GENESEO

19th Annual GREAT Day

April 23, 2025

GENESEO RECOGNIZING EXCELLENCE,
ACHIEVEMENT & TALENT

Welcome to SUNY Geneseo's Nineteenth Annual GREAT Day!

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

http://www.geneseo.edu/great_day

This program lists the abstracts for all submissions for GREAT Day 2025, which will be held on Wednesday, April 23, 2025.

The **keynote address by V Spehar** will be held on Wednesday, April 23, 2025, 1:00-2:15 pm in Wadsworth Auditorium.

GREAT Day utilizes Oxford Abstracts for its conference platform. Complete conference information is available in the Virtual Program and the GREAT Day webpage is: *http://www.geneseo.edu/great_day*

The GREAT Day 2025 artwork was created by **Zachary Mogavero**, a student in the SUNY Geneseo LIVES Program.

GREAT Day often falls on or near **Earth Day**, which is held on April 22nd each year. In recognition of this, presentations related to the environment and/or sustainability are designated by a leaf symbol - 🌿 - in this program.

Presentations related to this year's Ideas that Matter: Artificial Intelligence are designated with a lightbulb - 💡 - in this program.

TABLE OF CONTENTS

ABOUT THE VIRTUAL GREAT DAY PROGRAM:

- GREAT Day 2025 On-line Program
- This year's program utilizes the Oxford Abstracts conference platform.
- PDFs of some posters are available within the on-line program's Poster Gallery.

Don't forget to check out our campus digital repository, KnightScholar! KnightScholar makes faculty and student work freely available in support of our Open Access Policy. It's where you can find posters from past GREAT Days as well as the Proceedings and many other quality publications.

GREAT DAY 2025 SCHEDULE AT A GLANCE

KICK-OFF COFFEE HOUR HONORING 1-, 10- AND 15-YEAR SPONSORS, 4-YEAR STUDENT PRESENTERS, AND PRESENTATION OF THE 2024 PROCEEDINGS OF GREAT DAY	8:30 AM - 9:15 AM	Milne Library
CONCURRENT SESSION 1		
1A: Biology 1: Cells, Genes, Expression	9:30 AM - 10:45 AM	Bailey 101
1B: Geneseo Changemakers: Student Ambassadors		Bailey 102
1C: Chem & Biochem Honors Panel		Bailey 103
1D: Black Humanities		Bailey 104
1E: Geneseo's Microcredential in Science Communication Projects		Bailey 105
1F: Edgar Fellows Capstones Panel 1		Bailey 201
1G: Edgar Fellows Capstones Panel 2		Bailey 202
1H: Business Management		Bailey 203
1I: Sociomedical Sciences Research		Bailey 204
1J: History		Milne 301
1K: English Through the Centuries: Language and Story		Milne 302
1L: Research in Psychology		Milne 303
1M: Evaluating Dance: Global and Contemporary Influences		Milne 319
MEET MICHELE, GREAT DAY THERAPY DOG!	9:45 AM - 11:00 AM	Milne Library
ART IN A TIME OF A.I.	10:00 AM - 6:00 PM	MacVittie College Union Ballroom Lounge
POSTER VIEWING OPENS (Authors will be present during the 2:30 - 4:30 PM Poster Presentation Session)	10:00 AM - 4:30 PM	MacVittie College Union Ballroom
JAZZ ENSEMBLE	11:00 AM - 11:30 AM	Wadsworth Auditorium
CONCURRENT SESSION 2		
2A: Biology 2: Ecosystems	11:00 AM - 12:15 PM	Bailey 101
2B: Geneseo Changemakers: Student Ambassadors		Bailey 102
2C: Global Language Education		Bailey 103
2D: Justice, Law, and Democracy		Bailey 104
2E: Borderlands Action Projects		Bailey 105
2F: Edgar Fellows Capstones Panel 3		Bailey 201
2G: Edgar Fellows Capstones Panel 4		Bailey 202
2H: Toward a Sociology of Unusual Experiences: Responding to Squirrel Sounds, an Eclipse, and Encountering a Deceased Dolphin		Bailey 203
2I: Political Science and International Relations Honors Theses		Bailey 204
2J: Perspectives on American Indian Boarding Schools		Milne 301
2K: Global African Studies Research I		Milne 302
2L: Applications of Mathematics		Milne 303
2M: Data Analytics Capstones		Milne 319
2N: Having the Time of our L.I.V.E.S.		Newton 202
LET'S SPEAK CHINESE, WITH SINGING AND DANCING	12:40 PM - 12:55 PM	Multicultural Center Blake Hall

KEYNOTE: V SPEHAR - JACK '76 AND CAROL '76 KRAMER ENDOWED LECTURESHIP	1:00 PM - 2:15 PM	Wadsworth Auditorium
MEET MYKO, GREAT DAY THERAPY DOG!	2:30 PM - 3:30 PM	MacVittie College Union Ballroom
POSTER PRESENTATION SESSION	2:30 PM - 4:30 PM	MacVittie College Union Ballroom
A CAPPELLA HOUR	4:30 PM - 5:30 PM	Multicultural Center Blake Hall
CONCURRENT SESSION 3		
3A: Biology 3: Interactivities	4:30 PM - 5:45 PM	Bailey 101
3B: Interdisciplinary Ideas		Bailey 102
3C: Centering Black Experiences in the K-12 Classroom		Bailey 103
3D: History of Mathematics		Bailey 104
3E: Women's and Gender Studies Capstone Presentations		Bailey 105
3F: Edgar Fellows Capstones Panel 5		Bailey 201
3G: Communication		Bailey 202
3H: Sociology		Bailey 203
3I: Trumponomics: Eggs, Tariffs, Debt, and Other Macroeconomic Issues		Bailey 204
3J: Idea2Venture Business Pitch		Milne 301
3K: Global African Studies Research II		Milne 302
3L: Chemistry		Milne 303
3N: Music Technology		Brodie 202
GIFF: GENESEO INSOMNIA FILM FESTIVAL & AWARDS CEREMONY	6:00 PM - 7:00 PM	Wadsworth Auditorium

KICK-OFF COFFEE HOUR HONORING 1-, 10- AND 15-YEAR SPONSORS, 4-YEAR STUDENT PRESENTERS, AND PRESENTATION OF THE 2024 PROCEEDINGS OF GREAT DAY

Wednesday, April 23th, 8:30-9:15 AM, Milne Library

GREAT DAY HONORS

Each year on GREAT Day we acknowledge the work of so many whose support and dedication make GREAT Day the special program that is has become. Thank you sponsors and GREAT Day Proceedings participants.

