences at SUNY Oneonta

Students: Eric Ortiz, Alexandra Lewis, Ryan Minges, Martin Sak, Christopher Robertson  
Faculty Sponsor: Jen-Ting Wang (Mathematics, Computer Science & Statistics)  
Who Are You Most Likely To Hire?

Student: James Pasquino  
Faculty Sponsor: Heike Geisler (Chemistry & Biochemistry)  
Synthesis of a Sandwich-Type Graphene Based Electrochemical Immunosensor

Student: Nicole Pedisich  
Faculty Sponsor: Jeffrey Heilveil (Biology)  
Population Genetics of the Knobbed Salmonfly, Pteronarcys biloba (Newman), in New York State

Students: Nathan Rutherford, Valerie Conforti, Jeffrey O’Neil  
Faculty Sponsor: Keith Jones (Mathematics, Computer Science & Statistics)  
Student Perspectives on Inquiry-based Learning In Mathematics

Student: Emily Shaver  
Faculty Sponsor: Emily Riddle (Human Ecology)  
Nutrition Intervention with Livestrong at the YMCA

Student: Amy Shultis  
Faculty Sponsor: Kiyoko Yokota (Biology)  
CLIA Learning How to Use Cyanoscope and bloomWatch to Monitor Algal Blooms on Canadarago Lake

Student: Tashae Smith  
Faculty Sponsors: Gretchen Sorin, William Walker (Cooperstown Graduate Program)  
Dyckman Farmhouse Museum: Interpretative Plan of Slavery in Upper Manhattan
Students: Danielle Świerczyna, Kaylee Lasher, Andrea Less, Odalis Barzallo
Faculty Sponsor: Alexandra Nicolette (Human Ecology)
Erythritol as a Sugar Alcohol Replacement for Granulated Sugar in Vegan Brownies

Student: Evan Timony
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)
The Cost of Wildfire and Potential Mitigation for Future Risk

Student: Ellie Underwood
Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)
Waste Production, Energy Consumption, and Sustainable Practices within the Food Sector

Student: Luigi Valoroso
Faculty Sponsor: Jennifer Withington (Biology)
Students Perspectives on Genetically Modified Organisms

Student: Nicholas Weier
Faculty Sponsor: Keith Jones (Mathematics, Computer Science & Statistics)
Digital Signature Schemes

Student: Daniel Westman
Faculty Sponsor: Les Hasbargen (Earth & Atmospheric Sciences)
Relationship of Shape, Hardness, and Erodibility within Spruce Creek of a Retreating Catskill Waterfall

Student: Laiken Whittredge
Faculty Sponsor: Wesley Bernard (Art)
"For All The Things I Can't Explain" – Exploring Mental Health Through Fine Art Photography

Student: Abigail Williams
Faculty Sponsor: Alexandra Nicolette (Human Ecology)
Coconut Milk Yogurt with Increased Dietary Fiber and Protein Content

Students: Sarah Witman, Alexandria Collum, Amaya Hodges
Faculty Sponsor: Elizabeth Bastiaans (Biology)
Does Mating with a Novel Male Increase Reproductive Investment by Female Bean Beetles?

Students: Anastasia Youngs, Hayley Dower
Faculty Sponsor: Daniel Stich (Biology)
Walleye (Sander vitreus) Growth in Otsego Lake, NY
## STUDENT PARTICIPANTS

(G) = Graduate student

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<td>David Andrews (G)</td>
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<td>Serina Aridi</td>
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<td>Amaya Hodges</td>
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<td>Benjamin Hubert</td>
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<td>Michael Bagby</td>
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<td>Savannah Irwin</td>
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<td>Odalis Barzallo</td>
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<td>Connor Hatton</td>
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<td>Kayla Norton</td>
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### 2019 Student Research & Creative Activity Day PARTICIPANTS

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<td>James Stamos</td>
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### FACULTY SPONSORS

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PRESENTATION SUMMARIES

Key:  (G) = Graduate Student

☼ = Designated as sustainability-related by the President's Advisory Council on Sustainability
★ = Supported by the Student Grant Program for Research and Creative Activity
(funded by the College at Oneonta Foundation and the SUNY Oneonta Alumni Association; facilitated by the Senate Committee on Research and the Grants Development Office)

Student: David Andrews (G)
Faculty Sponsor: Matthew Albright (Biological Field Station)

Tracking Anthropogenic Impacts on Water Quality in Butterfield Lake, NY ☼★
Butterfield Lake in Jefferson County, NY is a 450 hectare dimictic body of water that supports a wide variety of recreational activities for seasonal and year round residents of the region. Beginning in the fall of 2017 a sampling program was initiated to determine the sources of nutrients to the lake and suggest management actions that will reduce anthropogenic influences on the resource. Elevated levels of nutrients, especially phosphorus, are linked to increased primary productivity, including toxic harmful algal blooms. Physical and chemical limnological data were collected intermittently over the course of one year, and assessed in combination with nutrient concentrations from inflowing water to the lake. Additionally, the impact that municipal wastewater treatment has on the water quality of Butterfield Lake was assessed using fecal indicator bacteria enumerations along with a fluorescence survey to track treated wastewater in the watershed. Poster: Thursday, April 18 PM

Student: Serina Aridi
Faculty Sponsor: Christine Storrie (Economics, Finance & Accounting)

Macroeconomic Effects on Initial Public Offerings: A Time-Series Analysis
This study analyzes the impacts of various macroeconomic variables on Initial Public Offering (IPO) activities in the United States from the period ranging from 2000 to 2019. This study builds upon existing literature and uses a time-series analysis to test for any correlation between macroeconomic variables to measure real economic activity and IPO variables. Specifically, I use variables to measure stock market performance, investment risk, inflation, effective Federal funds rate, industrial production, 10-year U.S. Treasury bond yield, and IPO variables such as number of IPOs, total proceeds of the IPOs, and the average proceeds per IPO. The results of this test will be compared to other tests to determine if there are implications for future IPOs. This study is important because market conditions are a huge factor in the success of IPOs, and the understanding of which macroeconomic factors can affect IPOs may help to forecast IPO activities. Poster: Friday, April 19 AM

Student: Ryan Assini, Andrew Weiss
Faculty Sponsor: Fred Zalatan (Biology)

The Role of Clathrin Protein in Ty1 Assembly and Replication
Ty1 is a transposon, also known as a “jumping gene,” consisting of long-terminal repeats and existing in multiple copies throughout the genome of baker’s yeast. Ty1 is replicated via reverse transcription and formation of a virus-like particle (VLP). The role of the endomembrane system in the assembly of the Ty1 Gag capsid protein into Ty1 VLPs is currently under investigation. Clathrin is a protein that is involved in vesicle assembly in the endomembrane system. Our project involves analyzing the levels of Gag protein production as well as the efficiency of Ty1 replication in yeast mutants that are deficient in Clathrin. Poster: Friday, April 19 AM
**Student:** Michael Bagby

**Faculty Sponsor:** Keith Brunstad (Earth & Atmospheric Sciences)

**Bathymetric Mapping and Initial Sub-bottom Profiling of the Lower Reservoir of Oneonta Creek, NY, using High-frequency Side Scan Sonar ☀★**

Bathymetric and sub-bottom profiling on lakes and reservoirs provides critical information regarding the hydrology, water depth, volume, lake or reservoir sedimentation, sediment layering, and estimates sediment properties along sonar transects. These data can provide information on reservoir functionality, life span, and derivation of erosion and sedimentation rates of catchments. This study uses High Frequency CHIRP SONAR produced by a Hummingbird Side Scan Unit© coupled with ReefMaster© software to produce bathymetric and bottom feature maps of the Lower Reservoir of the city of Oneonta, NY. The unit provides DownScan, side scan, and ground penetrating sonar data. Side Scan data revealed objects on the bottom of the Lake in high resolution. DownScan provides bathymetric data for mapping as well as ground penetrating data revealing sediment thickness and type. Lake volume, bathymetric maps, bottom hardness and bottom composition maps and cross-sections were produced. The sonar reflection data was used to interpret sediment thickness. Rocky or silty areas of lake bottom were mapped. These maps show that the rocky areas of the lake are at the northern end and the silty areas are at the southern end. Sediment thickness in the rocky northern portion is ~60cm and in the silty southern portion is ~6m. The lower strong reflection is interpreted to represent the original lake bottom and used to calculate water and sediment volumes. The minimum volume estimate of the lake is 1057 m3. Sonar reflection data provided an estimate of the pre-sedimentation volume of 1927 m3 and a bathymetric map of the Lower Reservoir. An estimated 870 m3 of water volume has been lost from sedimentation. To recover lost reservoir space, the municipality is considering the options of sediment flushing or dredging to increase capacity. Other municipalities have the same issue and if all release sediment from reservoirs there could be potentially harmful effects on the Chesapeake Bay ecosystem. Special thanks to undergraduate student Daniel Murphy and Matthew Albright (Biological Field Station) for their contributions to the project. Poster: Thursday, April 18 PM

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**Student:** Ellen Barley

**Faculty Sponsor:** Raymond Siegrist (Secondary Education & Educational Technology)

**Implementing Geogebra into NYS Common Core Math Standards**

Through using New York State’s Common Core Standards, interactive technology was added to geometry lesson plans to allow for more student exploration and a deeper understanding. With engaging activities, students will complete the lessons with the help of GeoGebra, a free online math program. This program creates a visual and motor aid for students of need in the classroom. GeoGebra activities are hyperlinked within the online lesson allowing for quick easy access to the activity. An accessible online workbook containing all lessons and activities is available per request. Computer display: Thursday, April 18 PM

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**Student:** Zea Beckwith

**Faculty Sponsor:** Wesley Bernard (Art)

**Homeless Heroes ★**

In a single night in January 2017, a study showed 40,056 homeless veterans living in the U.S. the study also shows that three out of five homeless military veterans were housed in emergency shelters or transitional housing facilities, while two out of five were living in places "not suitable for human habitation." The most recent study done in January 2018 shows that now there are 37, 878 homeless veterans living in the U.S. with 23, 300 of them being unsheltered. While this is an improvement it is still unacceptable for the heroes of our nation. Over the past few months I have had the great honor of speaking to a handful of American heroes, our veterans. I reached out to local legions to see if any veterans would be willing to talk to me about their transitions from active duty to civilian life. In speaking to the veterans themselves I hoped to gain some insight into why there may be so many homeless veterans and how we can combat this crisis. The most common complaint that the veterans mentioned was that there was no aid in the transition from being in the service and getting out. While
some didn’t mind this and were able to find their own way, they all recognized that there are some that do need this assistance. Another key factor in how we approach this crisis is how we handle the mental health factor that many of these veterans are facing. Over 1/3 of the currently homeless veterans have been stationed in warzones at some point during their military career. While not all of them may suffer from injuries, physical or mental, from their service it has been a known underlying factor. We need to come up with a better way to screen these veterans and aid them in their recovery before releasing them from service where they are left to find their own path. 1.4 million veterans are currently at risk of becoming homeless due to poverty and lack of support networks. These men and women have fought and served our country bravely, and it is our duty to ensure when they come back that they will be cared for and have a place to call home. *Photographic display: Friday, April 19 AM*

**Student:** Hali Bedenharn  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  
**Say No To Plastic Bags: SUNY Oneonta Campus Case Study ☼**  
Polyethylene shopping bags have very low biodegradability rates, as most bags are thin and intended for single use only. They often end up in landfills or aquatic ecosystems, impair storm management systems, and are a significant source of land-based litter and marine debris. The objective of this study is to survey how consumer opinion is tied to usage of plastic bags and examine options regarding lowering future consumption rates on the campus of SUNY Oneonta. Information regarding plastic bag use collected from Red Dragon Outfitters and Mills Market and a customer survey conducted at Mills Market, regarding knowledge and opinion of plastic bags, will help to inform the creation and implementation of future regulations. This study aims to increase awareness of single use plastic bag consumption and shed light on Sodexo’s plan for a ban of single use plastic take out bags in North America by the end of 2019. *Poster: Friday, April 19 AM*

**Student:** Ari Berg  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  
**Climate Changes Effect on *Ixodes scapularis* Population Density ☼**  
The black-legged deer tick (*Ixodes scapularis*) acts as a vector for multiple species of bacterium. Most prominently, *Borrelia burgdorferi* a spirochete bacterium accredited for the propagation of Lyme disease. Given the potentially devastating effects of Lyme disease on local ecology and human health, monitoring of *I. scapularis* populations is imperative to help produce an effective species mitigation strategy. Using a multiple linear regression, I will create a model with current *I. scapularis* populations to generate population projections in accordance to future climate predictions. Data will be used from previous DEC *I. scapularis* population field studies and correlating climate observations. The model’s accuracy will be tested using statistical analyses. Ascertaining trends and associated factors to *I. scapularis* population density will provide help to combat the potential future influx of Lyme disease. *Poster: Friday, April 19 AM*

**Student:** Samantha Bouton  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  
**Plastic Bag Policies ☼**  
Plastic bags are a major cause of pollution, especially when they contaminate our oceans. For this research, I will be describing concerns associated with plastic bags and evaluating how many people know or care about this issue. To evaluate consumers’ knowledge and generate discussion, I created an online survey which consisted of short answers to provide additional information based on their degree of responses. I will also be contacting a local store to see the different steps that it takes to implement a policy on plastic bags. I will explore the different possibilities for implementing a plastic bag policy such as: banning, fees and incentives to see which would be most effective. Eleven towns and villages have a ban on plastic bags in New York and six have a fee between 5 cents and 15 cents on plastic bags, will this town be next? *Poster: Friday, April 19 AM*
Student: Gizel Brewer  
Faculty Sponsors: Elizabeth Middleton (SUNY Purchase), Kelly Gallagher (Chemistry & Biochemistry)

Membran Leakage of E. coli and S. aureus by Maximin 3

Antibiotic resistant bacteria are a widespread problem. Antibiotics are less effective, therefore new techniques are being developed to kill bacteria such as antimicrobial peptides (AMPs). One antimicrobial peptide, Maximin 3, is found in the skin secretions of the Chinese Red Belly Toad. More Maximin 3 is needed to inhibit the growth of S. aureus than E. coli. The goal of this research was to determine why this difference exists by measuring how Maximin 3 disrupts the membrane of each bacteria and causes leakage of their intracellular components. To complete this task, the bacteria were grown and their lipids were extracted. The lipids were then extruded to create uniform vesicles containing a dye and quencher. Using those vesicles, the AMP-membrane interaction was observed by measuring the fluorescence intensity of the dye. Our hypothesis was that Maximin 3 will cause more leakage in E. coli membranes than S. aureus membranes because less Maximin 3 is needed to inhibit E. coli than S. aureus. The preliminary results have verified our hypothesis. It took three times more Maximin 3 to cause leakage in S. aureus than it did for E. coli, which explains why Maximin 3 is more potent to E. coli than S. aureus. Poster: Thursday, April 18 PM

Students: Brandon Brooks, Samantha Kio  
Faculty Sponsor: Charlene Christie (Women’s & Gender Studies)

"Women Are Not Good At This" – How Stereotypes and Achievements Influence Self-esteem

Selective self-stereotyping shows a pattern of group members endorsing positive ingroup stereotypes as a protective strategy for dealing with societal discrimination (Latrofa, et al., 2012; Spears, et al., 1997). This process allows an individual to maintain a sense of solidarity with the target ingroup while also protecting their individual self-concept from any potentially damaging traits or behaviors. People may internalize positive group stereotypes while distancing themselves from negative stereotypes (Oswald & Lindstedt, 2006). This selective process allows people to acknowledge that negative stereotypes exist while simultaneously distancing themselves from any association with those negative traits or behaviors. We argue that people may also selectively identify with a given social group for similar purposes. By identifying with a negatively stereotyped group, one is protected from the personal responsibility for a specific shortcoming (e.g., “What do you expect? I’m ___.”). In contrast, identifying with a positively stereotyped group reflects well on the individual and allows one to bask in this association with what is socially valued. It is possible that the strength of one’s identification with an ingroup will not be solely impacted by the relevant positive or negative stereotypes, but will also depend on the individual’s personal abilities or achievements in a relevant domain. If one succeeds in a stereotyped domain, highlighting one’s membership in that negatively stereotyped group serves to contrast the low expectations with the high level of personal achievement. People may take additional pride in succeeding when they were expected to fail. People who are strongly identified with that ingroup may also take pride in being able to disprove a damaging stereotype that injures the rest of the group. However, we might conversely expect someone to distance themselves from a negatively stereotyped group when they have personally succeeded in the stereotyped domain. Research on social identity theory and the black sheep effect (Eidelman & Biernat, 2003) has demonstrated that the relative preference for defending one’s ingroup by derogating a problematic ingroup member versus removing oneself from the ingroup is simply based on available options. The focus is on maintaining a positive sense of identity. We used a 2 (gender) x 2 (stereotype) x 2 (test difficulty) fully between-subjects design to probe the multidimensional impact gender stereotypes have upon state self-esteem (feeling in the moment), self-presentation goals (one’s need to feel competent), and collective self-esteem (one’s feelings towards themselves in respected group). Poster: Thursday, April 18 PM
**Student:** Finella Campanino  
**Faculty Sponsor:** Tami Lapilusa (Biology)