FIFTEEN-YEAR AND TEN-YEAR SPONSORS

GREAT Day would not be possible without the dedicated faculty and staff who work with students throughout the year on the projects that are presented annually. As we observe the 19th Annual GREAT Day, we would like to acknowledge the following faculty and staff who, as of this year, have served as a sponsor for at least 15 or 10 GREAT Days:

15-YEAR SPONSORS

Caroline Haddad, Mathematics
Kristina Hannam, Biology
Maria Helena Lima, English

Jennifer Rogalsky, Geography and Sustainability Studies
Léonie Stone, School of Business
Jasmine Tang, Global Languages and Cultures

10-YEAR SPONSORS

Kodjo Adabra, Global Languages and Cultures
Emilye Crosby, History
Jennifer Guzmán, Anthropology
Aaron Heap, Mathematics

Melanie Medeiros, Anthropology
Lytton Smith, English
Nicholas Warner, Geological, Environmental, and Planetary Sciences

FIRST-TIME SPONSORS

This is the first year the following faculty and staff have served as a sponsor for GREAT Day – Welcome!

Jaime Arena, Office of Advising
Kara Cornell, Music and Musical Theatre
Cheyenne DeMarco, Student Life
Cara Dolan, Student Life
Jeffrey Donlon, School of Business
Matthew Hatkoff, Biology
Brenna McCaffrey, Anthropology
Nicole Morrissey, School of Education
Samuel Newberry, Biology

James Oigara, School of Education
Wendy Owens Rios, Biology
Ken Pan, School of Business
Reece Torres, Sociology
Ashley Watson, Communication
Alan Witt, Milne Library
Jeonghwa Yang, Political Science and International Relations

FOUR-YEAR STUDENT PRESENTERS

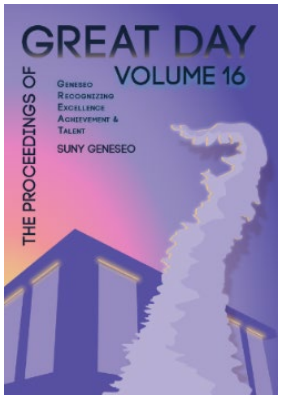
Beginning this year, we're recognizing students who have presented at four GREAT Days in a row! Congratulations to the following students!

Alannah Egan
Shannon Ervay
Micah Ford
Lauren Martin

Lauren McCormick
Grace McMillan
Mollie McMullan

Aidan Nichols
Lindsey O'Hern
Ethan Whitehead

PROCEEDINGS OF GREAT DAY 2024



Established in 2009, *Proceedings of GREAT Day* compiles and publishes promising student work presented at SUNY Geneseo's GREAT Day symposium. The projects, presentations, and research included here represent the academic rigor, multidisciplinary study, and creativity of the students taking part in the SUNY Geneseo GREAT Day symposium. The *Proceedings of GREAT Day 2024* is now available!

STAFF: ALLISON BROWN, MAX SPARKMAN, AND DANIEL ROSS
STUDENT EDITORS: **NIA JONES** AND **HAILEY BERNET**

Students and Faculty Mentors Published in the Proceedings of GREAT Day 2024

CHARACTERIZATION OF MOTOR PERFORMANCE IN A MOUSE MODEL OF AUTISM FED A KETOGENIC DIET IN EARLY ADOLESCENCE
SOPHIA AZURIN
SPONSORED BY ALLISON BECHARD, PHD

FUGITIVE SLAVES AND FREEDOM: A REEXAMINATION OF THE CONNECTION BETWEEN FUGITIVE SLAVES AND ABOLITION
MICHAEL BOGART
SPONSORED BY JUSTIN BEHREND, PHD

ALCOHOL USE, NEUROINFLAMMATION, AND A KETOGENIC DIET IN A MOUSE MODEL
DHAVAN BRAMBHATT
SPONSORED BY ALLISON BECHARD, PHD

A RESEARCH EXPLORATION OF ETHNIC, FOLK, AND MODERN DANCE
MORGAN COMSTOCK
SPONSORED BY JONETTE LANCOS, PHD

GEN(D)RE-BENDING IN MTV'S CARMEN: A HIP HOPERA
ALANNAH EGAN
SPONSORED BY ANTHONY LALENA, DMA

DANCE AS IDENTITY AND COMMUNICATION: EXPRESSION OF BHARATANATYAM
SHANNON ERVAY
SPONSORED BY JONETTE LANCOS, MFA

GUNS, BOMBS, AND FLYING MACHINES: DISPROVING CLAIMS OF MODERN TECHNOLOGY IN ANCIENT INDIA
DORIAN GERACI
SPONSORED BY JAMES AIMERS, PHD

IMPROVE READING
EMMA HAYES
SPONSORED BY MARK RIDER, MBA

THE LONG JOURNEY TO INACCESSIBILITY
SAMUEL HEALY
SPONSORED BY LEE PIERCE, PHD

A COMPARATIVE STUDY OF GENDER AND SEXUALITY IN BERLIN: 1918-1945
LAUREN KIMES
SPONSORED BY JOVANA BABOVIĆ, PHD

SILENT CONVERSATIONS: THE ROLE OF INTERNAL DIALOGUE IN EMOTIONAL ENERGY
MADELINE KOHN
SPONSORED BY STEVE DERNE, PHD

DETERMINANTS OF FINANCIAL LITERACY AT SUNY GENESEO
ALEXIS KRUZICKI & ISABELLA NICASTRO
SPONSORED BY BYEONG-HAK CHOE, PHD

HEATH CARE RECRUITMENT: POST COVID-19 PANDEMIC
NATALIE MANDRYCKY, TYLER STEINBERG, & GABBY BIGGER
SPONSORED BY AVAN JASSAWALLA, PHD

THE VAN TAC VU PROGRAM: PSYCHOLOGICAL WARFARE IN THE VIETNAM WAR
LUCAS SCHAFFER
SPONSORED BY JORDAN KLEIMAN, PHD

ADAPTING BLACK CULTURE: WITHOUT THE BLACK EXPERIENCE
BAKHITA SOLENYANU
SPONSORED BY MARIA LIMA, PHD

GREAT DAY THERAPY DOGS

MEET MICHELE, GREAT DAY THERAPY DOG!

Wednesday, 23th April, 2025, 9:30 - 10:30 AM, Milne Library

MEET MYKO, GREAT DAY THERAPY DOG!

Wednesday, 23th April, 2025, 2:30 -3:30 PM, MacVittie College Union Ballroom

THE JACK ’76 AND CAROL ’76 KRAMER ENDOWED LECTURESHIP

New Media Literacy with V Spehar:

A focus on citizen education and combating misinformation in the complicated media environment that we live in

Wednesday, April 23th, 2025, 1:00-2:15 pm, Wadsworth Auditorium

About V Spehar

V Spehar (they/them) is a Rochester-based LGBTQIA+ podcaster, online personality and citizen journalist. Spehar launched Under the Desk News on TikTok in April 2020 with the aim to make news media less intimidating and easier to understand and rapidly amassed 2.9 million followers. Their one-minute segments (literally delivered from under a desk) have attracted a bipartisan audience. In 2022, Spehar launched V Interesting, a GLAAD-nominated long-form podcast with original reporting that tackles various topics from Gen Z voter engagement to gender-affirming surgery. Their reporting has taken them to the press room of the 2023 State of the Union to hosting the NBC’s livestream of the Thanksgiving Day Parade to speaking at UNESCO summits. This year, V received a special achievement Webby for their concise and compassionate reporting.

FESTIVAL OF MUSIC, DANCE AND FILM

JAZZ ENSEMBLE

11:00 - 11:30am, Wednesday, 23th April, 2025, Wadsworth Auditorium

Session Chair

Bill Tiberio, Music and Musical Theatre

190 • Geneseo Jazz Ensemble Performance

Bill Tiberio, Katherine Penna, Hannah Loughner, Dante Dignitti, Justin Weisberg, Micah Mcculley, Samuel Newlin, Justin Cohen, Justin Ronzoni, Jacob Nieto, Jacob Everett, Shaun Fitzgerald, Lauren Braun, William Carmen, Joan Karron, Alannah Egan, Alexander Stoker

Abstract

a snapshot of the SUNY Geneseo Jazz Ensemble's Spring repertoire

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music and Musical Theatre

Faculty Sponsor

Bill Tiberio

LET'S SPEAK CHINESE, WITH SINGING AND DANCING

12:40 – 12:55pm, Wednesday, 23th April, 2025, Multicultural Center, Blake Hall

Session Chair

Jasmine Tang, Global Languages and Cultures

35 • Let's Speak Chinese with Singing and Dancing.

Erin Dougan, Samantha Canter, Peyton Cartwright, Sydney Passalacqua, Chun Ngai Yip, Kaan Kalendar

Abstract

Join us and learn Chinese through a singing and dance performance with the students of CHIN 102, taught by Jasmine Tang.

Subject Category

Interdisciplinary and Other Categories: Linguistics

Faculty Sponsor Department

Global Languages and Cultures

Faculty Sponsor

Jasmine Tang

A CAPELLA HOUR

4:30 – 5:30pm, Wednesday, 23th April, 2054, Multicultural Center, Blake Hall

Session Chair

Kara Cornell, Music and Musical Theatre

47 • All Acapella Hour - Exit 8

Clare Douglas, August Fountain, Abby Prichard, Dani Scolton, Regina Cucchiara, Olivia Tedford, Lea Mancarella, Jena Balzano, Riley Martin, Sophia Bobeck, Annamarie Lyman, Kira Ryan, Maeve Frost, Maya Tucci, Cadence Panol, Saya Kondo, Robby Harrington, Aidan Nichols, Lucas Piatkowski, Grace McMillan, Sachin Abidhananthar, Dominic Schneider, David Cross, Christian Tewksbury, Zach Boice

Abstract
A performance by Exit 8 - one of SUNY Geneseo's all gender acapella groups
Subject Category
Arts and Humanities Categories: Music
Faculty Sponsor Department
Music and Musical Theatre
Faculty Sponsor
Kara Cornell

97 • Emmelodics A Cappella Performance

Lindsey O'Hern, Grace McMillan, Aidan Hellman, Amanda Louis, Amanda Lozy-Lester, Anthony Tyler, Ashlee Brison, Caroline von Hof, Ella Singer, Emily Kline, Gabbee Guido, Jacey Kleotzer, Jada Doss, James Hunter, Jane Konieczny, Jordan Lampack, Kate Robinson, Katie Lamberson, Kyra Drannbauer, Lauren Hickok, Lauren Murphy, Liv Rayburn, Madison Butler, Madilyn Pawlak, Maya Powell, Nick Andrews, Riley Martin, Rylie Wallace, Sarah Dean, Xavier Canaple, Morgan Olsen
Abstract
All A Cappella hour with Emmelodics!
Subject Category
Arts and Humanities Categories: Music
Faculty Sponsor Department
Student Life
Faculty Sponsor
Cara Dolan

276 • Hips 'N Harmony GREAT Day Performance

Lona Tucci, Savannah Piatkowski, Cara Pfluke, Ella Sosnowski, kira painter, Jojo Meskos, Natalie Casey, Hannah Slade, Olivia Messina, London Pantane, Caroline Fruck, Nina Suszynski, Emma Ward, Chai Anderson, Lucy SanGeorge, Erin Schulz, Jules Ardito, Becca SanGeorge, Mina Klentos, Dylan Wong, Cecilia Minnuto, Anna Santoro, Diana Sorensen, Payton Clark, Mina Pine, Soleil Zgoda, Mykenzie Prevost, Mary Saporito, Josie Reding, Norah Wethheimer
Abstract
Acapella Performance from the group Hips 'n Harmony
Subject Category
Arts and Humanities Categories: Music
Faculty Sponsor Department
Music and Musical Theatre
Faculty Sponsor
Joan Floriano

293 • Between the Lines

Katie Edwards, Anna Hansen, Juli Mora, Cadence Butler, Katie Tothero, Arielle Beckman, Aurelia Tice, Ashley Cirbus, June Bucci, Courtney Duggan, Sonia Horowitz, McKenna Oley, Percy Davis, Liz Orlep, Abbie Kennedy, Gwendoline Sherman, Sam Olson, Liam Berger, Willow Bertram
Abstract

Acapella performance by Between the Lines Acapella

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music

Faculty Sponsor

Kara Cornell

297 • Southside Boys

Bradley Adams, Gabe Agnello, Edward Barr-Forget, Robbie Beirne, Andrew Bellotti, Dominic Breton, Evan Burmeister, Quentin Cacciatore, Xavier Canaple, Ben Carlson, Jared Coleman, James Cortes, James Degnan, Trevor Donlon, Max Hall, Aidan Hellman, Josh Hemmings, Gabe Lindsay, Jack Marra, Ben Michlinski, Aidan Nichols, Sam Parrinello, Ethan Shaw, Ian Suszynski, Christian Tewksbury, Anthony Tyler, Max Worden

Abstract

Southside Boys Acapella will be performing at the Acapella Hour along with the other acapella groups at Geneseo.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music and Musical Theatre

Faculty Sponsor

Kara Cornell

Group Session Name

Acapella Hour

Group Session Chair

Kara Cornell

GIFF: GENESEO INSOMNIA FILM FESTIVAL & AWARDS CEREMONY

6:00 - 7:00pm, Wednesday, 23th April, 2025, Wadsworth Auditorium

Session Chair

Sarah Brookes, Communication

In the Geneseo Insomnia FIlm Festival, teams of up to four students have 24 hours to write, record, and edit a three-minute movie. These movies may be any genre - comedy, drama, horror, etc. - so long as they include at least three elements from a list of 20 provided by the GIFF staff. The 2026 filming event took place from March 27 to March 28, and the resulting videos were evaluated by a panel of five faculty and staff. Now we invite you to our GREAT Day event, during which we will screen all films and award prizes to the teams with the top three films. The event is open to all Geneseo community members, and we encourage you to bring family, friends, and colleagues as we recognize the excellence, achievements, and talent of our 2026 Insomniacs!