**Assessment of the Crab Replenishment Reserve (CRR) on North Andros Island for Fishery Management in The Bahamas**

The importance of long-term fishery monitoring is a national priority in The Bahamas as fishing pressure increases and Marine Protected Areas are increasingly relied upon to replenish historically overfished areas. Government agencies in The Bahamas, including The Department of Marine Resources, are tasked with administration, management, and development of fisheries in The Bahamas while non-governmental agencies, such as The Bahamas National Trust, are tasked with the development and management of a vast system of thirty-two National Parks throughout the archipelago. The Crab Replenishment Reserve (CRR) on North Andros Island was established in 2002 as a four-thousand-acre national park to protect the best land crab habitat in central Andros and to ensure a sustainable land crab population for future generations, though harvesting in this historically important site has never been restricted or prohibited. The crab, *Cardisoma guanhumi*, is an economically important fishery resource throughout its Caribbean, Central, and South American range. Seasonal abundance of the crabs provides an easy source of income to local artisanal fishers as a dozen crabs sell for $36-60 USD depending on the season. Anecdotal reports indicate the estimated value of the annual land crab harvest is $20M USD, though the fishery take is not well-monitored, and no regulations exist in The Bahamas for this economically and culturally important fishery resource. Recent studies of the land crab fishery in The Bahamas have shown heavy collection pressure, including within the CRR, though the only large-scale crab population assessment in The Bahamas was conducted in the late 1970s. We conducted a pilot study on North Andros Island, The Bahamas during the summer of 2017 to determine appropriate methods for crab population assessment and elucidate trends in crab population density over the past 40 years. Unfortunately, the scope of our 2017 study did not allow for fully assessing the CRR as our goal was to cover a broad geographic range of North Andros Island. Successful management of the Crab Replenishment Reserve in North Andros Island, The Bahamas relies on a comprehensive survey of both the type and quantity of habitat useful to the crab at various life stages and an assessment of the density of crabs in each of these habitat types within the CRR. This study aims to determine proportion of each habitat type in the CRR utilized by land crabs while also completing a comprehensive survey of the land crab population density within the CRR to provide necessary data for development of a Draft Management Plan for the CRR on North Andros Island, The Bahamas.  

**Poster: Thursday, April 18 PM**

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**Students:** Stephanie Carpenter, Nicholas Kilmer  
**Faculty Sponsor:** Paul French (Physics & Astronomy)

**Testing and Refinement of the Beats Method of Finding Absolute Pitch**

One of the most common ways for a musician to tune an instrument is to use a chromatic tuner. They are inexpensive, convenient and accurate within about 5 cents, or 5% of a semitone. The most common reference setting on a chromatic tuner is A4, which is 440 Hz. Using our tuners, we can measure the relative pitch (e.g.: 20 cents above A), but the tuner fails to give the absolute pitch (e.g.: 20 cents above A4). In our experiment, we will test a recently developed method that uses the subtractive nature of the beats phenomenon to graphically determine the absolute pitch of a tuning fork. The method involves setting a tunable tuning fork at several different frequencies close to the frequency of the tuning fork we’re trying to measure. When the tuner results are compared to the beats results, the data are linearized to produce a graph whose slope is the desired frequency. Preliminary data show that this method is accurate to within 5.6 cents, which is almost as good as the precision of the tuner. We plan to continue testing this method to determine the optimal range of beat frequencies, how best to determine the beat frequencies, which tuning forks can be measured using our tunable tuning fork, and whether we can design and build our own tunable tuning fork(s) that will work with this method.  

**Poster: Thursday, April 18 PM**
**Student:** Samantha Cassata (G)

**Faculty Sponsor:** Jeffrey Heilveil (Biology)

**Identification of Fireflies (Coleoptera: Lampyridae) at Thayer Farm, Otsego County, NY**

Fireflies are a family of insects that are understudied, especially in their species distribution. Minimal information is documented for the state of New York, and there are no species records for Otsego County. A lack of distributional data makes it difficult for other research to be completed on fireflies, and impedes understanding about which firefly species, if any, require protection. In addition, there are currently no firefly identification keys for the state. The most appropriate key to use was from the Canadian province of Ontario. Fireflies from Thayer Farm, a property of the State University of New York College at Oneonta (SUNY Oneonta) Biological Field Station, were collected and initially identified based on morphology. Molecular techniques were also applied and the DNA barcoding gene, cytochrome oxidase I (COI), was used for molecular species identifications. A total of 13 species from 6 different genera were discovered. As no previous county record exists in the literature, each species recovered was documented as a new species record for Otsego County. *Pyractomena palustris* is recorded for the first time as occurring in New York. A collective taxa list for New York was created based on current published literature on fireflies and a local-specific species key was constructed. (Lampyridae, Otsego County, Distribution). *Poster: Friday, April 19 AM*

**Student:** Stradder Caves (G)

**Faculty Sponsor:** Daniel Stich (Biology)

**Relating Grass Carp Growth to Hydrilla Abundance in a Southern Reservoir**

Grass carp (*Ctenopharyngodon idella*) are a long-lived, large-growing species of herbivorous fish. Because of their voracious feeding behavior, grass carp have been stocked across the United States for aquatic plant management, commonly hydrilla (*Hydrilla verticillata*). Triploid grass carp were long believed to have a maximum age of approximately 11 years based on historical, large-scale stocking efforts through which aquatic plants were eliminated. But recent studies in systems where preferred foods were not eliminated due to over-stocking have found that the maximum age far exceeds previous estimates. In Lake Gaston, VA and NC, more than 130,000 grass carp have been stocked since to control invasive hydrilla. Hydrilla coverage peaked at just more than 1,300 ha in 2003, reaching its control effort in 2013, and has since been reduced to about 100 ha through a combination of grass carp stocking and herbicide applications. A Bayesian approach was used to estimate changes to growth and mortality of grass carp from 1995 to 2017. We observed a drastic reduction in maximum size ($L_\infty$) over time, and this was directly linked to reductions in hydrilla surface coverage in the reservoir. Likewise, we demonstrate projected increase in fish mortality through indirect relationships with growth parameters. These estimates can be used to adjust stocking and management expectations in long-term management programs incorporating grass carp. *Poster: Friday, April 19 AM*

**Students:** Kelly Comack, Hannah Hicks

**Faculty Sponsor:** Jen-Ting Wang (Mathematics, Computer Science & Statistics)

**Effect of Music on STEM Majors**

Studies have found that music plays a major role in the academic performance of college students. There was evidence that listening to music while studying relieved stress which also helps the college student focus on his or her studies. Our goal is to see how listening to different music types affect STEM majors’ performance on algebraic calculations. We will conduct an experiment, in which two sets of algebra questions were compiled, where the easy set (4th grade math) has 48 questions and the hard set (5th or 6th grade math) has 45 questions. We choose three levels of different types of music; no music, classical music and a popular catchy song. STEM majors who are SUNY Oneonta students will be selected to answer both sets of questions with two different music types in a random order. Each participant will have 2.5 minutes to answer as many questions as they can. Their numbers of correct and attempted answers will be recorded. We will then compare the percentages of correct answers among the three music types and between the two sets of questions. Statistical analysis such as an ANOVA will be used to analyze the results. *Poster: Friday, April 19 AM*
Students: Danielle Darrow, Kayla Norton
Faculty Sponsor: Katherine Lau (Psychology)

The Moderating Effect of Friendships on Childhood Physical Punishment and Borderline Personality Traits

Past research has consistently found associations between Borderline Personality Disorder (BPD) and the experience of past abuse but has not studied the possible moderating effects of positive friendships on the development of these BPD traits. This study examines the relationship between childhood physical punishment and young adult BPD traits, and further investigates whether the development of positive friendships would act as a moderator between the experience of punishment and development of BPD traits. Poster: Friday, April 19 AM

Student: Sabrina De La Rosa
Faculty Sponsor: Maria Chaves Daza (Africana & Latino Studies)

With Loving Arms: A Story of a Family that was Ripped Apart at the Hand of the Immigration Policies of the United States

With Loving Arms is a play I wrote about an immigrant family who is deeply affected by current immigration policies. This play tackles the ideas of how people who face I.C.E. agents are often treated and how no one pays much attention to the brutality they face. With my play, I would like to bring awareness to those who do not know much about how I.C.E. agents treat people and give a deep close to a home story about how people’s lives can drastically be changed after just one encounter. Families are torn apart every day at the hands of the immigration policies and no one focuses on how that impacts us Americans especially the Latino and Hispanic communities. I did research about the immigration detention center conditions as well as the life of an immigrant in urban areas focusing on New York City while taking Latino Theater in the fall of 2018. My research informed the context and information that give life to this story. Note: This play may evoke some emotions that may cause some people to feel uncomfortable. If at any point during the presentation you feel as such you are more than welcome to step out of the room. Oral presentation: Thursday, April 18, 4:30 PM

Student: Alison Deane
Faculty Sponsor: Dona Siregar (Economics, Finance & Accounting)

Diversifying Your Portfolio with Cryptocurrency?

Cryptocurrencies have become more popular in recent years for diversifying portfolios. In my paper I studied the correlation between three cryptocurrencies and six financial assets. The cryptocurrencies included Bitcoin, XRP, and Etherum. The six financial assets included, S&P 500, Gold, VIX, USS, GSCI, and Bonds. By using a regression and a correlation to analyze the relationship between the cryptocurrencies and the financial assets, I found that cryptocurrencies would be a useful addition to an investor’s portfolio for diversification purposes. Poster: Friday, April 19 AM

Students: Gina DiGiovanni, Gillian Suzzan, Kevin Reyna, Andrea Gomez
Faculty Sponsor: Yoko Takagi (Psychology)

Parental Beliefs and Parenting in Subcultures within the Greater New York Metropolitan Area

An exploratory pilot study examined parental beliefs and perception about developmental goals in middle childhood, a largely under-researched area. Much research on parental beliefs about developmental goals for children has focused on infancy and early childhood, but little on parental beliefs during middle childhood (e.g., Schulze & Harwood, Schoelmerich, & Leyendecker, 2002; Suizzo & Cheng, 2007). Our focus was on the different sub-cultures, which, we assume, are prevalent in different urban communities, and subcultures are a cultural group within a larger cultural group. That is, within the larger cultural group there are subsections that form their own belief systems that separate them from the other smaller groups but overall, the subgroups, form back up together and coexist under the same cultural umbrella. Accordingly, on the standpoint of subgroups in the NYC metropolitan area, we hypothesized that there would be different parental beliefs and styles within the groups. Parents
from four different urban environments: Hoboken (NJ), Long Island, Staten Island, and Brooklyn (NY) were recruited and asked about their parental beliefs about their children’s developmental goals, the perception of other parents’ developmental goals, and parenting. Qualitative interviews and narrative inquiry successfully captured some of the subtleties of cultural narratives from the participants with different cultural backgrounds (a coding system cited from Takagi et al. [2017]). The selected results include that parents residing in Staten Island showed a somewhat different pattern of developmental goals than the ones in other urban areas. In addition, when asked about what source they go to for information and advice about their parenting, the majority of parents from Staten Island relied on the Internet or books for guidance, whereas the majority of the other parents relied on relatives. Overall, we believe that this study expands on our notion of subcultures with a focus on urban areas in the metropolitan area. In the future, we hope to increase the sample size to make systematic comparisons (e.g. developmental goals by grade/ age group) and gain further insight into the lifestyles of parents residing in Staten Island. *Poster: Friday, April 19 AM*

**Student:** Taylor Dolan  
**Faculty Sponsor:** Christopher Karmosky (Earth & Atmospheric Sciences)

**ENSO and Flooding on the Mohawk River from April to September 1950 to 2017**

The overall purpose of this research was to see if there was a relationship between the El Niño-Southern Oscillation (ENSO) and if they affected flooding in the Mohawk River watershed at five different station locations. Specifically, this work examines flooding in Rome, Little Falls, Schenectady, Gilboa, and Cohoes from April to September from 1950 to 2017. Data for this study included stream gauge height data and recording the amount of times each station rose above flood stage. Only the number of times the river flooded was recorded, and not the actual height above the banks. The ENSO phases from 1950 to 2017 were also recorded. A major trend that was seen was that during a La Niña phase, there was more tropical and non-tropical flooding. In this study, the authors discovered that more non-tropical floods, which are floods events that are not caused by tropical events, such as a hurricane, occur during a La Niña phase rather than during a Neutral or El Niño year. El Niño phases exhibited more non-tropical flooding when compared to a Neutral year and there were more tropical floods, which are flood events directly caused by a hurricane, tropical storm or tropical depression, during a La Niña than any other phase. Based on the findings, one reason why there was more non-tropical flooding in a La Niña than any other phase is because La Niña brings in more precipitation over the region. Although La Niña does not occur as frequently as an El Niño, La Niña is known to last longer with colder and stormier conditions. *Poster: Friday, April 19 AM*

**Student:** Hayley Dower (G)  
**Faculty Sponsor:** Daniel Stich (Biology)

**Population Dynamics of Spawning Walleye in Otsego Lake, NY**

The study of spawning walleye in Otsego Lake, NY investigates the population dynamics of the stocked walleye population. Walleye are stocked for purposes ranging from establishing and enhancing recreational fisheries to biological control of landlocked alewife (*Alosa pseudoharengus* Wilson 1811) populations in New York (Cornwell 2001). Alewife control is the reason for walleye stocking in Otsego Lake (Otsego County). In order to gain a better understanding of this population, I relied on data that was collected before and during the spawning run in spring 2017 and 2018. Each year, walleye were collected during the spawning run using pulsed DC backpack electrofishing. All spawning fish were sexed, measured, and implanted with a unique PIT (passive integrated transponder) tag. Scales were collected from each fish to estimate age. The rest of the collected data was used to estimate population abundance. This information can be used to future management of the Otsego Lake walleye population. *Poster: Friday, April 19 AM*
**Student:** Kyle Dudgeon  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)

**Mapping Eagle Flight Paths in the Proposed Bluestone Wind Project Area, Sanford, NY ☼**  
Wind power is a necessary component of a low-emissions energy system, to help reduce the impacts of human-caused climate change; however, industrial scale wind projects have known effects on both bald and golden eagles. Beginning in October of 2017, Delaware-Otsego Audubon Society (DOAS) Observers conducted raptor surveys in the proposed Bluestone Wind Project area. Surveys were intended to observe and record eagle habits, behaviors and flight paths within the project area of Sanford, NY, to determine risk. As an additional project in accordance with final reports, I traced flight paths from all conducted DOAS surveys from March 2018 into Arc GIS to create digital maps for inclusion in the NYS Article 10 Environmental Review Process for large-scale energy projects. Representations of flight paths can be mapped with wind turbine locations to visualize the risk eagles face from the air. *Poster: Friday, April 19 AM*

**Students:** Nicole Faraci, Sarah Curtin, Alexandra Cunningham  
**Faculty Sponsor:** Katherine Lau (Psychology)

**The Moderating Effect of Self-Esteem on the Association Between Disordered Eating Habits and Social-Closeness in Fraternity and Sorority Life**  
Research focuses on the pervasiveness of eating disorders within the college student population, focusing mainly on women. This study examines the association between social-closeness and disordered eating habits with self-esteem. Results indicated a significant interaction between social-closeness and self-esteem in the prediction of eating problems in females, and not males. *Poster: Friday, April 19 AM*

**Student:** Sam Feinman  
**Faculty Sponsors:** Philip Sirianni, Kai Chen (Economics, Finance & Accounting)

**The Effect of Green Policies on the U.S. Stock Market ☽**  
This paper examines whether the announcement of U.S. environmental policies lead to abnormal stock price returns. Using market data from Compustat, I examine six different environmental policies that span from 1991-2015. I employ a risk model to calculate the abnormal return (AR) and cumulative abnormal return (CAR) for a variety of industries. *Poster: Friday, April 19 AM*

**Students:** Constance Finnerty, Casey McCurty  
**Faculty Sponsor:** Tracy Allen (Geography & Environmental Sustainability)

**Arsenic in Lake Atitlán, Guatemala ☽**  
Arsenic tests were done with portable kits, and samples were taken locally from various places where public water was accessible, as well as private businesses and landowners. Water from these sites were also tested for nutrients, turbidity, pH, temperature, and other minerals in order to test for other contaminants in the water. Separate bottles were also used to collect water that would be later brought to a lab to test for more accurate results on arsenic levels. The tests used a small strip that would change color corresponding with the arsenic levels that was found within the water sample. These estimations were taken down for baseline data in order to better identify problem areas that will need special attention. Lake samples were also organized by depth, and samples were tests with the kits every 25 m, or when available due to time constraints presented by these portable tests. These portable testing kits ultimately became unreliable due to some sort of contamination during transport, but this contamination only eliminated the last few stream samples, and lab sampling was done to ensure quality of results. The results showed unusually high amounts of arsenic in above ground watersheds, especially those that were quite literally untreated buildings filled with water. The surface arsenic levels from the lake also showed arsenic levels almost thirty times the amount suggested by the World Health Organization, as compared to benthic levels which contained not nearly as much. The source of the high levels of arsenic are thought to come from volcanic rocks at the bottom of the lake. It is possible that the
infrastructure changes in the area and movement of rock and sediment are causing some of these issues, as there were higher arsenic levels in streams that were present in construction areas. More sampling would need to be done to prove this is true, and testing done to see how to best mitigate these increasing levels of arsenic. *Poster: Friday, April 19 AM*

**Students:** Rebekah Finster (G), Sarah Pokrzywa  
**Faculty Sponsor:** Jacqueline Bennett (Chemistry & Biochemistry)  
**NMR Study of Phenylsemicarbazones**  
Phenylsemicarbazones (PSCs) are imines synthesized through a condensation reaction between phenylsemicarbazide and an aldehyde or ketone. PSCs are known for their antifungal antibacterial and anticancer properties which are mediated through their binding to copper or iron in cells. A complete comprehensive NMR study of various PSCs will be done in order to verify their structures. A variety of 1D and 2D NMR will be analyzed including Proton-Carbon DEPT, Double Quantum Filter (DQF) homonuclear correlation spectroscopy (COSY), Heteronuclear Multiple Bond Correlation (HMBC), and two different runs of 1H-15N Heteronuclear Multiple Quantum Coherence (HMQC). By combining the analysis of all of these types of NMR, this study will be able to verify the exact structure as well as develop patterns for NMR signals of phenylsemicarbazones. *Poster: Thursday, April 18 PM*

**Student:** Bailey Gano  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  
**Otsego County Electric Grid Proposal**  
Electricity plays a vital role in modern industrial society. Businesses, organizations, and individuals relying on electricity expect it to be reliable and affordable, but providers struggle to keep up with demand, especially in the face of stressors such as climate change and an outdated distribution system. To keep up with increasing demand, increase customer choice, create a greener grid, and prevent future stressors to the system, New York State has embarked on a “Reforming the Energy Vision” initiative. Communities and utility companies across the state are beginning to adopt the REV, taking the opportunity to update to smart technologies or adopt entirely new grid systems over all, but not all localities have embraced the REV. This research focuses on Otsego County, where citizens and leaders have been engaged in a public debate regarding the future of energy in the county. While much attention has been devoted to ways to promote or discourage specific energy sources, less attention has been given to the electric grid, which is extremely low capacity, outdated, and stressed electric. Using what other counties and cities have done by embracing the REV, I am proposing strategies to update the county’s electric grid. By addressing such problems, we could improve efficiency, encourage economic development, increase reliability, and help minimize the effects of climate change, all while maintaining affordability. *Poster: Friday, April 19 AM*

**Students:** Joshua Garufi, Heather Noulis  
**Faculty Sponsor:** Katherine Lau (Psychology)  
**Attitudes Towards Police**  
In light of recent events such as, the shooting in Ferguson that killed Michael Brown Jr., the illegal chokehold of Eric Gardner that resulted in death, and the fatal shooting of a 12-year-old boy, Tamir Rice, the heavy media coverage of these and related events have led to increasingly negative views of police officers. Negative views and attitudes towards police are associated with low self-control, stronger deviant attitudes, and greater association with criminal behaviors (Baron, 2016). If negative views towards police can become positive, it may be possible to decrease problematic attitudes (e.g., taking a little bit of money that is not yours is okay) and behaviors (e.g., aggression, delinquency). The following are all examples of influences that have been found to have an impact on attitudes towards police. Race is an important part in determining attitudes towards police. When comparing black, Latino, and white males, with age only, white males’ attitudes towards police became positive and black and Latino males’ attitudes became negative (Fine & Cauffman, 2015). This association may be due to disproportionate minority contact (Lau, Rosenman, Wiehe, Tu, & Aalsma, 2017), and
experiencing more discrimination and unfairness amongst minorities when interacting with the police (Zapolski, Banks, Lau, & Aalsma, 2017). Further, prior negative contact with the police tend to lead to negative attitudes and perceptions of police (Hinds, 2007). Compared to adults, adolescents view police as being less legitimate (Murphy, 2015). Further, particular personality traits, like psychopathy and narcissism (Augustyn & Ray, 2016; Lau & Marsee, 2013), and attitudes like moral disengagement and preparation bias (Zapolski et al., 2017; Zapolski, Garcia, Jarjoura, Lau, & Aalsma, 2016) have been linked to more negative attitudes towards police and greater engagement in aggressive and delinquent behaviors in children and adolescents. We have gathered a sample of 320 emerging adults between 18 and 25 years of age to explore how positive and negative attitudes towards police develop, and how this may be associated with antisocial behaviors. The study has three goals: 1) Examine how race/ethnicity and skin color, personality traits, and exposure to good or bad adult role models may influence attitudes towards police, beliefs about the causes of antisocial behaviors, and pro-criminal attitudes; 2) Examine the association between race/ethnicity and skin color, personality, attitudes towards police, beliefs about antisocial behaviors, and pro-criminal attitudes with engaging in aggressive and delinquent behaviors; and 3) Explore these relationships by whether an individual has had direct contact with police in the past or not. Poster: Friday, April 19 AM

**Student:** Erin Gilligan (G)

**Faculty Sponsor:** Daniel Stich (Biology)

**Integrating Climate Change into Growth Models for American Shad Populations throughout the Atlantic Coast**

American Shad *Alosa sapidissima* are anadromous fish with populations ranging along the entire U.S. Atlantic coast. Being highly sensitive to environmental factors, populations have been on a noticeable decline throughout their historic range. It is believed that the three primary drivers of their population and range include hydropower dams, overfishing, and global climate change. To date, we have found that predictions about population abundance of American Shad are particularly sensitive to information about fish growth, in addition to potential climate effects. To investigate this issue, growth models were developed to characterize effects of climate change on historical growth of American Shad using temperature as a continuous predictor of growth parameters. We investigated these trends across a number of populations, to result in regional and river-specific relationships that should aid in assessing changes in these stocks. The development of these models will help to better understand what the future of climate change may bring for this species, and will lead to more robust management decisions through the incorporation of this information in decision support models. Poster: Friday, April 19 AM

**Student:** Nicholas Giordano

**Faculty Sponsors:** Kpoti Kitissou, Michael McAvoy (Economics, Finance & Accounting)

**The Marginal Revenue Product of a Men's College Basketball Player**

In 2005, the NBA began enforcing a statute that only permitted players 19 years of age or older to declare for the NBA draft. This statute has forced high school basketball players into playing at least one year of collegiate basketball prior to declaring for the NBA draft. The presence of players in the NCAA for at least one year allows for the marginal revenue product the premium men’s basketball players generate annually for their universities to be studied. Revenue for the 2010-2011 season provided by universities’ athletics department within the Equity in Athletics Data Analysis are analyzed to study the marginal revenue products of the premium players within the Division 1 “Power 5” conferences and the Big East Conference. Results indicate that players either drafted into the NBA or played at least one game in the NBA generate significant revenues compared to the athletic scholarship and grant-in-aid they receive. Poster: Thursday, April 18 PM
**Student:** Matthew Gornbein  
**Faculty Sponsor:** Dona Siregar (Economics, Finance & Accounting)  
**The Financial Crisis and the Effects on Corporate Bond Spread**  
An analysis of the liquidity rate for a corporate bond of a particular firm from 2008-2018 and how it affects the bond’s spread. This analysis uses various measurements to determine the rate of liquidity for a bond on a quarterly basis. The spread for a corporate bond is dependent on the bonds rate of liquidity. When the rate of liquidity for a bond is low; then the spread for that corporate bond is likely to increase. The illiquidity of bond rises much more during a financial crisis verses times when there is not a crisis.  
*Poster: Thursday, April 18 PM*

**Student:** Alec Gudowitz  
**Faculty Sponsor:** Florian Reyda (Biology)  
**Crustaceans of the Long Island Sound**  
Long Island Sound is a tidal estuary of the Atlantic Ocean, lying between the shores of New York and Connecticut. The Long Island Sound is a place where saltwater from the ocean mixes with fresh water from rivers draining from the land or an estuary. It is approximately 113 miles long and 21 miles wide. It is a significant area in the region and serves as feeding, breeding, and nursery areas for many animal species, some of which are of extreme economic importance to the region. This poster presentation is based on my experience as an intern for the New York State Department of Environmental Conservation (NYSDEC) in which I assisted with animal tagging and survey work in the Long Island Sound and other waters of New York during early May to late August, 2018. I contributed to data collection of any type of species we caught in order to better understand population numbers. My activities were centered primarily on market and dock sampling. The general pattern that was observed was that fewer and fewer crustaceans are being found in the sound over the years. My poster explores the many different causes of these declines. The species I will be examining and collecting data for are Blue crab (*Callinectes sapidus*), The American Lobster (*Homarus americanus*), Spider Crab (*Libinia emarginata*), and Atlantic Horseshoe Crab (*Limulus polyphemus*).  
*Poster: Friday, April 19 AM*

**Students:** Hannah Harby, Amanda Rhodes, Alexandra Vlk (G)  
**Faculty Sponsor:** Elizabeth Bastiaans (Biology)  
**Comparing Contemporary to Historical Fluctuating Asymmetry in Plastron Scutes of Wood Turtles**  
Fluctuating asymmetry in bilaterally symmetric organisms may be linked to the instability of a species, possibly playing a role in *Glyptemys insculpta* (Wood Turtle) declining populations. Using the software ImageJ and data previously collected on historical Wood Turtles in the Oneonta area, modern day specimens (n = 42) were measured to compare plastron scute area. Projected results include a difference in total area between the two classes of turtles, indicating contemporary Wood Turtles to have a higher percentage of fluctuating asymmetry. Comparative results may designate a relationship of inbreeding within the species, which would further decrease the population due to insufficient genetic variation.  
*Poster: Friday, April 19 AM*

**Student:** Stephen Hatalla  
**Faculty Sponsor:** Joshua Nollenberg (Physics & Astronomy)  
**Planet Nine Search**  
Based on years’ worth of data and computer model predictions, we search for visual confirmation of the presence of a ninth planet in our solar system. We build on the work we have done in previous semesters to analyze our equipment’s fitness for the observation, and to refine our techniques of image analysis. We use simulations produced by Josh Louden, a SUNY Oneonta alum, to see where on the sky we should expect to find Planet Nine. By fitting data of known Kuiper Belt objects’ orbits, he defined what the orbit of Planet Nine ought to look like and then extrapolated that into sky coordinates. We have taken images of several objects in the sky already, in preparation for our main search. By doing a few basic
photometric analyses to our images, we will find the limit of brightness which we can reliably observe. We can also produce prediction data for the light profile of the object, and thus how it ought to look through different optical filters. We will use all of this data to optimize our observations. We want to spend as little time observing a section of sky as possible, because even with all of the prediction data, we are still left with an enormous amount of sky to cover. We need to gather enough light to reliably detect our planet, and balance that against the amount of time it will take. With the equipment at SUNY Oneonta’s College Camp Observatory, we have the capacity to detect Planet Nine at its predicted size and distance. By developing our image analysis capabilities, we will be able to feed all of the data we collect into our computer, and have it analyze the images for traces of Planet Nine. 

**Poster: Friday, April 19 AM**

**Students:** Connor Hatton, Robyn Margolin  
**Faculty Sponsor:** Allan Green (Chemistry & Biochemistry)

**Regulation of Lipolysis by AMPK ★**

Metformin is a drug used to treat type 2 diabetes mellitus by activating an enzyme called AMP-dependent protein kinase (AMPK). Activation of AMPK has been shown to decrease hepatic (liver) glucose output and decrease blood sugar levels [1, 2]. The aim of the research is to find out how metformin affects lipolysis. Based on prior knowledge about AMPK, activation of this enzyme should lead to an increase in lipolysis, but instead metformin has been shown to inhibit lipolysis in isolated fat cells. In previous studies, isoproterenol was used to stimulate lipolysis which we believe may have interfered with the effect of metformin. The proposed hypothesis is that if lipolysis is stimulated with adenosine deaminase (ADA) instead of isoproterenol, lipolysis will not be inhibited. The rate at which lipolysis occurred was measured based on the change in glycerol concentrations over time. The goal of the research is to better understand the relationship between lipolysis and the diabetic drug metformin. Although the research has not yet been completed in its entirety, promising results have been obtained but not reproduced. More research is required before drawing any final conclusions. [1] Gasic, S., Tian, B., & Green, A. (1999). Tumor necrosis factor α stimulates lipolysis in adipocytes by decreasing G(i) protein concentrations. Journal of Biological Chemistry, 274(10), 6770–6775. [2] Green, A., Johnson, J. L., & Milligan, G. (1990). Down-regulation of G(i) sub-types by prolonged incubation of adipocytes with an A1adenosine receptor. 

**Poster: Thursday, April 18 PM**

**Student:** Taylor Held  
**Faculty Sponsor:** Rahul Rastogi (Communication & Media)

**Sustainability in the Everyday: Exploring Everyday Practices of Sustainability in Rural India ☼**

Our research studies the intersections of cultural epistemologies and environmental sustainability. The current presentation is based on our field-observations, interactions, and experiences during a two-week research trip to rural Bundelkhand, India. Through our research we seek to describe how culture and environmental concerns manifest in sync in the landscape of communities living in rural Bundelkhand in India. We describe local cultural practices that address various aspects of environmental sustainability, and how these practices inform everyday life-practices of people in these communities. We find that the culture of the rural communities in India is constantly adjusting and being reshaped in response to the environmental phenomena they encounter. Ultimately, this presentation is an attempt to highlight the dynamic and deep integration of sustainability practices in everyday lives of community members, informed by local cultural epistemologies concerning the environment. 

**Poster: Friday, April 19 AM**

**Students:** Benjamin Hubert, Brendan Bonura  
**Faculty Sponsor:** Sen Zhang (Mathematics, Computer Science & Statistics)

**Enhancing Nao’s Tic-Tac-Toe AI using a Monte Carlo Tree Search Algorithm**

Nao is a Linux-based autonomous, yet programmable humanoid robot developed by Aldebaran. It comes equipped with a rich set of features including spatial positioning, WiFi connectivity, movement sensors, cameras, microphones, image processing and speech recognition. Nao also has a growing
repository of applications that can be used to demonstrate its power and potential. To develop third party Nao apps, software developers usually begin by learning Choregraphe, a multi-platform desktop application that provides a user friendly graphical blocks-based drag-drop programming environment. Choregraphe allows users to create complex behaviors, animations and non-trivial emotive interaction with people, test them on a simulated robot, and monitor and control Nao, even without writing a single line of code. This makes Nao accessible to anyone, as it has become popular in research, educational, and recreational environments. To develop even more sophisticated applications for Nao, programmers may also use C++, Java, and Python, which however could pose a steep learning curve and demand a wide mix of computing knowledge. Initially, we began programming Nao to play Tic-Tac-Toe with legitimate moves and interact with the user. As the development process has progressed, we have integrated a Monte Carlo Tree Search algorithm to the previous Tic-Tac-Toe application to allow Nao to make intelligent game decisions. Currently, the user and Nao exchange moves on the board by stating the row and column they would like to place their moves. Nao uses speech recognition and text-to-speech synthesis to communicate with the user and is programmed to understand predefined user responses. The software development methodology employed in this project was agile, incrementally implementing core game mechanics first, and later exploring more advanced features. This project lays a foundation to develop more sophisticated games such as connect-4, chess, and go, or explore new interactive games to be played with Nao in the future. 