288 • "The Readings" by Films by Paul

Jacqueline Conti, Sandra Pandza, Ella Murtagh, Lily Hendricks- Jones

Abstract

Four strangers receive tarot readings, each drawing a card that seals their fate. A wandering hitchhiker, an insomniac escaping heartbreak, and a car accident survivor fearing the road are all spiraling toward their doom. Their paths converge one fateful night. In a moment of panic, their lives change forever. Fate has played its hand.

Subject Category

Social Science Categories: Communication

Faculty Sponsor Department
Communication
Faculty Sponsor
Sarah Brookes
Group Session Name
Geneseo Insomnia Film Festival
Group Session Chair
Sarah Brookes

291 • Case File No. 328

Abigail Kennedy, Archer Maduro
Abstract
Four college friends attempt to hunt down a mysterious cryptid in the woods. What could go wrong?
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Communication
Faculty Sponsor
Sarah Brookes
Group Session Name
Geneseo Insomnia Film Festival
Group Session Chair
Sarah Brookes

295 • The Spirit of Friendship

Anna Arehart, Lauren Braun, Shaun Fitzgerald, Bailey Miller
Abstract
Three friends—one eager, one anxious, and one indifferent—sit down to play a game. Annoyed by the game seemingly not working, the three friends fail to acknowledge the lonely guest who has joined them. It takes pushing the guest to their breaking point for the three friends to learn the true spirit of friendship.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Sarah Brookes
Group Session Name
Geneseo Insomnia Film Festival
Group Session Chair
Sarah Brookes

296 • [Dis]connect

Nathaniel D'amato, Faith Zatlukal, Kendall Cruise, Angela Totaro
Abstract
A student prepares to start an assignment due that night, getting a tad distracted along the way.
Subject Category
Social Science Categories: Communication

Faculty Sponsor Department
Communicaton
Faculty Sponsor
Sarah Brookes
Group Session Name
Geneseo Insomnia Film Festival
Group Session Chair
Sarah Brookes

298 • The Joke's on Me

Giulyana Gamero, Gianna Bolognino, Zoey Heisel
Abstract
A clown monologues her stream of consciousness to you, the viewer, atoning for her crimes.
Subject Category
Interdisciplinary and Other Categories: Film Studies
Faculty Sponsor Department
Communication
Faculty Sponsor
Sarah Brookes

ART IN A TIME OF A.I.

10:00am-6:00pm Wednesday, 23 April, 2025, MacVittie College Union Ballroom Lounge

9 • Changes 💡

Makayla French

Abstract

Changes is a printed digital art piece used to convey the effect AI is having on artists and other professions. The creation of AI has changed the concept and process of art for good regardless of the implications of negative outcomes. This piece conveys humanities desire for forward motion and constant change and improvement. Additionally it shows the link between what we create as humans and how those creations affect the trajectory of our world. This story is conveyed through the color palette using a gradient of primary and secondary colors, as well as visual representation of humanity and AI through hand interlocking.

Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

Biology

Faculty Sponsor

Matthew Hatkoff

300 • AI Poem Generator

Savannah Wyatt-Saylor

Abstract

TK

Subject Category

Interdisciplinary and Other Categories: Other

Special Topic Information

Ideas that Matter: AI

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Lytton Smith

301 • Silicon Seedlings / Metal Babe

Catie Prospero McGuire

Abstract

TK

Subject Category

Interdisciplinary and Other Categories: Other

Special Topic Information

Ideas that Matter: AI

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Lytton Smith

CONCURRENT SESSIONS

CONCURRENT SESSION 1

9:30 - 10:45am, Wednesday, 23 April 2025

1A: BIOLOGY 1: CELLS, GENES, EXPRESSION

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 101

Track

Science and Mathematics Categories: Biology

Session Chair

Josie Reinhardt, Biology

121 • The Effect of Meiotic Drive on Sperm Survival in Teleopsis Dalmanni

Ravi Patel, Hasan Sarfaraz

Abstract

Meiotic drive in Teleopsis dalmanni skews allele inheritance, favoring the X-linked sex-ratio (SR) allele (100%) over Mendel's expected 50%, mainly producing female offspring and reducing male sexual competition due to shorter, less attractive eye stalks. Studies in similar species, including the close relative T. whitei, revealed that postcopulatory sexual selection affects reproductive success via sperm competition and cryptic female selection. We hypothesized that sperm from an SR male would be less viable after a second mating due to interactions with seminal fluids from a subsequent mating by a non-drive (ST) male. Following controlled matings, we dissected the female reproductive tracts and stained the stored sperm. Viability was determined using a live/dead sperm viability kit and fluorescence microscopy, with living sperm fluorescent green and dead sperm fluorescing red. Sperm counts were collected to assess viability between treatments. PCR genotyping was used to categorize male flies as SR or ST and compared to the sperm phenotypes. We then asked whether SR males had transferred fewer sperm, and if SR males' sperm is less viable.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Josephine Reinhardt

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
Faculty Incentive Grant

140 • Impacts of Meiotic Drive on JASPer Gene Expression During Male Testis Development

Connor Willitt, Gabriel Quintero

Abstract

Teleopsis dalmanni, Malaysian stalk-eyed flies is a species of flies that exhibit sex ratio (SR) meiotic drive, a selfish X chromosome allele that violates Mendel's Law of Segregation. Which prevents males from producing only Y-bearing sperm, causing them to only father females. Previous research has found five large overlapping inversions on the drive (SR) X chromosome that contains five paralogs (duplicates) of the JASPer gene, a candidate gene for drive. Three of these paralogs were found to have higher levels of expression and coverage compared to the standard (ST) X chromosome. The paralogs' gene segments were analyzed using PCR and gel electrophoresis and found to be identical to ST segments. This indicates the SR-specific duplicate is located somewhere else on the genome. SR flies express higher levels of JASPer, however, it is not known when those levels are increased. The main goal of the current research

is to test when the expression of JASPer paralogs changes. We dissected testis from males through juvenile development to sexual maturity. Those testes were genotyped, and RNA expression levels from SR flies were sequenced in outside laboratories. The expression levels were then compared to the known expression levels of ST flies. This will help us understand when JASPer and other gene expression levels change during a fly maturation and possibly help understand what may be causing drive.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Josephine Reinhardt