Student: Savannah Irwin  
Faculty Sponsor: Ursula Sanborn-Overby (Psychology)  
Evaluating the Gender Stereotypicality of Unisex Names  
Many areas of research require the use of male and female names in various materials such as vignettes. Often, it is important that researchers are able to match the male and female names in terms of their masculinity and/or femininity. Additionally, some researchers need to use a name that is perceived as gender neutral, and/or is perceived as equally masculine and feminine and equally appropriate for both sexes. The goal of this series of studies is to get information that will allow researcher to use the appropriate names for their study by having participants evaluate each name separately on a variety of measures. Because of the lack of truly androgynous names from Study 1, Study 2 was designed to only look at unisex names. For this study a list of 103 unisex names were tested. The unisex names used for this study were taken from a list of the most popular names that are equally given to males and females from the United States Social Security Administration. Once the final list was compiled, the names were randomized and split in half. Therefore, one half of participants received 52 of the names and the other half received the other 51 names. As in Study 1, participants were asked to rate each name in terms of whether it was primarily associated with males or females, the masculinity and femininity of the name, the appropriateness for naming a boy vs a girl the name, and what age is typically associated with the name. Data collection is ongoing, but preliminary data (N=168) indicates that there are several names that are perceived as being equally masculine/feminine (i.e., androgynous) and equally acceptable for and equally typical of males and females.

Student: Cindy Isidoro  
Faculty Sponsor: Gregory Fulkerson (Sociology)  
Bringing Awareness of Food Waste Reduction and Composting ☼  
Each year SUNY Oneonta typically produces 800 tons of garbage which ends up in landfills. Part of this waste is food, usually food that has not been consumed. The Campus Composting Project was initiated in 2013, the composter is located behind the Wilsbach Building. Finding a system where students could be involved with the composting project was one of the objectives. Another objective was to gather data about the compost, since there wasn’t any previous data from the compost being produced. In the 2018-2019 school year there are student volunteers working on the composting, on a weekly basis. Data such as the height and temperature of the compost pile were obtained. There were food waste audits at Mills and Wilsbach dining halls. The weight and type of food waste were recorded. If awareness of food waste is shown to students, then they will make sustainable decisions. Having
incentives and programs can encourage students to reduce their food waste and learn more about composting. This poster will analyze the compost data and make recommendations. **Poster: Friday, April 19 AM**

**Students:** Selena Jelic, Keenan Jones  
**Faculty Sponsor:** Katherine Lau (Psychology)

### The Associations between Subtypes of Overprotective and Nurturing Parenting with Borderline Personality Traits

Borderline personality disorder (BP) is marked by severe emotional dysregulation, unstable interpersonal relationships, impulsive behaviors, self-injurious tendencies, and an increased risk for suicide (Chechko, 2016). Prior research has found that low parental care and high overprotection are associated with the development of BP (Boucher, 2017). However, there is a lack of research that investigates which subtypes of these parenting styles uniquely predicts BP. Nurturance involves the support of a child’s identity and emotional self-management by providing autonomy support, social rewarding, involvement, and responsiveness (Sebire, 2016). Therefore, low nurturing parents are often emotionally invalidating and focused more on themselves. Particularly, parents low in responsiveness (warmth) are unsupportive and lack sensitivity to their child’s physical and emotional needs (Landry, 2001). Overprotection can be defined by a level of maternal or paternal protection that is excessive with respect to the developmental level of the child. The parent may be overly responsive to the child’s needs through excessive monitoring and overinvolvement (Brenning, 2017). Further, overinvolvement could take form as hostile control or even abusive behaviors (Boucher, 2017). In the present study, we examine the associations of nurturance, overprotection, their subtypes, and BP in a sample of emerging adults. Based on prior research, we hypothesize that low parental nurturance will have the strongest association with BP. Further, we hypothesize that responsiveness will have the strongest nurturance subtype association with BP and that overinvolvement will have the strongest overprotection subtype association with BP. Participants were 420 undergraduate students ($M_{age}=19.1$ years, $SD=1.3$; 71.2% female, 28.8% male; 76% Non-Hispanic White, 14% Hispanic, 3.3% Black, 2.1% Asian, 3.3% other). The Comprehensive General Parenting Questionnaire (Sleddens et al., 2014) was used to measure total parental nurturance and its subtypes of autonomy support, social rewarding, responsiveness, and involvement, and to measure total parental overprotection and its subtypes of excessive monitoring and overinvolvement. The Borderline Personality Questionnaire (Poreh et al., 2006) was used to measure BP. All Cronbach’s alphas ranged from acceptable to excellent (.79 to .96). In a regression analyses, we entered age, sex, and ethnicity as control variables, with overprotection and nurturance as the predictors and BP as the criterion variable. Results showed that lower nurturance was associated with greater BP ($\beta = -.37, p < .001$), and greater overprotection was associated with greater BP ($\beta = .12, p < .01$). In two separate regression analyses, we simultaneously examined the subtypes of parental nurturance predicting BP, and the subtypes of overprotection predicting BP, while controlling for age, sex, and ethnicity. For nurturance, autonomy support ($\beta = -.17, p < .05$) and responsiveness ($\beta = -.29, p < .001$) uniquely predicted lower BP. Excessive monitoring uniquely predicted greater BP ($\beta = .12, p < .05$), however excessive involvement did not. The present study examined the unique associations of nurturance, overprotection, and their subtypes with BP. As hypothesized, low parental nurturance had the strongest association compared to overprotection. Further, the subtype of responsiveness had the strongest association among nurturant parenting. Inconsistent with hypotheses, excessive involvement had no significant association. Results will be discussed. **Poster: Friday, April 19 AM**

**Students:** Selena Jelic, Laci Nellis, Nicolette Nault  
**Faculty Sponsor:** Katherine Lau (Psychology)

### The Influence of Interpersonal Sensitivity on the Friendships of Borderline Personality Disorder

Borderline Personality Disorder (BPD) is a psychological condition characterized by pervasive instability in mood, serious interpersonal problems, severe impulse control difficulties, inconsistent self-image, self-injurious behaviors, and an increased risk of suicide (Öğünç et al., 2018). BPD is well known for its diverse symptom presentation, however, studies have shown that BPD symptoms can
be organized around key variables such as emotional instability, impulsivity, and interpersonal dysfunction (e.g., Sanislow, Grilo, & McGlashan, 2000; Silverman et al., 1991). Interpersonal and family relationships of those with BPD are often characterized as being intense and turbulent, such that those with BPD tend to swing between idealization and devaluation of others (Herr et al., 2013). Although interpersonal dysfunction is commonly understood as a core feature of BPD, there is limited research that investigates the specific factors that may influence the problems with interpersonal relationships experienced in BPD. There are numerous types of interpersonal relationships people experience in their daily lives such as family relationships, intimate relationships, professional relationships and friendships. Friendship is a mutually exclusive social relationship between two individuals. The quality of friendship can be described through the fulfillment of six friendship functions; stimulating companionship, help, intimacy, reliable alliance, self-validation, and emotional security (Mendelson & Aboud, 2012). Maintaining stable friendships is one of the many struggles that come with the interpersonal difficulties among BPD. Boyce and Parker (1989) first defined interpersonal sensitivity as tendency to misinterpret others’ attitudes and behaviors. Interpersonal sensitivity has also been defined as the feeling of inadequacy and inferiority during interpersonal interactions (Derogatis & Melisaratos, 1983). Research has shown that, interpersonal sensitivity has the potential to disrupt social relations and daily functioning, through outbursts of anger. Thus, it can be reasoned that high interpersonal sensitivity may lead to intense anger and aggression within interpersonal relationships, such as friendships, among those with BPD. Which means that those with high interpersonal sensitivity would report lower quality of friendship amongst those with high BPD traits. In the present study, we examine the associations of BPD, interpersonal sensitivity, and the quality of friendship in a sample of emerging adults from the general population. Based on prior research, we hypothesize that interpersonal sensitivity will be positively associated with BPD. Further, we hypothesis that interpersonal sensitivity will be negatively associated with friendship quality. Lastly, we hypothesize that interpersonal sensitivity moderates the association between BPD and quality of friendships.

Poster: Friday, April 19 AM

Student: Mahmmod Jodeh
Faculty Sponsor: Joshua Nollenberg (Physics & Astronomy)

Dark Matter and X-ray Gas Distributions in Colliding Galaxy Clusters

Last year, we investigated the statistics regarding the observed separations of dark matter and x-ray gas distributions in colliding galaxy clusters. We used a halo-based approach to investigate the impact of galaxy cluster mass on expected momentum and velocity distributions for galaxy cluster collisions in a ΛCDM universe. However, the approach approximated the velocity dispersion with a linear analytical model with initial conditions only. We explore a more detailed, nonlinear treatment of the galaxy cluster velocity distribution using the nonlinear N-body computations from the Illustris-TNG simulation of the gravitational evolution of the Universe. This enables us to compare the relevant velocity distributions found in dark matter halos as well as in luminous baryonic X-ray halos associated with these clusters as we work to investigate the statistics of galaxy cluster collisions. Oral presentation: Thursday, April 18, 3:30 PM

Student: Dillon Jones
Faculty Sponsor: Ursula Sanborn-Overby (Psychology)

Examining Gender Differences in Negotiation

When it comes to pay in the United States, there is a clear gap between the amounts that women earn compared to men. Research on this matter has shown that women only collect on a fraction of every dollar (70-90 cents) that men make, already taking into account individual’s factors such as experience and performance (Dey & Hill, 2007). A potential cause for this gap could be explained by the fact that men tend to initiate negotiation more often than women. If reasons, such as pay secrecy are preventing women from negotiating as well or as often as men, this could lead to a substantial gap in pay. Based
on this possible explanation, a performance task was developed to mimic a work situation that would prompt an unknowingly negotiable monetary reward for completion of the task which gave participants an opportunity to increase their pay and for us to collect data on gender patterns in negotiation. In the study, 427 participants (F=243) were randomly assigned to receive a combination of performance feedback and pay information to determine the type of information that was needed to increase the initiation of negotiation rate among the female participants so that it was on par with the male participants. Results and discussion will be presented. *Poster: Friday, April 19 AM*

**Student:** Dylan Joyce  
**Faculty Sponsor:** Andrew Bottomley (Communication & Media)

**Tabletop Tales Video Series ★**

The project being presented is a student created video series called Tabletop Tales. Tabletop Tales is a video series that explores the idea that when people play a board game they aren’t just playing a game, they are creating a story. For example when playing a game of Clue people focus on the game play, walking from room to room and asking for cards from other people in order to find out who the murderer is. In the world of the game, however, the characters are trapped in a house with a murderer and are running around trying to solve the murder before they are killed themselves. This video series combines the two elements in an effort to get people thinking not just about the game but the story that they are creating while they play. The series accomplishes this goal by showing a group of friends playing a series of different board games. In between the turns of the game, however, a narrator will be detailing out what is happening within the world of the game in order to tell the story. This will allow people to see how the players moves help create the story depending on different play styles and actions. The players will be playing several different styles of games in order to show how this concept is applicable to any game that you might play. They range from games that have an already clear story element, like Betrayal in the House on the Hill where players take the roll of characters trapped in a haunted house to more abstract games that don’t really have a clear defined backstory, such as Sorry where the goal is to move tokens around a board to get back to their homebase. The goal of this series is to get people to think about board games in a different way. Getting them to think about what is happening inside of world of the game and what their actions during their turns actually represent. Hopefully this new line of thinking helps add a different dimension to playing board games, enriching the experience from a simple game to an interactive experience. *Poster/computer display: Friday, April 19 AM*

**Student:** Kendra Kilson (G)  
**Faculty Sponsor:** Willard Harman (Biology)

**Let's Get to the Bottom of Bathymetric Maps ☀**

Bathymetry is the measurement of the depth of water in lakes, rivers, or oceans. A bathymetric map is a standard tool for understanding the morphometry of lakes. Bathymetric maps facilitate calculation of morphometric parameters, including mean depth, lake volume, surface area, and the volume of water at specific depths in a lake. Surface shape, area, underwater formations, depth, and the irregularity of shoreline all can have important implications for in-lake processes such as turbulence, lake stratification, sedimentation and resuspension, and the extent of littoral zones that determine lake functioning. I created a bathymetric map for Tuxedo Lake in Orange County, New York, as part of my studies in SUNY Oneonta’s Lake Management program. I will discuss the process of how I created the map and some of the utilities of a bathymetric map. *Poster/computer display: Thursday, April 18 PM*

**Student:** Anastasia Klingel  
**Faculty Sponsor:** Antoine Blanc (Chemistry & Biochemistry)

**A Comparison of Higher Education Teaching Methods: Which Really Result in Student Understanding and Knowledge Retention?**

The main measure of student understanding and content knowledge is achieved through testing in educational environments, higher education is no exception. The main testing method used is equidistantly spacing examinations throughout a semester, which allows for little to no time to review
material students fail to exhibit a thorough understanding of on examinations. CHEM 330, General Biochemistry, is no stranger to this issue and this project aims to investigate whether a change in lecture style would provide an increased benefit to student understanding and knowledge retention. Students were assessed of their prior knowledge of glycolysis and gluconeogenesis before two different lecture styles were executed, one being a traditional lecture and one being an interactive lecture. The traditional lecture consisted of prepared slides presenting the information in a linear manner, following the textbook formatting fairly closely. The interactive lecture covered the same material as the traditional lecture but incorporated student participation at a much higher level. Student knowledge was evaluated immediately preceding both lectures to gauge prior knowledge, immediately after both lectures to evaluate any increase in content knowledge, and a few hours after both lectures to evaluate content retention. Poster: Thursday, April 18 PM

**Student:** Makayla Klinger  
**Faculty Sponsor:** Barbara Durkin (Management, Marketing & Information Systems)

**Implementing the International Labor Standards in the United States**  
Government procurement contracts have been used by the United States and in other countries to affect social change. The United States government is the world’s largest consumer of goods and services. The American governmental mandates for affirmative action, with their emphasis on goals and timetables for federal contractors and subcontractors, have been instrumental in successfully encouraging equal employment opportunity programs on a large scale. This paper aims to highlight the global trend of corporate social responsibility and the Sustainable Development Goals (SDGs) promulgated by the United Nations. As companies become transnational, there will be increasing pressure on the human resource management function in those organizations to respond to the changing environment. Existing methods for encouraging companies to be accountable for implementing the international labor standards in the United States are inadequate. The use of government procurement to change social policy is briefly described, based on a literature review. After rejecting the concept of mandatory compliance, the paper then proposes a mechanism for implementation of the international labor standards modeled on the recommendations of the Kenan Consensus. The use of incentives for government contractors, based on compliance with certified management standards such as Social Accountability 8000 (SA8000), is also explored. Finally, the implications of this conceptual model for the human resource management function are examined. Poster: Thursday, April 18 PM

**Students:** Ryan Layman, Julieanne Sullivan, Natasha Hakim, Ashley Jones  
**Faculty Sponsor:** Paul Bischoff (Secondary Education & Educational Technology)

**Water Quality Analysis of Emmons Bog**  
In addition to serving as significant carbon sequestration sites, bogs are habitats to a unique diversity of organisms. Increasingly, due to changes in regional and global precipitation events, the water in bogs is often transferred for use in agricultural applications. The purpose of this study was to comparatively analyze across a three point transect, the concentrations of nutrients known to be essential in the biogeochemistry of bogs and related water chemistry parameters. Across the three sample sites, concentrations of magnesium and calcium were found to be significantly different. In addition, pH and conductivity values demonstrated significant differences across the sites. However, there was no significant difference between dissolved oxygen concentrations at the three sample sites. From the collected findings, Emmons bog appears to be heavily influenced by the terrestrial and ecological environment surrounding it. Given these observations, Emmons bog is not characteristically ombrotrophic. Furthermore, as characterized in the findings, the effects of these influences resulted in variable chemical measures across the three sample sites. Poster: Thursday, April 18 PM
Students: Ryan Layman, Melissa Amigon, Julieanne Sullivan, Sarah Jones (G), Madeline Every
Faculty Sponsors: James Ebert (Earth & Atmospheric Sciences), Paul Bischoff (Secondary Education & Educational Technology)

Earth Science Model Research and Design Institute
Funded by the National Science Foundation’s “Improving Undergraduate STEM Education Program” we spent a month in summer 2017 researching and creating models useful in teaching high school students earth science concepts. We began by learning cognitive science principles supporting the use of models as effective teaching tools. We then applied what we were learning in analyzing the content knowledge utility of existing models commonly used in science teaching. Prepared with some solid background knowledge in cognitive science and knowledge of existing earth science teaching models, we began in-depth process of researching and studying earth science concepts not supported with good models. Some of our biggest successes included the creation of models useful in teaching students about the earth’s atmosphere, plate tectonics and retrograde motion. New York State Master Teacher participated by reviewing and offering feedback on our finished models and accompanying lesson plans. Moreover, the team presented their models to a robust group of science teachers at the 2018 New York State Science Teachers Association Conference. We plan on using the models we created in our future teaching careers. Poster: Thursday, April 18 PM

Student: William Leahy
Faculty Sponsor: Matthew Hendley (History)

Hong Kong's Children: Child Labour and Mui Tsai in Hong Kong ★
Hong Kong, a British colony located in China, escaped the brutality of the First World War, but during the interwar period (1919-1941), Hong Kong would experience turbulent times. This prosperous city, renowned for its economic freedoms suffered from strikes and protests. The strikes were hardly unwarranted. The lower class of the city, oft of Chinese ethnicity, laboured in factories with abhorrent conditions. The colony offered minimal legislation to ameliorate the harsh conditions for children. In dangerous industries, children laboured, for there was no compulsory education scheme to exempt them or to offer alternative to work. In addition, wages in the colony were so low that families were dependent on the income of the children to supplement their own. Yet England and the expatriate community resolved to aid the children. Labour legislation and an increased focus on what was thought to be a colonial backwater improved the repugnant conditions. Pressure from England forced the colony to effectuate change, and though slow at times to enact change, the labour legislation for children was lauded. The pressure from England turned to another child labour element of Hong Kong. Mui tsai was an ancient Chinese tradition where the wealthy aided the poor by purchasing their daughters to serve as domestics. Critics in Britain felt that this system was a form of slavery. Winston Churchill then Colonial Secretary declared that the system will be abolished within twelve months. The Chinese of Hong Kong demurred. While legislation was promulgated to neuter the system, the system lingered on causing more debate between the colony and Parliament. Child labour and mui tsai compared offer insight into the British Empire and the contemporary perceptions within the empire. Computer display: Friday, April 19 AM

Student: Julia Llewellyn
Faculty Sponsor: Yung-Jung Choi (Human Ecology)

Creating Fashion: Uncovering Trend Analysis and Forecasts
The purpose of the study was to investigate various roles of fashion forecast and trend analysis in the fashion product creation process. The course in which a fashion style gains high popularity within a market segmentation is known as a trend. In order for a brand to produce creative garments on trend, fashion professionals push forecasted concepts into developing seasons. Fashion brands use trend forecast to anticipate the target customer’s state of willingness to buy, reducing the risk of products receiving marginal purchase rates. I collected research content through magazines, ready-to-wear runway shows, and social media outlets. VOGUE has been a trusted fashion magazine since the first publication in 1892. VOGUE magazine supported most material during my study, allowing myself to
identify the modern day fashion expression. The content analysis reveals an increase of female professionals rising up the corporate ladder in style. As feminist movements continue to impact society, the presence of powerful female professional’s impact new business casual office attire. There has been a widespread of female celebrities and socialites wearing monochromatic pant suits at press conferences, interviews, or special events. Fashion brands who participated in New York Fashion Week, spring 2019, exhibited diverse color pallets that exemplified both somber and neutral colors with additional bright monochromatic pieces. With an increasing number of women in the workforce, young women are dressing in everyday casual work attire. Following the fashion forecasting and trend analysis, I created a black jumpsuit paired with a black and white color block jacket. The theme of my collected reflects my research analysis by representing the strong, professional, and empowered women in society. The black jumpsuit was constructed out of denim fabric, designed with a straight leg fit, front bodice princess line, and sweetheart neckline. The color block jacket is simple yet chic. Constructed from white woven fabric, an addition of black woven fabric positioned at the top right and bottom left of the garment gives the color block effect. The fashion pieces paired together creates a professional work ensemble that effectively represents current trends. Fashion forecasters conduct extensive research that determine what color, textile, accessory, and silhouette will be seen in following seasons. Accurate trend forecast assists fashion professionals through the creative process of planning a fashion collection. Fashion forecast data provides essential information regarding successful fashion products seen in the marketplace. 

**Student:** Christopher Maier (G)  
**Faculty Sponsors:** Kiyoko Yokota, Daniel Stich, Willard Harman (Biology)  
**Developing a Management Plan for a Small Private Lake ☽**

In developing a lake management plan, there needs to be a balance between meeting the needs of the lake’s stakeholders and the ecological needs of a lake. All lakes are unique in respect to their management means. Therefore, it is imperative to tailor a management plan to each specific lake. Pleasant Lake is a small private lake located in the Southern Adirondack Park. It has never been subjected to the process of a formal management plan. This lake provides the opportunity to explore the applicability of different management plan types: issue-based and comprehensive plans. 

**Poster: Thursday, April 18 PM**

**Students:** Melissa Marry, Ben Weir  
**Faculty Sponsor:** Hugh Gallagher, Jr. (Physics & Astronomy)  
**Seiche Characteristics and the Feasibility of Detecting Them in Coastal Basins ☽**

A seiche is effectively a standing wave that forms in a closed basin. By way of illustration, consider the regular back and forth motion of water sloshing in a bathtub. This component of water flow may play a role in the way that nutrients are distributed throughout the body of water. In the simplest case of a rectangular body of water of uniform depth without ice cover, the period of a seiche is related to the length and depth of the body of water. However, closed basins often have complex geometries. In order to help interpret observations of water flow in a closed basin, we consider the formation of a seiche in an above-ground pool. A theoretical determination of the period of the seiche is made for this simple geometric basin using two different techniques. The results are compared with observations of the fundamental seiche mode produced in the pool. With a better understanding of the relationship between seiche period and basin geometry, we examine the possibility of detecting seiche in Long Island Sound and shallow basins on the southern coast of Long Island.

**Poster: Friday, April 19 AM**

**Student:** Katherine Martinez Munoz  
**Faculty Sponsor:** Sean Robinson (Biology)  
**Population Genetic Structure of the Flowering Plant *Diapensia lapponica* (Diapensiaceae) in the Northeastern Alpine Zone ☽**

The alpine zones of New York and New England represent the southern range limit of arctic-alpine plants in the eastern part of North America. Consequently, they contain unique plant communities
Diapensia lapponica (Diapensiaceae) is a long-lived, evergreen perennial isolated to arctic-alpine regions. It is an important pioneer species and can facilitate the growth of other alpine plants by accumulating organic material and stabilizing the soil. The harsh growing conditions of the alpine zone, and high energy costs associated with sexual reproduction are predicted to result in high rates of asexual reproduction in alpine plants, like *D. lapponica*, via rhizomes (underground stems). This dependence on asexual reproduction could have a significant impact on the genetic diversity and long-distance dispersal ability of these plant populations, making them more susceptible to extirpation in the northeastern alpine zones given current climate change scenarios. The purpose of this investigation is to determine rates of sexual vs. asexual reproduction in New York and New England populations of *D. lapponica* as an indirect measure of its ability to migrate and/or adapt using population genetic methods. To further the investigation, Canadian populations of *D. lapponica* will also be used to determine the extent to which populations in New York and New England have remained isolated from larger, more contiguous populations further north. 

**Poster: Thursday, April 18 PM**

**Students:** Kaitlin Martins, Heather Noulis, Nicholas McElwee

**Faculty Sponsor:** Katherine Lau (Psychology)

**The Four Facets of Psychopathy and Parenting Styles**

Psychopathic individuals are remorseless, callous, and unempathic. They are often manipulative, exploiting and conning others, and frequently are irresponsible, impulsive, and erratic (Cooke & Michie, 2001; Hare, 2003). Studies show that individuals who are high in psychopathic traits engage in more antisocial and aggressive behaviors (Hare, 2003; Marshall & Cooke, 1999; Durand & Felozo, 2018). Research has attempted to identify what leads to the development of psychopathic traits. One line of research has focused on how parenting may influence the development of psychopathic traits. Previous studies have shown that male inmates who have endured physical punishment and neglect as children, have higher scores on psychopathy (Weiler & Widom, 1996; Koivisto & Happasalo, 1996; Patrick et al., 1997). Similarly, studies on non-clinical adults have found greater psychopathic traits associated with retrospective self-reports of lower parental bonding (i.e. maternal care, paternal overprotection), greater physical abuse, and more frequent separations from parents, as children (Gao et al., 2013). Consistent with research on adults, male adolescent offenders who displayed more callous-unemotional traits reported experiencing lower maternal care (Kimonis et al., 2013). Although studies on parenting and overall levels of psychopathic traits exist, few have examined parenting styles in relation to specific factors of psychopathy. One model of psychopathy construes the personality as composed of four factors, namely callous affect (i.e., shallow affect, lack of remorse, guilt and empathy), interpersonal manipulation (i.e., superficial charm, egocentricity, and pathological lying), erratic lifestyle (i.e., irresponsibility, impulsivity, sensation seeking), and antisocial behavior (i.e., poor behavior control, early juvenile delinquency, and versatile antisociality) (Hosker-Field, Molnar, & Book, 2016). Studies on parenting have shown that monitoring practices can buffer the development of various individual outcomes including deviant and violent behavior (Merrin et al., 2018). Greater feelings of security and warmth have been associated with lower levels of callousness, cruel behavior, and aggression (Durand & Felozo, 2018). Lastly, a lack of parental responsiveness and involvement early in life is associated with greater antisocial behaviors (Farrington, 2000). Prior research has mainly focused on males and the forensic population. Our study expands on this by focusing on males and females in the general population. We examine how parenting is associated with psychopathic traits generally, as well as the factors (i.e., callous affect, interpersonal manipulation, erratic lifestyle, antisocial behaviors). Further, we explore whether gender interacts with parenting to predict psychopathic traits. We hypothesized as follows: 1) less responsiveness is associated with greater callous affect and interpersonal manipulation, 2) physical punishment leads to greater antisocial behaviors, and 3) lack of monitoring leads to erratic lifestyles. We are going to explore how these associations may differ between males and females. **Poster: Thursday, April 18 PM**
**Student:** Monica Matt (G)  
**Faculty Sponsor:** Willard Harman (Biology)  

**A Delicate Balance: The Need for Weeds in an Aquatic Ecosystem**

Aquatic plants are an essential part of the lake ecosystem because they provide habitat for aquatic organisms, cycle nutrients, and supply oxygen to the water column. Excessive plant growth and an unbalanced species composition can counteract these benefits, though, and hinder lake-user activities. These issues can be compounded when the dominant species of a waterbody is an invasive species. Two aquatic invasive plant species, Eurasian watermilfoil (*Myriophyllum spicatum*) and hydrilla (*Hydrilla verticillata*), have been observed to dominate the plant community of Lake Ronkonkoma, Suffolk County, NY. Currently, these two species are the major contributors of ecological services, but their dominance has reduced the plant biodiversity of the lake and may be a source of other water quality issues. In order to prevent further infestations and restore the plant community at Lake Ronkonkoma, a management strategy that integrates several plant and invasive species management techniques is necessary. *Poster: Thursday, April 18 PM*

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**Student:** Sara McCaffrey  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  

**Tourism in Jamaica: A Model for a Sustainable Tourism Industry**

Considered to be an underdeveloped country, Jamaica currently relies on its multi-billion dollar tourism industry to generate revenue. However, current practices cause environmental destruction. If Jamaica adopted sustainable tourism practices, the country could use eco-tourism as a tool to become environmentally conscious, implement new policies and technologies, employ citizens, and to attract tourists who want to reduce their ecological footprint. For this research, I will use GIS (Geographic Information System) modeling to exhibit tourism-related impacts in Jamaica. I will then develop a sustainable tourism model, tackling issues such as reducing waste, preserving natural resources, cutting emissions, and encouraging green infrastructure. Overall, I aim to show how tourism can be used to Jamaica’s advantage, to increase profits and cut costs while developing sustainable methods. *Poster: Thursday, April 18 PM*

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**Student:** Claire McMahon  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  

**A Tale of Two Jackets: An Apparel Life Cycle Analysis**

This project focuses on the intersection between environmental sustainability and the fashion industry. I will complete a comparative lifecycle analysis of two different products, one from a company with a reputation for being responsible (Patagonia) and the other from a company with a more neutral reputation (The North Face). Along the way I will describe the negative environmental impacts of growing, harvesting, shipping, dyeing, finishing, and landfill buildup. I will also discuss other negative elements of the industry, such as economic and social injustices. Lastly, I will evaluate how much greenwashing is involved in company advertising. My findings will assist consumers in making educated choices when shopping. *Poster: Thursday, April 18 PM*

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**Students:** Madison McQueeney, Athena DeCarmine  
**Faculty Sponsor:** Jody Aultman (Human Ecology)  

**A Study of Surface Design**

A Student Research & Creative Activity Grant was received for creative research of our project. A line of four garments was created using the grant. The garments will be displayed in the spring fashion show at SUNY Oneonta. The collection will also be entered in the annual International Textile and Apparel Association (ITAA) conference. The process was started using the OptiTex CAD Patternmaking software to create the designed patterns. Upon completion of the patterns, research was started on fabric types and dyes available. Hand dyeing techniques were explored, using different forms or resist dyeing and experimentation combining primary and secondary colors was key in finding the preferred colors for their garments. A research notebook on techniques was used throughout this Independent Study to
assist us with further studies on surface design. The garments were then constructed using industrial sewing machines in the Human Ecology building. Garments types include suits, gowns, and dresses which were created using their designed patterns. Colors range from different shades of burgundy, yellows, reds, and oranges. Exhibit: Thursday, April 18 PM

**Student:** Elizabeth Meaney  
**Faculty Sponsor:** Bharath Ramkumar (Human Ecology)

**Crossing the Fine Line between Fashion and Trash ☼ ★**

Today, the global textile and garment sector has transformed into an industry that is valued at $3 trillion and is one of the biggest polluter and emitter of greenhouse gases. From agriculture (growing fiber) to manufacturing, each step of the supply chain to make a single clothing product has critical effects on the planet and the people involved. For instance, the production of polyester (a commonly found textile fiber) released emissions equivalent of 185 coal-fired power plants in 2015 alone, while the people making the clothes get paid as low as $60 a month. Moreover, in the United States alone, the average consumer throws out around 81 pounds of textiles a year. Put in perspective, that is approximately 500,000 pounds of textiles per year from the SUNY Oneonta student population alone. The main objective of this creative activity is to develop and implement a campaign that raises awareness on our SUNY Oneonta campus about the devastating effects of current clothing production and consumption practices on the environment and society. By visually showing how every individual’s consumption can impact our planet, we urge consumers to shop more mindfully and play an active part in addressing the immediate threat of climate change. In order to address the objectives of this project, two exhibits were designed, developed, and installed across campus. The first exhibit, displaying an eclectic, avant garde dress is currently on display in the living room area of Hunt Union. This dress, while aesthetically pleasing, is in reality decorated with synthetic, non-biodegradable materials, such as polyester and nylon, which are derived from carbon-intensive fossil fuel sources, just like most of the clothes sold and worn today by the average consumer. This exhibit crosses the fine line between fashion and trash, exemplifying the waste produced by fashion companies during production, and perpetuated by consumers during and post-consumption. The second exhibit, located on the Argo Tea side of Milne Library, sheds light on the excessive fresh water used in the production of cotton needed to make a single t-shirt, in a time when drinking water is becoming increasingly scarce and has already triggered major crises worldwide. For instance, it takes approximately 713 gallons of fresh water to manufacture one cotton t-shirt, which is enough drinking water for one person for two years. These exhibits not only raise awareness among the campus community about the unsustainable practices in the fashion industry and the overconsumption of clothing, they are also designed to answer the question “what can I do as an individual consumer?” By highlighting the possible steps that each of us can take, the ultimate goal of this creative activity is to encourage individuals to be active change agents by consciously shopping for only what they need and not succumb to the social pressures leading us to overconsume. This collective consciousness will inevitably break the cycle of over production, paving way for a sustainable future. Exhibit: Thursday, April 18 PM

**Students:** Anthony Messina, James Bethel, Alyssa Brault, Hannah Kaplan, Juliana Valencia, Olivia Allrich  
**Faculty Sponsor:** Lawrence Guzy (Psychology, faculty emeritus)

**Prevalence of Motion Sickness Symptoms with Student-Athletes Traveling by Bus to Away Games and Competing Shortly After Arrival★**