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

234 • Influence of Meiotic Drive on Serotonin Expression in T. dalmanni

Jacob Fields

Abstract

During gamete formation, the parent's alleles segregate and one allele is randomly selected and passed to the gamete; this is known as the fundamental law of segregation. Meiotic drive violates this law by altering the probability of allele selection, biasing it greatly in favor of drive alleles. Meiotic drive (SR) in male stalk-eyed flies (Teleopsis dalmanni) is X-linked, leading to majority female offspring from SR males. In addition to skewing the sex ratio of offspring, other drive-associated differences have been observed. One such difference is SR males exhibit more aggressive behavior. The exact mechanism behind this phenotypic difference remains unclear. The neuropeptide serotonin (5-HT) is known to be associated with aggressive behavior in stalk-eyed flies. Therefore, we hypothesized we would observe differences in the expression of genes associated with 5-HT between ST and SR males. To test this, 162 flies were photographed and their weights, eye-stalk length and body length were measured before they were dissected, their heads removed and their eyes clipped. DNA was extracted from the bodies and the flies were genotyped to determine if they were SR or ST. The heads from the SR and ST male heads were then pooled and RNA was extracted. We used RNA sequencing to characterize differences in gene expression in the heads of ST and SR flies with a focus on the serotonin pathway. This may provide insight into the mechanism behind the increased aggressiveness of SR males.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Josephine Reinhardt

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

284 • The Hidden Curriculum: Eugenics, Sickle Cell Disease, and Medical Consequences

Fatima Bartley

Abstract

This study evaluates the remnants of eugenics ideology about Sickle Cell Disease (SCD) in the context of the SUNY Geneseo biology curriculum. This interdisciplinary study also investigates how eugenic ideology can impact progress in academic and healthcare settings. Historically, SCD was used to justify reproductive control and race-based science toward the Black community at the peak of the eugenics movement. Although SCD eugenics ideology is no longer overt, its traces may remain embedded in academic curriculum, offering insight into the barriers sickle cell patients face in healthcare settings and how we learn about it. To find traces of eugenics ideology in our curriculum, a survey was conducted among five classes offered across the biology curriculum at SUNY Geneseo. The survey was designed to

assess student knowledge about SCD, along with any lingering misconceptions. While students were able to identify the mechanics of SCD, there were a significant number of misconceptions. A textbook analysis was also conducted on the standard general biology textbook to find commonalities across all students. Both the textbook analysis and survey revealed that SCD was described in mechanical terms, whereas Cystic fibrosis was described in a medical context. An interview with a hematologist provided further insight into the disparities and barriers SCD patients face.
The findings of this study suggest a need to update how we discuss SCD: students should learn not only the complex biology of the disease but also its social impact.

Subject Category
Science and Mathematics Categories: Biology
Faculty Sponsor Department
Biology
Faculty Sponsor
Betsy Hutchison
Funding Sources
McNair Scholars Program Support

1B: GENESEO CHANGEMAKERS: STUDENT AMBASSADORS

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 102
Track
Interdisciplinary and Other Categories: Ambassadorship
Session Chair
Melanie Medeiros, Anthropology

265 • The Home Away from Home Program: Improving Care for Neurodegenerative Diseases

Sonya Lyalikov
Abstract
This project seeks to address the challenges faced by individuals with Alzheimer's, Dementia, and Traumatic Brain Injury (TBI) by exploring ways to delay neurodegeneration while providing cognitive stimulation and comfort to participants, and alleviating emotional strain on caregivers. The "Home Away from Home" program creates a dedicated environment for seniors with memory-related illnesses to engage in activities such as puzzles, chair yoga, and balloon volleyball. However, the program faces limitations in providing accessible, cost-effective activities that offer meaningful cognitive stimulation, particularly for participants experiencing advanced emotional detachment. To improve the program, this project proposes integrating evidence-based interventions such as Rendever Virtual Reality (VR) and music therapy, both of which have demonstrated positive effects on participants' morale, anxiety, and cognitive function. Additionally, security measures, including lock systems and outdoor cameras, will be implemented to address concerns about wandering, while a respite-specific tablet will streamline operations and reduce the administrative burden on staff. A central focus of this initiative is enhancing caregiver support, as caregivers of individuals with dementia face heightened risks of depression and burnout. Monthly workshops and resources provided by the Alzheimer's Association will offer critical support for caregivers. Furthermore, the project aims to increase community engagement and program sustainability through targeted advertising to expand enrollment and secure ongoing funding. By collaborating with local organizations, such as Maple City Music Therapy and Rendever, this project strives to enhance the quality of life for both participants and caregivers while ensuring the program's long-term success.
Subject Category
Science and Mathematics Categories: Neuroscience
Faculty Sponsor Department
Center for Integrative Learning
Faculty Sponsor
Melanie Medeiros
Funding Sources

Student Ambassador Award

126 • Pathways to Prosperity: Building Financial Wellness in Rochester

Jamari Williams

Abstract

Financial illiteracy is a persistent issue in many communities, contributing to cycles of poverty and limiting economic mobility. Many individuals lack access to essential knowledge about saving, budgeting, and investing, leaving them unprepared to build long-term financial stability. My Ambassadorship project aims to address this by providing an educational event where I hope to partner with local organizations to provide meaningful information.
Over the course of the year, I have reached out to multiple organizations to try and gather potential collaborators on this project. I've also created a survey that I plan on giving to these organizations so that they can send them out on my behalf. Continuing into the year, I plan on holding meetings with these organizations to get good sense for who would be willing to get involved. In this presentation, I will briefly discuss the financial challenges facing underserved communities, outline the objectives and structure of my ambassador project, and highlight the progress made so far. I will also share key insights from my experiences and discuss future steps to expand the project's reach and impact.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros

Funding Sources

Student Ambassador Award

165 • Revitalizing New York's Dairy Industry: Analyzing and Proposing Policy Amendments to Cultivate Sustainable Growth 🌿

Delaney Livermore

Abstract

Due to barriers set in place by various state agriculture policies, small/local dairy farmers in New York State have a hard time making a profit, and staying afloat in the industry. As a result, it can be difficult to make dairy farming a career as a smaller dairy farmer, as the labor intensive work doesn't have as many benefits as other careers do in today's society. However, the dairy industry isn't growing, it's just becoming more capitalized. With the rise of corporate farming, and the decrease in small/local farming, there is less diversity in the industry. This leads to a multitude of issues, like a lack of competition in the industry, price gouging, and can lead to structural issues and unfair advantages in some instances. Proposing amendments to these policies by providing evidence of their ineffectiveness could potentially help the industry. Over the course of this year, I am interviewing dairy farmers as a method of qualitative research to help explain policy effectiveness to our legislative bodies in New York. In this presentation, I will discuss the various issues with these policies, as well as my plan to spark change in our beautiful state, and the progress which I have made thus far.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros

Funding Sources

Student Ambassador Award

177 • Inspiring Future Healthcare Leaders Through the Stories of BIPOC Medical Professionals

Jay Glass

Abstract

The underrepresentation of minority professionals in healthcare is a pervasive issue with far-reaching consequences. When students of color do not see themselves reflected in the medical field, it perpetuates feelings of isolation and discouragement, undermining their motivation to pursue STEM and healthcare careers. Research by the Association of American Medical Colleges shows that a more diverse physician workforce improves trust, communication, and health outcomes within underrepresented communities. Yet significant barriers remain, from imposter syndrome to limited institutional support structures that often fail to address minority students' unique challenges and emotional well-being. Over the course of this academic year, I am creating a digital video archive featuring interviews with medical professionals of color across a range of specialties—from primary care to high-intensity fields like surgery. These interviews examine the academic, social, and emotional obstacles they faced as undergraduates, providing relatable roadmaps for current students at SUNY Geneseo and beyond. Hosted on the Geneseo website, this resource will be a permanent repository of practical strategies, personal stories, and guidance for underrepresented students aspiring to enter healthcare.

In this presentation, I will outline the significance of this underrepresentation and its impact on patient care and student success. I will describe the design and goals of my Student Ambassador project, highlighting steps taken—such as physician outreach, stakeholder engagement, and integration with campus resources—to ensure its lasting influence. I will share progress made thus far, including successful interviews recorded to date, and discuss how I plan to sustain and expand this effort.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros

Funding Sources

Student Ambassador Award

57 • An Afrocentric Analysis of Healthcare and Community Building in the Black Populations of the US and Ireland

Griffin Lyons

Abstract

The HIV/AIDS epidemic continues to disproportionately impact people of African descent, including in predominantly white nations. A majority of research on the impact of HIV/AIDS, as well as activist efforts, focuses on the experiences of white individuals and fails to consider how Black individuals are uniquely impacted. Over the course of this year, I will conduct research aimed at reframing the history of the HIV/AIDS crisis and highlighting the marginalized experiences of Black and African individuals affected by the epidemic. In order to do so, I will create a cross-cultural ethnography using sociological research methods and analysis. In doing so, I plan to take an Afrocentric approach to ensure that I center the lived experiences of the Black individuals affected by HIV/AIDS in the US and Ireland, as well as their perspective on how to implement efficient prevention methods in the community. I will examine the past and present efforts undertaken by the Black community to help their own members become more aware of the risks of HIV and increase testing within their community. In this presentation, I will discuss my preliminary research on the problem at hand and the challenges with studying an underrepresented population's experience. I will also explain what my research process looks like, what my future goals are moving forward, and how I plan to implement my research outcomes.

Subject Category

Interdisciplinary and Other Categories: Black Studies

Faculty Sponsor Department

Center for Integrative Learning
Faculty Sponsor
Melanie Medeiros
This presentation will also be presented at:
National Council for Black Studies
Funding Sources
Student Ambassador Award

1C: CHEM & BIOCHEM HONORS PANEL

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 103
Track
Science and Mathematics Categories: Chemistry
Session Chair
Jeffrey Peterson, Chemistry and Biochemistry

178 • Importance of N-terminal Domain of R2Bm in Binding Target DNA During Integration

Abbey Hanes
Abstract
Long Interspersed Elements (LINEs) are retrotransposons and parasites. LINEs insert into host DNA by two rounds of target primed DNA synthesis: Target Primed Reverse Transcription (TPRT) followed by target primed second-strand DNA synthesis. Restriction-like-endonucleases (RLEs) are an example of a group of LINEs. The biochemical aspects of RLE LINE insertion have been most extensively worked out for the R2 elements, especially the R2 element from Bombyx mori (R2Bm). R2Bm elements encode a multifunctional protein with an N-terminal end containing a Zinc-Finger (ZF) and Myb motifs, a reverse transcriptase (RT) and a type II RLE towards the C-terminal end. Previous studies have shown that in the presence of 5' RNA, R2Bm protein binds downstream of the target DNA via the Myb domain. Previous biochemical and recent cryo EM data also revealed that in the presence of 3' PBM RNA, R2Bm protein binds upstream of the target site via ZF, Myb and domain 6a. The objective of this study is to test our hypothesis that a truncated version of R2Bm lacking the N-terminal ZF and Myb would show decreased binding to target DNA compared to the full length R2Bm protein. Purified full length and N-terminal truncated R2Bm (BoMoC) were used in electrophoretic gel mobility shift assays in the presence of labelled target DNA. Data for BoMoC revealed a decreased binding to linear DNA in the presence of 3' and 5' PBM RNA compared to the full length R2 protein highlighting the importance of ZF and Myb domain for binding to target DNA.
Subject Category
Science and Mathematics Categories: Biochemistry
Faculty Sponsor Department
Biology
Faculty Sponsor
Varuni Jamburuthugoda
This presentation will also be presented at:
ASBMB
Funding Sources
NSF BRC BIO

255 • Investigation of Bidentate Ruthenium(II)-Arene Complexes as Anti-Aβ Agents

Ryan Hacker, Michael Webb
Abstract

Alzheimer's disease (AD) is the most common form of dementia, where a primary pathological indicator of AD is extracellular protein deposits, the main constituent of which is the peptide amyloid-beta (Aβ). Metal-based compounds are propitious therapeutic candidates as they form stable interactions with Aβ, thereby limiting its aggregation. The coordination of metals to Aβ is favored through histidine, for which ruthenium-based (Ru) therapeutics have a well-established affinity in serum proteins. We have prepared a small library of Ru complexes, such that structure-activity relationships (SAR) could be established for their respective abilities to modulate the aggregation of the β peptide. The results of these studies will be discussed, where SAR identified the importance of hydrogen-bonding functional groups improving the activity of the Ru complexes.

Subject Category
Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry and Biochemistry
Faculty Sponsor
Michael Webb
This presentation will also be presented at:
American Chemical Society Conference Spring 2025
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
Sorrell Chesin '58 Research Award

269 • Analysis of Thermal Expansion in Crystal Structures Using Variable-Temperature Low-Frequency Vibrational Spectroscopy

Josephine Hastings
Abstract
Utilizing variable-temperature single-crystal X-ray diffraction (SC-XRD), low-frequency Raman spectroscopy, and terahertz time-domain spectroscopy (THz-TDS), an investigation was done into changes of the intermolecular potential of 4,4'-azopyridine and trimesic acid (TMA-azo). We found that the anisotropic thermal expansion was driven by the anharmonic interactions, rather than molecular dynamic disorder. Density functional theory (DFT) simulations were used to further supplement this finding. This study emphasizes the importance of understanding the relationship between thermal expansion properties and the potential energy topography of materials.