**Introduction:** Performance of athletes during a game that required a bus trip may be detrimentally influenced by several factors including susceptibility to motion sickness. Comments from women athletes indicated they requested bus drivers to avoid short-cuts and remain on the highway so as not to worsen their symptoms. This change in the route increased travel time-on-the-bus. The purpose of this research was to document the prevalence of motion sickness of a Division III sports program that travels by bus and shortly after arriving, competition began. **Method:** Eighty-five men and 84 women with a Mean age of 19.2 years volunteered their participation. All were college varsity athletes from the soccer, swimming/diving, tennis, volleyball, cross-country, and wrestling teams. They were administered the Motion Sickness Assessment Questionnaire (MSAQ) containing four subscales:
Central, Peripheral, GI, and Sopite; the Motion Sickness Susceptibility Questionnaire (MSSQ-short form), and a questionnaire of their personal experiences of motion sickness, if any, as they traveled to away games. **Results:** MSAQ% total was significantly correlated with MSSQ total, r (167) = 0.74, p< 0.001. For each athlete, using his/her MSAQ% total score, we identified a value of 50% or greater as being susceptible to motion sickness. Using a proportional z-test, significantly more women (32%) were identified as susceptible than men (10%), p< 0.001. Examining the MSAQ% GI subscale, significantly more women reported these symptoms (50%) than men (24%), p < 0.001. Three men and six women rated MSAQ GI% symptoms greater than 90%. Two women reported the maximum score possible, i.e., 100%. For both men and women who rated their likelihood of developing motion sickness symptoms on a 4-point scale (1 = none and 4 = severe) while traveling, MSAQ% total and the four subscales were significantly correlated, r = 0.60 to 0.71, p < 0.001. **Discussion:** Motion sickness is a serious issue for student-athletes expected to perform at their best shortly after arriving by bus. Teams that are identified as 2nd half teams where their performance overshadowed their earlier play may be due to resolving their symptoms by halftime. From our interviews, athletes do not readily share their susceptibility nor discuss their unique attempts to control their symptoms. Introducing the athletes to different countermeasures may be beneficial to identify other techniques to reduce/control their symptoms. **Poster: Friday, April 19 AM**

**Students:** Anthony Messina, Joshua Garufi  
**Faculty Sponsors:** James Zians (Psychology), Rebecca Harrington (Counseling, Health & Wellness), Daphne Thompson (Athletics)

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**Student Athletes’ OPROS Leadership Program: Quantitative & Qualitative Evaluation Results**

The SUNY Oneonta Athletics Department, in collaboration with the SUNY Oneonta Counseling, Health & Wellness Center, have an NCAA CHOICES Alcohol and Drug prevention grant. The overall goal of the CHOICES program is to implement and evaluate alcohol-related education and prevention programs, and to increase collaboration between campus athletics and other campus organizations involved in alcohol education and awareness initiatives. Nested in the goals and objectives of this initiative at SUNY Oneonta is a peer leader group comprised of students called OPROS (Oneonta Peers Reaching Other Students). OPROS leaders are trained to help disseminate key elements of a drug and alcohol prevention, risk reduction curriculum to peers in the athletic programs across the college and to the larger student body. The OPROS training and implementation comprised the use of a structured manual and specialized training materials broken up into six modules. Each of the six modules had core curriculum focused on key elements of health and wellness/prevention related to alcohol and other drugs: 1) Standard Serving Size, 2) Blood Alcohol Content Effects, 3) Social Norms, 4) Getting Back to Sober, 5) What is in Your P.L.A.N.? and 6) What is Your Relationship to Alcohol? An evaluation and Program Improvement Impact Plan was established for the CHOICES’ OPROS Program. Included were both qualitative (focus groups) and quantitative evaluation methods (a KABB: Ready Willing & Able/Skills Questionnaire). Results from the focus group and KABB Ready Willing & Able/Skills Questionnaire demonstrated strong trends in the desired direction toward the goals of the OPROS curricula. Interestingly the evaluation results also explored how OPROS leaders feel frustrated that norms related to risk behaviors (e.g., student binge drinking, poor sleep habits, other risk behaviors) remain a challenge. Suggestions to tailor the OPROS program toward increased success and volunteerism reward were suggested in the evaluation. **Poster: Friday, April 19 AM**

**Students:** Taylor Metz, Anthony Ferris, Sam Havens  
**Faculty Sponsor:** Rhea Nowak (Art)  

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**The Process of Intaglio Printmaking**

Developing both the conceptual ideas and the skills in printmaking techniques to communicate them takes time and tenacity. Three students show the tools, plates, proofs and final prints to show their process including a video of printing an etching. **Exhibit and computer display: Thursday, April 18 PM**
**Student:** Brigid Meyers  
**Faculty Sponsor:** Kiyoko Yokota (Biology)

**Current and Projected Stratification Patterns in Otsego Lake, NY ☼**

It is widely accepted that the global climate is currently changing with expected increases in air temperature from pre-industrial levels. Intergovernmental panels are currently attempting to mitigate this rise within 2 degrees Celsius threshold by year 20XX. Even if this goal is achieved, there are unintended environmental consequences. In lakes, ambient air temperature strongly affects the stratification of water. Therefore, it is expected that with a changing climate there will also be a change in stratification patterns. To predict these changes, the Project EDDIE, Environmental Data-Driven Inquiry and Exploration, Lake Modeling Module, was customized with local data for basin morphometry from Otsego Lake, NY. Many other important meteorological and hydrodynamic parameters were not monitored locally and, therefore, were unchanged from the original hypothetical values used in the EDDIE Module. Using available lake monitoring data, stratification patterns were simulated and compared to observed patterns. Further refinement of the Otsego Lake model with appropriate local meteorological and hydrodynamic parameters will enable better simulation of how lakes will stratify in the future with a warming climate. *Poster: Thursday, April 18 PM*

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**Student:** Emilie Mull  
**Faculty Sponsor:** Alejandra Escudero (Foreign Languages & Literatures)

**Articulatory Phonetic and Dialectological Companion Site★**

The Articulatory Phonetic and Dialectological Companion Site is a creative project for the development of Spanish Phonetics and Phonology. Examples and quizzes in modules prepares and tests users on their knowledge of the material. The site is meant to be a companion site for the Spanish Phonetics course offered on the SUNY Oneonta campus, and is a free and accessible tool for students across the SUNY system. *Computer display: Friday, April 19 AM*

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**Student:** Brian Mullin (G)  
**Faculty Sponsor:** Florian Reyda (Biology)

**Invasive Copepod Infections of Introduced Salmonids in Lake Ontario ☼★★**

*Salmincola californiensis* (Subclass Copepoda: Family Lernaeopodidae) parasitizes the gills of salmonids of genus *Oncorhynchus*. Three species of *Oncorhynchus* salmon native to the Pacific Northwest, *Oncorhynchus mykiss* (rainbow trout), *Oncorhynchus tshawytscha* (chinook salmon), and *Oncorhynchus kisutch* (coho salmon) have been reported as hosts for *S. californiensis* since 1852. These three salmonids have been introduced to the Great Lakes intermittently since the mid 1800’s. The introduction of these salmonids to the Great Lakes was followed, at some point, by the introduction of their parasitic gill copepod, *S. californiensis*. Given various anecdotal accounts of *S. californiensis* in introduced salmonids in Lake Ontario since 2012, we chose to conduct a survey to formally document the occurrence of this invasive species. Our survey took place in 2018 during the spring, summer and fall at the south-eastern side of Lake Ontario. The Salmon River Fish Hatchery in Altmar, New York provided fish during the spring and fall spawning runs of 2018 while lake fishing charters provided fish during the summer of 2018. Examination of fish occurred post-mortem in all cases and each gill arch was examined by eye. Prevalence and intensity of infection was recorded and parasites were removed and preserved for analysis. Our survey results indicate the prevalence of *S. californiensis* to be 69% with a mean intensity of 2.71 in the 61 rainbow trout examined and a prevalence of 39% with an intensity of 1.56 in the 223 chinook salmon examined. *S. californiensis* was not found in the 100 coho salmon examined. The prevalence of 69% in rainbow trout is of great concern considering that it is nearly double that compared to the prevalence of *S. californiensis* in rainbow trout in its native range, (35%). This work constitutes the first formal documentation of *S. californiensis* in Lake Ontario. These data, in combination with future work investigation potential relationships of infection with fish age, sex and length will be of potential use in fisheries management decisions in Lake Ontario and its tributaries. *Poster: Thursday, April 18 PM*
**Students:** Caleigh-Shea Murphy, Cristina Santos Carvalho  
**Faculty Sponsor:** Jill Fielhaber (Biology)

**Assessing Zinc Exposure Necessary for Cytotoxic Effects on Cancer Cell Lines**

Research has shown that while zinc plays a crucial role in health and homeostasis, exposure to high levels of zinc can lead to cell cytotoxicity. Previous experiments have shown that exposure to heavy metals can activate heat shock factor 1 (HSF1) transcription factor, which when activated, provides a protective effect against damage by physiological stressors. The goal of this research was to assess the effect of zinc exposure on proliferation or death and then to investigate the potential role that HSF1 in protecting against this effect. HELA cells, a human cervical cancer line, and HL60 cells, a human leukemia cell line, was the model used for experimentation. Cells were exposed to zinc in increasing concentrations for 24 hours, and the effect of exposure on cell proliferation was measured using the MTT assay. Since the data demonstrates that exposure to high concentrations of zinc decreases cell proliferation, we are currently performing experiments to determine if reduced proliferation is due to cell senescence (halting of cell division), apoptosis (programmed cell death) or necrosis. We will then assess the role of HSF1 and determine if it plays a role in protecting the cell from these effects at sublethal concentrations. *Poster: Thursday, April 18 PM*

**Student:** Billy Murray  
**Faculty Sponsor:** Beniam Awash (Sociology)

**Corporate News Sources Narration of Venezuela within the United States**

This presentation compares mainstream media and alternative narratives of the current 2019 Venezuelan crisis to examine how modern propaganda works in the United States. I collect video and print data of recurring statements by mainstream media about the Venezuelan crisis to explain how U.S. public perception is manipulated to regurgitation half-truths and falsities. A comparison to alternative news sources and the difference in narration and journalism on the same Venezuelan issues unveils the way the “free press” shapes public perception. Noam Chomsky wrote “Manufacturing Consent” in 1988, which attempted to explain how mass communication media sources in the U.S are actually ideological institutions that carry out propaganda based on personal and political gain. This study furthers the explanation of propaganda in a society that reinforces the beliefs and ideals of free and honest press to its citizens, most of which would not believe propaganda would take place outside of a dictatorial state. News Sources such as CNN, ABC News, Fox News, NBC, CNBC, and Vox that are highly respected organizations by the public are actually pushing their own agenda for personal and political gain and engaging in “manufacturing consent.” *Oral presentation: Friday, April 19, 12:00 PM*

**Student:** Jordan Nadelson  
**Faculty Sponsor:** Fred Zalatan (Biology)

**Determining the Effects of a Secretory Pathway Component on the Frequency of Ty1 Transposition Events in Saccharomyces cerevisiae**

Ty1 is a transposable element found in baker’s yeast (*Saccharomyces cerevisiae*). Transposable elements, or transposons, are sequences of DNA that are capable of replicating and changing position from one location of a host’s genome to another. A retrotransposon is distinguished from other transposons in that it uses an RNA intermediate to replicate; previous studies have alluded to secretory pathway involvement in the replication of Ty1 retrotransposon elements. Sec4 is a protein involved in the fusion of secretory vesicles to cell membranes. Preliminary results indicate that the Sec4 mutation reduces replication frequency. *Oral presentation: Friday, April 19, 11:00 AM*

**Student:** David Ndambuki  
**Faculty Sponsor:** Junryo Watanabe (Biology)

**M1 and M2 Genes in Drosophila melanogastor Plasmatocytes ★**

Clearance of neural debris after injury for tissue repair or during tissue remodeling is an integral part of neural tissue maintenance. *Drosophila* undergo metamorphosis, which includes remodeling larval nervous tissue into adult nervous tissue. There are two pathways of neural debris clearance: clearance...
of pathogenic debris (M1 pathway) and clearance of apoptotic debris (M2 pathway). M1 and M2 genes and pathways have not been previously demonstrated in *Drosophila*. The aim of this study was to identify M1 and M2 genes and their roles. Our hypothesis was that M1 and M2 genes have neural debris clearance activity in *Drosophila*. *Drosophila* genome was screened for M1 and M2 gene homologs of known human immune system genes. Secondly, effect of candidate genes on the M1 pathway was determined in vitro through phagocytosis of *E.coli* particles in knockout third instar *Drosophila* in comparison to wild type. We obtained a list of M1 and M2 gene homologs: M1 – *eiger*, *toll*; M2 – twin, maf, ico, stat. In the M1 pathway experiment, *eiger* had phagocytic effect, while *toll* did not. Additionally, two M2 genes had no phagocytic effect, however, two had phagocytic effect (*stat*, *ico*). This is the first list of M1 and M2 genes developed for *Drosophila* and creates further questions on the mechanics of neural debris clearance. Finally, M1 pathway experiment indicates that our homologs have different effects in *Drosophila* than they do in human immune system and offer a simple animal model to study neural debris clearance. *Poster: Friday, April 19 AM*

**Students:** Amanda O’Meara, Mikala Gallo, Clare Jay  
**Faculty Sponsor:** Elizabeth Seale (Sociology)  
**The Good, the Bad, and the Double-Edged Sword: First-Generation College Experiences at SUNY Oneonta★**  
This is an exploratory, qualitative study of first-generation college students and how they experience life at SUNY Oneonta using in-depth interviews with 10 students. Multiple themes emerged, including the double-edged sword of familial support, the importance of campus relationships, and personal and academic development. The double-edged sword of familial support refers to first-generation students’ parents’ desire for their kids to do well in school, yet their lack of understanding of how life works for college students. Campus relationships benefited these students in various ways. Relationships with professors, development of friendships with peers, and involvement in the community as a whole seem to reap positive benefits for first-generation students. We also analyzed personal and academic development. Some students were able to drastically improve academic skills over time and others were able to develop a new social identity at college. Overall, first-generation college students in this study reported very positive experiences at Oneonta, as well as particular challenges. Recommendations for future research and suggestions for application at the university level are provided. *Poster: Friday, April 19 AM*

**Students:** Eric Ortiz, Alexandra Lewis, Ryan Minges, Martin Sak, Christopher Robertson  
**Faculty Sponsor:** Jen-Ting Wang (Mathematics, Computer Science & Statistics)  
**Who Are You Most Likely To Hire?**  
Everyone goes through the job market at some point in their lives. Employers often have several biases in choosing who to hire. In order to determine any biases from future employers, many people were surveyed to determine any possible biases during the hiring process. Zebrowitz and Montepare (2008) believe that appearance can create an impression. We were curious to see if the appearances of people in a photograph really creates a bias for hiring people. According to Warhurst et al (2009), employers appear to be in favor of people perceived to be better looking or those that have the ‘right look’. In our fractional factorial design, we showed people multiple pictures and asked them to rate how likely they were to hire each person in the photo if they were interviewing them. The job positions that were asked about in this experiment are a waiter/waitress and a teacher. They will rate the person pictured on a scale from 1-10, such that 1 means not likely to hire and 10 being very likely to hire. The factors that we considered were the sex, type of clothing, body language, skin color, and with/without a smile. Statistical analysis will be conducted to determine if people had any biases based on the previously stated factors, and if some of these factors made some people think that the job candidates had the ‘wrong look’. *Computer display: Friday, April 19 AM*
**Students:** Virginia Pagan, Michael Lang  

**Faculty Sponsor:** Chien-Wei [Wilson] Lin, Lambrianos Nikiforidis (Management, Marketing & Information Systems)  

**The Impact of Acquisition Mode on Consumers' Brand Roles Preferences**  

Consumers can obtain products through a variety of acquisition modes. Surprisingly, little research has examined whether and how renting rather than purchasing a product might affect consumer product preferences. In addition, marketers use different brand roles to communicate the brand value to consumers such as being a partner (e.g., Max Life Insurance describes itself as a “Your partner for life”) or a servant (e.g., Google says, “Make Google do it”). Using the literature of acquisition mode and brand role as our theoretical underpinning, this research explores the impact of acquisition modes on the partner versus servant brand role preference. *Poster: Thursday, April 18 PM*