Subject Category
Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry and Biochemistry
Faculty Sponsor
Jeffrey Peterson
This presentation will also be presented at:
American Chemical Society Fall 2024
Funding Sources
National Science Foundation via Chemistry REU Site Grant #2050793

1D: BLACK HUMANITIES

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 104
Track
Interdisciplinary and Other Categories: Black Studies
Session Chair
Orquidia Geraldino

253 • Psychology Needs Reparations

Lila Kocieniewski

Abstract

The goal of the field of Psychology is to better understand what is causing problems in people, communities, and societies. While the field was not founded in the U.S., the country has played a major role in shaping it with the American Psychological Association being one of the most important international scientific bodies. Additionally, the best programs in the world are located here. It is impossible to separate psychology from the country. In the U.S., our latent founding tenet is that we are a nation founded on the stealing and enslavement of Black people which has led both to systemic racism and white supremacy. Though this has been true, it has only been recently that most academic fields acknowledge this due in part to the work of numerous historians, psychological texts, and now with essays in the 1619 Project by Nikole Hannah-Jones. This paper takes an unflinching look at how the language and tools used by the field of psychology upholds systemic racism.

Subject Category

Interdisciplinary and Other Categories: Black Studies

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Maria Helena Lima

53 • Stripped of Innocence

Mika Slotnick

Abstract

This paper examines the phenomenon of Adultification and its far-reaching implications on Black children in America. The Adultification Bias refers to the tendency to view non-white children from marginalized communities as more mature or responsible than their peers and, as a consequence, holding them to unfair standards. This bias is caused by the historical and systemic racism in our country and is felt constantly by Black children. It manifests in various aspects of life including education, familial expectations and law enforcement. Black children are disproportionately affected by hyper-sexualization, criminalization, and harsh disciplinary action. The paper explores multiple historical examples, ranging from slavery to integration and describes contemporary instances of adultification involving law enforcement and schools and their consequences. These examples highlight how Black children are denied the grace of youth, as they are being treated and punished as adults with a fully developed brain and reasoning. Throughout the paper, there is an emphasis on the long-term consequences of this bias, including mental health issues, familial struggles and a dislike for the institution of education. Ultimately, the paper argues that Adultification is a direct result of the continually unaddressed legacy of racism and slavery in America. It also acknowledges the necessity of making a conscious effort to unlearn biases which perpetuate the dehumanization of black children.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Maria Helena Lima

50 • America’s Amnesia of Black History, and Why You Should Remember It

Jackson Troxler

Abstract

Memory is a malleable thing that differs between different groups of people, particularly white people and black people in regards to the importance of specific historical events. Before Americans can agree on how to plan for the future, they must first agree on the importance of these events and how they shaped American culture. To accomplish this, white

people must be motivated to learn about these issues and willing to change how they view the world. Education on racism should be focused on struggles Black folk face as well as creating opportunities to heal from the damage racism has caused. While these requirements create difficulties for achieving a better future for the United States, those currently committed to antiracism should remain committed to improving the lives of victims of racial inequality. The magnificent ideals on which the United States were founded are something all people should get to enjoy and is a goal that should be strived for, regardless of the difficulty.

Subject Category
Arts and Humanities Categories: History
Faculty Sponsor Department
English and Creative Writing
Faculty Sponsor
Maria Helena Lima

1E: GENESEO'S MICROCREDENTIAL IN SCIENCE COMMUNICATION PROJECTS

9:30 - 10:45am Wednesday, 23 April 2025, Bailey 105
Track
Science and Mathematics Categories: Biology
Session Chair
Mackenzie Gerringer, Biology

26 • Geneseo's Microcredential in Science Communication Projects

Alexis Ochs, Ledis Coronna, Carly Becker, Nicole Mathewson, Abigail Miller
Abstract
Geneseo’s microcredential in Science Communication offers students the opportunity to engage with scientific topics and extend their knowledge and findings into the community at large. In this lightning talk panel, students will share their ongoing microcredential projects on a variety of topics of their choosing. Projects include a children's book, interactive demonstrations and activities, two informative brochures for kids, and an opinion editorial that communicates science in fields such as cerebral palsy and potential treatments, global warming significance on cardiovascular health, the potential of elephants having empathy with the goal of educating young kids on that value, Lyme disease awareness and prevention, and Listeria and public health. The panel will then feature a short open Q&A regarding the microcredential program and effective Science Communication strategies.
Subject Category
Science and Mathematics Categories: Biology
Special Topic Information
Faculty Sponsor Department
Biology, English and Creative Writing
Faculty Sponsor
Mackenzie Gerringer and Lytton Smith

1F: EDGAR FELLOWS CAPSTONES PANEL 1

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 201
Track
Interdisciplinary and Other Categories: Edgar Fellows
Session Chair
Michael Mills, National Fellowships and Scholarships

143 • Knot Your Average Math Class: Exploring Curves and Curiosities

Jocelyn Bunster

Abstract

Have you ever wondered what math looks like after high school? Probably knot– sorry, probably not! Most people imagine advanced math as endless calculus classes or solving increasingly complicated equations. However, advanced mathematics also includes the study of knots – the same kind we use to tie shoes. In fact, the loop of a ponytail holder is one of the simplest mathematical knots. Would you sleep through math if you were learning about rope magic tricks? Knot theory, a branch of topology, is simply the study of closed curves. Despite it being considered an advanced topic, many of its fundamental concepts are accessible to high school students. Given the flexibility in New York State high school math graduation requirements, math educators have opportunities to introduce engaging nontraditional topics that can help change students' perspectives regarding mathematics. To help educators bring this exciting topic into their classrooms, this capstone features hands-on, inquiry-based instructional materials, which foster curiosity and critical thinking. These activities have been developed using principles of inquiry-based learning with a focus on collaboration and gamification. Why knot theory? Beyond being a fun topic, knot theory has applications in fields like biology, physics, and computer science, showing students the diverse ways mathematics shapes our world. But do knot worry if this all sounds complicated; it is not as knotty as it seems!

Subject Category

School of Education Categories: Adolescence Education: Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Aaron Heap

16 • Rochester Elementary Schools: Progress, Challenges, and the Path to Equity

Aimee Maoriello

Abstract

How does the first city in New York State to desegregate its schools now present one of the most segregated school districts in the nation? This capstone presentation investigates the persistent achievement gaps in Rochester’s elementary schools, examining the long-lasting impacts of redlining, blockbusting, and racial covenants on educational outcomes of young learners today. Since its incorporation in 1834, Rochester’s residential demographics have shifted dramatically, resulting in a diverse population. The post-WWII migration to northern cities contributed to an explosive growth in the Black population, by over 2,000 percent in Rochester. This demographic shift, while vital to the city’s cultural fabric, created challenges for the city school district, especially as the number of minority students increased. Despite Rochester’s efforts to desegregate its schools, through programs like Project UNIQUE and the Urban Suburban Transfer Program, systemic changes have been slow and inconsistent. A high turnover rate in local desegregation policies has led to short-term success, and Rochester’s inner-city schools still face significant disparities in educational access and outcomes. Competing with suburban development and exclusionary district boundaries, the Rochester City School District (RCSD) additionally grapples with a large student population living below the poverty line. With limited resources, the district struggles to support the holistic needs of its students, directly impacting their ability to succeed. This presentation explores modern approaches targeted at ameliorating RCSD’s current challenges, as the district works toward educational equity for all students by better understanding how to bridge the achievement gap.