**Student:** James Pasquino  

**Faculty Sponsor:** Heike Geisler (Chemistry & Biochemistry)  

**Synthesis of a Sandwich-Type Graphene Based Electrochemical Immunosensor**  

The goal of this project is the synthesis of an ultrasensitive sandwich-type immunosensor. This sensor will be used to detect trace levels of a molecule known as carbohydrate antigen 19-9 (CA 19-9) which is commonly found in the blood of patients with pancreatic cancer. The initial step in its fabrication involves synthesizing porous graphene oxide integrated with gold (Au-PGO) to lay on the base of the sensing platform. Au-PGO will be synthesized through homogenization of graphene oxide (GO) via ultra-sonification and reacted with HAuCl₄*4H₂O and PEG before incubation at 180°C for 12 hours. Subsequently, a washing process will be conducted and the PGO will be finished following freeze drying. Au-PGO will be analyzed via XPS and Raman Spectroscopy to determine the composition of the analyte and to quantify the level of plateauing regions of the graphene oxide. Successful fabrication of such sensor can allow for earlier detection of pancreatic cancer and other forms of cancer which produce this antigen, allowing for earlier intervention and increased survival rate. *Poster: Friday, April 19 AM*

**Student:** Nicole Pedisich (G)  

**Faculty Sponsor:** Jeffrey Heilveil (Biology)  

**Population Genetics of the Knobbed Salmonfly, Pteronarcys biloba (Newman), in New York State**  

Although morphological keys exist for the genus *Pteronarcys*, no molecular analysis has occurred. Using the mitochondrial gene Cytochrome Oxidase I, we are creating a Bayesian phylogeny for the genus and examining population structure of *P. biloba* populations within the major management basins in New York State. No previous COI sequence data exist for *P. biloba* and *P. comstocki* in GenBank. Genetic diversity of *P. biloba* populations appears reasonably high for populations this far north, with more than 6 alleles at a single site. A total of twelve populations will be examined. The nuclear gene Wingless (Wnt) will also be analyzed and these data will be used in conjunction with COI data in the exploratory analysis of genetic structure. *Poster: Friday, April 19 AM*

**Student:** Amy Rohrman  

**Faculty Sponsor:** Jeffrey Heilveil (Biology)  

**Survey of Microsporidia in the Aquatic Invertebrate Taxon Glossosoma sp. in Otsego County, NY**  

Aquatic invertebrate populations are used as an index of stream health in freshwater systems. The prevalence of pathogenic infections in sensitive organisms such as the trichopteran taxon Glossosoma, give insight into the capacity of a stream to support ecological diversity. Microsporidiosis is an infection with a unicellular fungus of the phylum Microsporidia, which parasitizes many aquatic invertebrates. This study characterized the prevalence of microsporidial infection in streams of Otsego County New York experiencing varying degrees of anthropogenic stress. In early spring 2019, populations of glossosomatids were sampled by hand-collection from four sites in Otsego County, NY
and examined for microsporidia. Unstained wet mount slides of larval fat body were prepared and examined using phase-contrast microscopy, followed by staining with Giemsa and reevaluation of suspected spores. Infection prevalence for each location was calculated as samples were collected and processed to ensure that data reported are representative of the variable stream conditions observed during seasonal turnover. Poster: Thursday, April 18 PM

Students: Amy Rohrman, Jeremy Pember, Sarah Pokrzywa, Isaiah Crosbourne, Claire Curtin

Faculty Sponsor: Florian Reyda (Biology)

Nematode Diversity in Otsego Lake Fishes ☼

The focus of this research is the nematode parasites of Otsego Lake fishes. The results are based on a long-term fish parasite survey in various water bodies in Otsego County in central east New York that took place 2008–2018. In total, 1,637 individual fish representing 44 species were examined for intestinal helminths. Nematodes were among the parasites most frequently encountered the survey. A diversity of species were encountered in the digestive system of fishes, but nematodes were also found in other body organs. In total, at least six nematodes were found in the digestive systems of fishes, including four species of genus *Spinitectus*, one species of *Dichelyne* and one species of *Camallanus*. The nematode species *Eustrongylides tubifex*, commonly known as red worm, was frequently found in the body cavity of multiple species of fish hosts, including several popular game fish species. Specific identifications of additional species of nematodes are currently underway. Images of all nematodes encountered are provided, and issues encountered that made identifications difficult are highlighted. Poster: Thursday, April 18 PM

Students: Nathan Rutherford, Valerie Conforti, Jeffrey O’Neil

Faculty Sponsor: Keith Jones (Mathematics, Computer Science & Statistics)

Student Perspectives on Inquiry-based Learning in Mathematics

Inquiry-based learning (IBL) is an active approach to learning mathematics in which students work through carefully guided sequences of problems, and discuss their solutions with their peers under the guidance of the instructor, in order to come to understand a mathematical topic. There is a focus on struggle, independence, making and correcting mistakes, and discussing one’s work. IBL- style classes can be seen as a “bridge” from traditional style math classes to the advanced topics of independent studies that require a much higher level of self-motivation and self-direction on the part of the student. The mathematical area of Point-Set Topology is the study of abstract spatial relations, such as continuity and “closeness” in space. In this work, students discuss a variety of perspectives on an IBL course in Point-Set Topology, in effort to show the impact of the IBL approach on their learning experience. Poster: Friday, April 19 AM

Student: Cristina Santos Carvalho

Faculty Sponsor: April Harper (History)

The Diary of a Depressed King as Evidence of Religion as a Form of Medical Treatment for Mental Illness in the Late Medieval Ages

The treatment of the mentally ill in the Middle Ages is a topic that is not only woefully misunderstood by modern people, even modern academics but is also purposefully misrepresented to create a barbaric image of the medieval past. The actual treatment of the mentally ill in the Middle Ages was complex and varied on class, sex, social status, region, and religion. This project sets the scene of mental health broadly in the context of the Middle Ages and accounts for these variables, and then focuses in on a unique text in a unique environment - the diary of a deeply depressed king of late medieval Portugal. The paper will provide a background on how religion viewed both mental illness and science, will illustrate all the medical community had at its disposal to treat such illness, but will also explore how faith was seen as a possible treatment and how Christianity changed its approach to mental illness in this period and could be used as a form of therapy. Poster: Thursday, April 18 PM
**Student:** Amanda Setteducate (G)

**Faculty Sponsor:** Willard Harman (Biology)

**Effects on Sediment after Long-term Copper Sulfate Use on a Eutrophic Lake**

Copper sulfate (CuSO4) is a commonly used algicide in the Lake Management industry. Most often it is used to treat toxic Cyanobacteria blooms, also known as harmful algal blooms, or HABs. Copper is known to precipitate and settle into the sediment after use. Kinderhook Lake is located in Niverville, New York, and has utilized copper sulfate for Cyanobacteria blooms for several decades. The lake is considered eutrophic, or highly productive, which exacerbates the growth of toxin-producing Cyanobacteria. The effects of this widely used and affordable algicide on sediment composition over time is brought to light with sediment core analysis.

**Poster:** Thursday, April 18 PM

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**Student:** Megan Shannon

**Faculty Sponsor:** Renee Walker (Anthropology)

**BEARS, WOLVES AND PELICANS, OH MY! Animal Bone Analysis at the Pile Mound Site, Eastern Tennessee**

Archaeology is the study of different cultures and prehistories through the excavations of sites, and the analysis of artifacts and physical remains. One important branch of archaeology is zooarchaeology. This concentration focuses on the study of animal remains, like bones, shells, scales, DNA, etc. All of these items are extremely important when they are found because most faunal remains do not survive for an extended amount of time due to decomposition. When they are recovered, they are a wealth of information about diet, habitat and social status. Native Americans have occupied North America since the end of the Pleistocene Epoch and, over time, animals and domesticated plants have settled in various regions. The Mississippian Period, which dates from approximately AD 1000 to AD 1500, represents the height of cultural complexity in Southeastern North America. Large, sedentary villages with large earthen mounds, farming of corn, beans and squash, hunting wild animals and making of pottery for storage and cooking, categorize the Mississippian Period. And, hereditary chiefs who were the secular and sacred leaders for the community govern these large villages. Mississippian Culture was spread throughout the Midwest and Southeastern United States, but not much is known about the more rural settings, such as Eastern Tennessee. The Pile Mound Site, located in Eastern Tennessee, offers a unique opportunity to look at a “rural” Mississippian Site on the Cumberland Plateau. Excavations in 2014 and 2015 uncovered shallow pits associated with house structures, and radiocarbon dates place the occupation at around AD 1250. The features contained large amounts of animal remains and pottery fragments. Faunal remains can provide valuable information about food consumption, hunting techniques, environmental habitats, and social status. Preliminary examination revealed that these animals were typically consumed for food, such as deer, turkey, rabbit, and raccoon. In addition, the site also contained special animals that may have been ritual in nature, such as the Black Bear, Gray Wolf and White Pelican. Bear and wolf, in particular, are found in ritual contexts. White Pelican is exceedingly rare at archaeological sites, but they would likely have flown over Eastern Tennessee on annual migration from the Northeast to the Gulf Coast. And, other animal bones were turned into tools used for manufacturing clothing, decorating pottery and/or for other uses. This analysis will provide invaluable information about the lives of Native Americans on the Cumberland Plateau in Eastern Tennessee. For the past couple of months, analysis has been conducted on these faunal remains. Judging by the archaeological investigation, it is safe to assume that all of these remains are prehistoric due to its lack of written records. When research began, many individual bags that contained different animal remains were correctly sorted. And, while sorting, these remains were cleaned and categorized into different groups so that they could be properly inventoried. After all of these items were reorganized into different bags, they were given an FID number and cataloged. Currently, data entry is being performed on all the remains that were cataloged. Results will indicate the types of animals consumed, the habitats they came from and social activities associated with them.

**Poster:** Thursday, April 18 PM
**Student:** Emily Shaver (G)

**Faculty Sponsor:** Emily Riddle (Human Ecology)

**Nutrition Intervention with Livestrong at the YMCA**

A cancer diagnosis and the resulting treatments can lead to decreased oral intake, increased nutrient needs, and therapy related symptoms of nausea, vomiting and diarrhea. The combination of these factors can lead to malnutrition, which has detrimental effects on the progression of the disease. Early nutrition interventions have been shown to decrease the impact of this condition and improve the status of oncology patients. Outcomes are also improved when nutrition interventions are combined with physical rehabilitation programs. The Livestrong at the YMCA programs have been developed to improve the physical status of oncology patients and provide support for survivors; this program is currently lacking a vital nutrition component. A nutrition needs assessment was conducted on 22 Livestrong at the YMCA participants to determine specific needs of this population. This needs assessment survey included personal questions and a food frequency chart. The participants provided consent to complete the needs assessment survey. The results of the survey determined that these participants had all been diagnosed with different types of cancer, had undergone different types of treatment but had similar nutrition needs. Of the participants surveyed, 59% had no previous contact with a registered dietitian and, as a result, had no formal nutrition education. The results of the food frequency questionnaire showed that 86% of participants were not meeting their daily protein needs, 82% of participants were not eating sufficient grains, and 82% were not eating sufficient vegetables. Thus, this needs assessment identified a food and nutrition related knowledge deficit related to a lack of previous education in oncology patients as evidenced by no previous reported contact with a registered dietitian and estimated inadequate intake of nutrients. In conclusion, oncology patients participating in the Livestrong at the YMCA program have inadequate nutrient intake and may benefit from a formal nutrition education program. Three nutrition intervention lessons were specifically designed to address the nutrition concerns identified in the need’s assessment. Accomplishment of the objectives was evaluated on 11 participants that completed the entire intervention study. As a result, increased knowledge was demonstrated in 3 of the 4 objectives, and 100% of participants felt that they gained adequate nutrition information at the study’s end. Poster: Friday, April 19 AM

**Student:** Amy Shultis

**Faculty Sponsor:** Kiyoko Yokota (Biology)

**CLIA Learning How to Use Cyanoscope and bloomWatch to Monitor Algal Blooms on Canadarago Lake ☼**

Harmful algal blooms (HABs) occur when certain types of photosynthetic microorganisms suspended in water (phytoplankters) outcompete others and cause issues such as production of toxins that are harmful to humans and animals, interference with recreation, and reduced aesthetic value. We worked with members of Canadarago Lake Improvement Association (CLIA) and provided training on how to use a Cyanoscope Kit and bloomWatch App and desktop website. Cyanoscope Kit contains user friendly phytoplankton sampling gear and a compact microscope with a camera to help citizen scientists identify phytoplankters in water samples from lakes, ponds and rivers. bloomWatch is connected to CitSci.org, a citizen science website where users share their data and photomicrographs, help each other with taxonomic identification, and observe regional and temporal patterns among different sampling sites. We successfully calibrated and used the Cyanoscope kit and uploaded Canadarago Lake data to bloomWatch. CLIA, with our guidance and through repeated trials with various degrees of success, also became proficient with these new tools and in taxonomic identification of lake plankton samples under the microscope. They will be working with the statewide Citizens Statewide Lake Assessment Program (CSLAP) in 2019 to monitor water conditions and use the Cyanoscope kit to identify HAB-causing taxa so that they can warn citizens quicker and easier in case of suspected onset of a HAB event. CLIA members are excited to be able to perform microscopic observation of phytoplankton samples in-house but want more in-depth training so they can be better informed on the underlying ecological processes and how to communicate the information. We are planning on working with the CLIA again, who said that they have many CSLAP volunteers wishing to participate. Poster: Friday, April 19 AM
Student: Tashae Smith (G)

Faculty Sponsors: Gretchen Sorin, William Walker (Cooperstown Graduate Program)

**Dyckman Farmhouse Museum: Interpretative Plan of Slavery in Upper Manhattan**

The Dyckman Farmhouse Museum tells the story of rural Northern Manhattan, a landscape and a lifestyle that disappeared in the transformation from farming community to an urban neighborhood. Through the story of the Dyckman family and farm, the museum explores life in early 19th century rural Manhattan and the preservation of that memory in the early 20th century. During the city period, 1915-1916, the neighborhood was transforming and the Dyckman sisters responded by saving the farmhouse and creating the museum. The museum is now in a neighborhood that is 75% Dominican. Despite opening as a museum in 1916, the museum has conducted the research into the stories of the enslaved people who worked on the farm. The museum enlisted my help to find the stories of the forgotten enslaved peoples and figure out different ways to present this information to the public. For SCRA I will be presenting some of my interpretive plan on creative ways the Dyckman Farmhouse can present this history to their audiences. *Computer display: Friday, April 19 AM*

Student: James Stamos

Faculty Sponsor: Summer Cunningham (Communication & Media)

**An Autoethnographic Response to Death**

The following literature is a collection of stories that reflect on my own personal experiences following the loss of my older sister when I was 19 years old. Following my time as a college student while also attempting to balance a life as a bereaved individual. Using my experience as a Communication Studies major, I have created and relied on a personal vernacular that I have adjusted my life around in order to accept further what has transpired. Another realization I have made through my experiences are the lack of inclusion with the societal expectations of being a college student and mixing that with the societal expectations of experiencing personal grief. The mixture of being a college student and also experiencing severe loss is not often spoken about and that is why the goal of this project is to push the boundaries of communicating grief as a college student and using my past experiences to lead the charge. Implementing methods that I have found helpful during an independent research study tentatively titled “Communicating Grief and Loss” that is currently being worked on while I attend SUNY Oneonta. *Oral presentation: Thursday, April 18, 4:00 PM*

Student: Eric Swan

Faculty Sponsor: Tyra Olstad (Geography & Environmental Sustainability)

**The Impacts of Human Interaction Upon Piping Plover Populations**

Piping Plovers, an endangered species that inhabit Long Island beaches, have become a symbol of a healthy beach ecosystem. However, the Atlantic Region Piping Plover population has fallen under 2,000 pairs due mainly to human disturbances. Piping Plovers begin their breeding season in late March or early April and nest along ocean shores enabling easy food access for the chicks. Unfortunately, Piping Plover breeding grounds are often in high demand for human recreation such as fishing, camping, and driving along the shore, making it difficult to protect the Piping Plover habitat. For this study, I will draw on my experience monitoring populations and habitat on Long Island beaches to investigate the impacts of human interaction upon Piping Plover populations during breeding season, and suggest strategies to mitigate human impacts on their populations. *Poster: Thursday, April 18 PM*

Students: Danielle Swierczyna, Kaylee Lasher, Andrea Less, Odalis Barzallo

Faculty Sponsor: Alexandra Nicolette (Human Ecology)

**Erythritol as a Sugar Alcohol Replacement for Granulated Sugar in Vegan Brownies**

Erythritol is an artificial sweetener containing roughly 60% of the sweetness that is in sucrose, and has a lower glycemic index. It is commonly used in baked goods to decrease the calorie and sugar content. Previous studies have shown that a partial replacement of erythritol in baked goods may be acceptable in regards to flavor, texture, and sweetness. However, research had not yet been done to determine the
acceptability of erythritol as a granulated sugar replacement in vegan baked goods. In this study, granulated sugar was replaced with erythritol at 25%, 50%, and 100% ratios. A hedonic scale was administered to twenty-one college aged participants. Objective measurements of mass and volume were taken, as well as nutrient content. Average scores were determined for each sample under the categories of sweetness, texture/mouthfeel, moisture, appearance/color, and overall acceptability. All samples were found acceptable, however the 50% replacement with erythritol was scored the most favorably, even over the control sample. *Poster: Friday, April 19 AM*

**Students:** Dylan Syrbe, Muhammad Iqbal  
**Faculty Sponsor:** Tofazzel Hossain (Physics & Astronomy)

**Graphene Supported Shape-Controlled CeO₂ for the Application of Supercapacitor** ☼

Supercapacitors are energy storage devices which can achieve high power density and high charge-discharge cycle life as compared to batteries. To increase the capacitance of supercapacitors, carbon-related material graphene is used due to its large surface area. Cerium oxide (CeO₂) is used with graphene to increase the energy density and specific capacitance by involving the charge transfer between electrode and electrolyte via redox reaction on the electrode. X-ray diffraction and Raman spectroscopy analysis of the electrode materials confirm the presence of graphene and CeO₂. Transmission electron microscopy (TEM) images show single-layer graphene and CeO₂ nanorods with various terminated planes, such as (111), (110), and (100). The properties of supercapacitors made of synthesized graphene-CeO₂ electrodes will be discussed in detail. *Poster: Thursday, April 18 PM*

**Student:** Chloe Tarlen  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)

**The Long Island Aquifers** ☼

Considering that the Upper Glacial, Lloyd, and Magothy aquifers are Long Island’s sole source of water, there comes a large responsibility with knowing what has been polluting these water resources, and how to limit both point and nonpoint sources. The groundwater recharge rate is already as slow as it is, so continual pollution of the aquifers will not only harm the aquifers, but all of those who rely on the aquifers. Many models of the Long Island aquifers have been created in order to inform the public of the damage being done to their sole source of water. Both saltwater interface mapping and groundwater flow modeling allow for a better understanding of the destruction being done to the three aquifers. Much groundwater contamination is caused by the increased amount of nitrates seeping into the ground, which in turn had been due to old cesspool systems and the unsustainable usage of pesticides and fertilizers. However, much of this contamination can be stopped by engaging in new and sustainable techniques that will benefit the aquifers. For this research, I assess strategies to reduce aquifer contamination, including installation of high-tech cesspools and improved use of fertilizers and pesticides. Many of these techniques include the installation of high-tech cesspools and acquiring more knowledge of agriculture to better use fertilizers and pesticides. *Poster: Thursday, April 18 PM*

**Student:** Evan Timony  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)

**The Cost of Wildfire and Potential Mitigation for Future Risk** ☼

In 2018, Butte County, California suffered through one of the most deadly and destructive wildfires in United States history, the Camp Fire. Over-development of such wildfire-prone areas will inevitably lead to more human fatalities and the destruction of property. Moreover, the cost of preparing for, containing, and conducting disaster relief associated with these fires represents a significant percentage of the United States Forest Service’s budget. Using the Camp Fire as a case study, I will assess the economic, socioeconomic, and environmental impacts of the fire and present an argument for stricter regulations for development within wildfire prone areas. Stricter regulations of development can potentially mitigate future risk associated with wildfires. *Poster: Friday, April 19 AM*
**Student:** Ellie Underwood  
**Faculty Sponsor:** Tyra Olstad (Geography & Environmental Sustainability)  

**Waste Production, Energy Consumption, and Sustainable Practices within the Food Sector** ☼  
Food service is a business sector that produces a mass amount of daily waste. Waste production and disposal is a reoccurring problem, pressuring restaurant operators to seek alternatives to reduce waste production. For this project, I will be exploring waste production and energy consumption at a local, family owned restaurant in Chestertown, NY. I will inventory the amount of waste being produced daily, potential roots of the issue of waste production, the recycling methods currently used, more sustainable practices that can potentially be implemented, and the costs and benefits regarding implementing these practices. I will also conduct interviews with the restaurant owners and employees to get a humanitarian perspective. With this research, I hope to shed light on importance of waste reduction within the food service and offer viable recommendations for more sustainable practices.  
*Poster: Friday, April 19 AM*

**Student:** Luigi Valoroso  
**Faculty Sponsor:** Jennifer Withington (Biology)  

**Students Perspectives on Genetically Modified Organisms** ☼  
Genetically modified organisms have been criticized in the past, but will become prevalent in the future. While there are misconceptions that exist such as, genetically modified organisms being dangerous or may causing health problems, they may solve the problem of scarcity. As time advances, more resources are used and exhausted. GMOs may play an important role in eliminating this issue with introducing an increase growth of scarce resources. It has been said that GMOs may cause health risks in both humans and animals, many of these statements are not true. This dissertation acts in questioning a sample of students enrolled at The College of SUNY Oneonta about these common misconceptions. The survey will be given out to random volunteers in various areas on campus, who will read and agree to a consent form prior to completing the questionnaire. The questions will focus on testing the individual’s knowledge of GMOs, and the data collected will be analyzed to see if the sample population agrees with the common misconceptions listed above. It is important to dissolve these statements of fallacy to allow for an increased use of GMOs in the future.  
*Poster: Friday, April 19 AM*

**Student:** Nicholas Weier  
**Faculty Sponsor:** Keith Jones (Mathematics, Computer Science & Statistics)  

**Digital Signature Schemes**  
A digital signature is a mathematical scheme for verifying the authenticity of digital messages or documents. Normally digital signatures are used primarily in the background of software processes such as updates where users cannot see the process occurring. The purpose of this project is to illustrate the inner workings and use of digital signatures. I created an interactive application that demonstrates how digital signatures work, and in the process I also researched security and implementation concerns of the algorithms used to generate and verify digital signatures.  
*Poster/computer display: Friday, April 19 AM*

**Student:** Craig Wert  
**Faculty Sponsors:** Florian Reyda, Fred Zalatan (Biology)  

**Using Molecular Biology to Determine Parasite Identity**  
Parasites of fish have been studied from a morphological perspective for many decades. Using morphology has proven to be valuable, but can be limited in its effectiveness to precisely discriminate between individual species. A major problem that is encountered is that most Trematodes (small worms) are quite variable in size and appearance, and their morphology changes during their development and life cycle. Molecular biology techniques, such as the polymerase chain reaction (PCR) and DNA sequencing, have been employed to refine and augment the taxonomy of these small internal parasites. We are currently using a combination of morphological analysis and molecular analysis to
determine the species grouping and evolutionary relationship of some parasite samples isolated from fish caught in Otsego Lake. *Poster: Thursday, April 18 PM*

**Student:** Daniel Westman  
**Faculty Sponsor:** Les Hasbargen (Earth & Atmospheric Sciences)

**Relationship of Shape, Hardness, and Erodibility within Spruce Creek of a Retreating Catskill Waterfall**

Rock erodibility is an important part of landscape evolution, and could be useful for understanding the development and evolution of retreated waterfalls, such as Kaaterskill Falls in the Catskill Mountains in New York State, USA. This project determines rock erodibility with rock tumblers and a Schmidt hammer, which characterizes rock elastic strength. Rocks were collected around Kaaterskill Falls, and then measured for rock strength using a Schmidt hammer. The rocks were then broken and subjected to tumbling in a rock mill. The mass of particles larger than granules was measured during the course of milling to determine mass loss rates. In addition, multiple photographs were taken of the particles to create 3D point clouds using structure from motion software. Zingg shapes were determined for the particles. After measurement, the particles and pulverized material were returned to the mill for continued evolution. Two rock types were sampled around the waterfall. They include a moderately indurate red shale and a moderately indurate sandstone. A sample of red shale was collected from a bedrock outcrop and from the stream channel. The sandstone sample was extracted from a stream channel. The red shale exhibited variable erodibility, with cobbles in the stream showing lower erodibility (that is, greater strength and resistance to erosion) than chunks derived from a bedrock outcrop. Zingg classification revealed that the shales reduced in blade frequency over time while the sandstone increased. The shales showed an increase in disc frequency with tumbling duration, while the sandstone disc frequency decreased. Mass loss rates varied between rock types. Shales exhibited nearly constant mass loss rates, while sandstone showed a declining mass loss rate with time. The results provide some estimate of rock erodibility. The study also documents shape changes of alluvium due to chipping from impacts and surface wear from suspended particles in a fluid shearing environment. Such shape changes could be used to calibrate a function relating shape change to distance traveled for New York alluvium. *Poster: Friday, April 19 AM*

**Student:** Emily Whitaker  
**Faculty Sponsor:** Monica Grau (New Student Services)

**Homesickness in First-Year College Students**

My project is based off research regarding homesickness in freshman college students and the transition from high school to college. Information provided is based off scholarly articles concerning these topics and how demographics affect homesickness as well as what students need at each point in the semester in order to adjust. As a result, a survey was created to be distributed in first-year experience dorms to freshman college students. The questions regard topics such as demographics, personal experiences, and opinions on our services here on campus. The data will be used in combination with literature to create an infographic to place in the freshman dorms. This infographic will include information on how to cope with homesickness and different strategies to try when suffering. Most students face homesickness at some point during their four years, but little actually admit it or become proactive about helping themselves. Having this resource in the dorms will allow students to anonymously grab a helpful tool when struggling. Just this piece of paper could help a student adjust and find a home on campus. Research has shown that a significant number of students face these negative feelings once arriving on campus but feel as though they shouldn’t admit it. The goal for this infographic is to have a resource available to all students in an informal way that might be just what they need. Seeing these strategies could also lead to students reaching out for further help such as counseling. These homesick feelings are not ones for students to hide, so exposing the truth may hopefully lead to this necessary conversation and discussion. *Poster/computer display: Thursday, April 18 PM*
**Student:** Laiken Whittredge  
**Faculty Sponsor:** Wesley Bernard (Art)  
**"For All The Things I Can't Explain" – Exploring Mental Health Through Fine Art Photography**

Mental illness affects one in four people. Mental illness can take on many forms such as anxiety disorders, mood disorders, psychotic disorders, eating disorders, and post-traumatic stress disorders. Even though there are millions of people that suffer from mental illness, there is still stigma and shame that surrounds being diagnosed with any given type. Most people who suffer from mental illness won’t reach out for help. On average, 123 people die by suicide every day. As someone who has had their own journey and struggles with mental illness my hope is that my photographs will explain mental illness without using words, will help people understand what is happening on the inside, or even understand what it feels like. My models are posed in the elements of nature; mostly naked, vulnerable, and alone. I want the audience to feel the discomfort the model feels from being naked outside of their own homes, the vulnerability of being in the elements, the raw and naked feeling of bearing everything for everyone to see. Reaching out to get help feels exactly the same way. It is uncomfortable, it is being vulnerable, and it is being completely raw. It is an ongoing process, just like this body of artwork. Art has always been a cry for help for artist, even if they never realized it. “For All the Things I Can’t Explain” is mine. Our stigma, our awkwardness around mental health, and our broken health care system not giving mentally ill people the proper treatments or coverage they need is something that needs to change. It’s more than a hotline, reaching out to a friend, going to therapy, or popping pills. It is a cultural movement that needs to start by not being silent and showing those who don’t deal with mental illness what’s really happening in our heads. It is by showing those who suffer from mental illness that they are not alone, and that’s my goal for this body or work. *Photographic display: Friday, April 19 AM*

**Student:** Abigail Williams  
**Faculty Sponsor:** Alexandra Nicolette (Human Ecology)  
**Coconut Milk Yogurt with Increased Dietary Fiber and Protein Content**

Traditional soy yogurt recipes are lacking in protein and fiber content. Some variations of probiotic strains can produce protein as a by-product. Inulin is a dietary supplement often used to fortify food products with fiber. The focus of this research was to increase the protein content of a traditional soy yogurt recipe with the addition of *Lactobacillus reuteri* and inulin. The control soy yogurt recipe included coconut milk and vanilla soy yogurt. The inulin and *Lactobacillus reuteri* were gradually increased in percent concentrations in each of the three variations. Sensory characteristics such as texture, mouth feel, taste, and overall acceptability of each variation were evaluated by 40 participants. Overall, the clear favorite of the participants was variation two, which had the 50% increase of inulin and *Lactobacillus reuteri*. The color was measured with Adobe Photoshop for IOS and the colorimetric values showed no differences between the variations. The viscosity of each sample was measured by a line spread test. The only sample that showed a significant difference was the control group, which spread ¼ of an inch. The protein content of the yogurt was evaluated by Neo Sci protein strips. This protein test showed no significant difference between each variation of the yogurt. The dietary fiber content was evaluated by the MyFitnessPal, an online nutrition analysis tool. The dietary fiber content did increase gradually in each variation of the yogurt samples. It was hypothesized that the addition of inulin and *Lactobacillus reuteri* to a soy based coconut vanilla yogurt will result in a product that has a higher protein and fiber content while maintaining desirable sensory and objective characteristics. *Poster: Friday, April 19 AM*

**Students:** Sarah Witman, Alexandria Collum, Amaya Hodges  
**Faculty Sponsor:** Elizabeth Bastiaans (Biology)  
**Does Mating with a Novel Male Increase Reproductive Investment by Female Bean Beetles?**

We are testing mate choice and egg-laying behavior in female bean beetles. This species, *Callosobruchus maculatus*, is both a crop pest and a model organism for understanding sexual conflict. Mating is costly for female bean beetles because the males have barbed copulatory organs, used to
remove other males’ sperm from the females’ reproductive tracts. We have maintained colonies of bean beetles on petri dishes of mung beans. Two mating trials are performed for each female, one trial on the day after they emerge and one trial three days later. Virgin females are mated with virgin males and the number of eggs counted after three days. In the experimental group, the females swap mates for their second mating, whereas in the control group, females are mated again to their original male. We explore the differences in the level of decline between the number of eggs laid after the first and second matings when the female has a novel mate vs. when she mates twice with the same male. Poster: Friday, April 19 AM

Student: Chumin Wu
Faculty Sponsor: Ho Hon Leung (Sociology)

Documentary Photo Essay on Chaoyang Village, Southern China

In these few years, localization has become a common practice of city planning. I chose Chaoyang Village in Southern China as my research subject to examine the value of the local culture and lifestyle, threats of reorganization, as well as the concerns of living space for the remaining residents. The photo essay will be presenting the history of Chaoyang Village and the villagers’ lives under the influence of rapid urbanization of rural areas and the expansion of urban and suburban developments into rural areas. This series of photos includes portraits of villagers, landscapes of countryside, and still lives of home goods as a visual essay to document the vibrant yet tranquil life on the other side of the globe. In additional, this project uses Kyoto, a popular tourist city in Japan, as an example to illustrate how it successfully maintained its historical architecture by blending traditions with modernity. Yet, it is a research that analyzes the potential of Chaoyang Village to be preserved despite modernization and urbanization due to its unique dialect, local organic food, as well as the distinctive Ming and Qing dynasty architectural heritage. Poster/computer display: Thursday, April 18 PM

Students: Anastasia Youngs, Hayley Dower (G)
Faculty Sponsor: Daniel Stich (Biology)

Walleye (Sander vitreus) Growth in Otsego Lake, NY

Walleye (Sander vitreus) is recreationally and ecologically important throughout New York State waterbodies, and the success of many walleye fisheries is strongly linked to their growth. As a result, the species has been stocked throughout the state for recreational fisheries. In populations supported by large-scale stocking efforts, we rarely collect information about natural reproduction. Walleye were stocked from 2000-2014 in Otsego Lake, New York for biological control of Alewife (Alosa pseudoharengus) with a secondary purpose of establishing a recreational fishing waterbody. Following the removal of the Alewife population, restocking efforts ceased and walleye numbers have been supported only by natural reproduction. Recreational purposes of Walleye have been strongly supported even though stocking efforts have ceased. With the collapse of Alewife and increase of popularity of a harvest-oriented species, the current status of the population and the ability to sustain a fishery into the future is uncertain. The purpose for this long-term experiment is to fill information gaps about the current population by studying fluctuations in individual growth. Information was collected about the Walleye and applied to the von Bertalanffy growth model. From this model, an estimate of the individual mean length was obtained. Results have shown that growth appears to be slower than in previous years, combined with the fact that the sex ratio is strongly skewed towards males. The population abundance is decreasing, and this population may be stabilizing at low levels and/or vulnerable to recreational over-harvesting. Poster: Friday, April 19 AM