Subject Category

School of Education Categories: Childhood Education/Special Education

Faculty Sponsor Department

School of Education

Faculty Sponsor

James Oigara

225 • Expectations in Education: A Look into the Effects of Perception and Assumption in the Classroom 💡

Tristan Cascio

Abstract

Educational expectations play a significant role in student success in the classroom. Not only do teachers' expectations affect student behavior, they also affect students' grades. Students' appearance, race, gender, and disability can be directly linked to teacher expectations by either raising or lowering them. Research shows that students will succeed or fail according to expectations regardless of their personal background, yet their background is what creates those teacher expectations. Experiments conducted by Robert Rosenthal and Lenore Jacobson had students placed in classes based off of fake test scores, they told teachers that a certain group had done well on the test and the other did poorly. However, all students had tested similarly, and each grouping consisted of an average group of students. With the groups of students having a similar mix, significant differences were found between groups in end-of-year test results. This experiment was done in hundreds of schools across California, but the results were the same, the class reported to have higher test scores in the beginning of the experiment, performed better on the end of year tests. Studies have shown that teachers have higher expectations towards students without disabilities compared to students with disabilities achieving at the same level. Labels, like disabled, coupled with assumptions can cause lowered expectations which affects student achievement. Knowing how educational expectations have a significant impact on students' success, we need to think more carefully and question special education placement and the least restrictive environment.

Subject Category

School of Education Categories: Childhood Education/Special Education

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

School of Education

Faculty Sponsor

Susan Salmon

1G: EDGAR FELLOWS CAPSTONES PANEL 2

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 202

Track

Interdisciplinary and Other Categories: Edgar Fellows

Session Chair

Scott Giorgis, Geological, Environmental, and Planetary Sciences

129 • Tessellating the Plane

Ben Michlinski

Abstract

Have you ever wondered how many dominoes you can fit on a chessboard? Now replace “dominoes” with “shapes with greater than six sides” and “a chessboard” with “the geometric plane”. Tessellations are patterns that cover surfaces without gaps or overlap. In this talk, we examine what it means for a pattern to be a tessellation, and for this pattern to be able to tessellate the plane. Then, we will review and break down a research paper, closely scrutinizing the claims made and highlighting our difficulties with the paper. We identify an erroneous claim by the author, discuss the implications this has for his hypothesis, and offer a potential solution to the inaccuracies in the paper. Our goal is to prove that it is impossible to tessellate the plane by convex polygons with areas bounded below and diameters bounded above if each polygon has more than six edges.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Christopher Leary

49 • Understanding Complicated Grief in College Students

Rachel Ntor

Abstract

Complicated grief is a profound form of grief that can cause individuals to experience negative emotions and difficulties in daily functioning. Little research has been done to explore how complicated grief impacts college students and its impact on academic performance and responsibilities. Undergraduate students with a recent history of personal loss were recruited to complete an online survey about Understanding Grief. Responses from participants who experienced a loss at least six months prior to the study were analyzed (N = 36). About 1/5 reported the loss of a grandfather. Open-ended questions were provided to document personal experiences of grief, utilization of grief support services, barriers to seeking support, and faculty interactions. Results suggested that 48% of students reported significant signs of complicated grief (overall M = 24.59, SD = 4.96). Most participants (80.6%) did not utilize formal college support services in the aftermath of their loss, with 52.8% being unaware of the services available. Students who avoided services reported barriers to reaching out, including concerns about judgment, lack of understanding, and embarrassment. However, of those students who spoke directly with faculty members about their loss, 81% reported positive professor interactions. Findings suggest that many students are impacted by complicated grief. Students would benefit from increased advocacy to promote local support services as well as continued faculty support.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jennifer Katz

275 • Scientific Anomalies or Anomalous Science? Methods, Meaning, and Parapsychology.

Sophia Turturro

Abstract

With roots in the organized investigation of psychic mediumship, the field of parapsychology emerged in the academic niche of an early experimental psychology. Today, psychology represents a robust institution; the field comprises a significant portion of undergraduate, graduate, and professional domains of research and occupation. Parapsychology pales in comparison. This presentation discusses two components of parapsychology's absence in academy. First, the methods, interpretations, and statistical analyses employed by parapsychologists in conjunction with the arguments and analyses employed by skeptics of parapsychology. Second, the social, historical, and institutional contexts simultaneously enabling and deterring the field's establishment. This presentation seeks to answer the following question: what is legitimate science?

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jim Allen

90 • Optimizing Physics-Informed Neural Networks: Balancing Efficiency and Accuracy

Samantha Conrow

Abstract

Physics Informed Neural Networks (PINNs) are a powerful alternative method to numerically solving partial differential equations. In this talk we will discuss how a PINN arrives at a solution while enforcing physical laws. We will then look at the impacts of parallel training on computational efficiency and solution accuracy.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Caroline Haddad

1H: BUSINESS MANAGEMENT

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 203

Track

School of Business Categories: Business Administration

Session Chair

Avan Jassawalla, School of Business

2 • How Managers Increase/Should Increase Employee Engagement to Increase Retention of Generation Z Employees

Madalyn Johnson, Emma Fon

Abstract

This presentation explores generational differences in the workplace, focusing on the high turnover rates of Generation Z employees and the challenges older generations face in retaining them. Key factors driving Gen Z turnover include a lack of diversity, transparency, and support, as well as poor work-life balance and limited career advancement opportunities. To address these challenges, the research highlights strategies for increasing Gen Z engagement, such as adopting transformational leadership styles, promoting work-life balance, supporting mental health, and integrating technology effectively. Additionally, the presentation emphasizes the importance of leadership changes that align with Gen Z's values, including transparent communication and corporate social responsibility. Practical recommendations, such as implementing mutual mentorship programs and creating stigma-free workplaces, are recommended to increase retention and foster a more inclusive and supportive work environment.

Subject Category

School of Business Categories: Human Resource Management

Faculty Sponsor Department

School of Business

Faculty Sponsor

Avan Jassawalla

5 • The Impact of Older Workers' Knowledge-seeking from Younger Workers on their Work Motivation.

Ava Spottek, Marcus Smith

Abstract

As workplace demographics shift and technology rapidly evolves, intergenerational knowledge-seeking has become a crucial factor influencing employee motivation and career longevity. This study explores the elements that encourage

and discourage the transfer of knowledge from younger workers to older workers – a relatively new and non-traditional process. Our research indicates that technological advancements serve as a primary driver for older employees to seek knowledge from younger colleagues, recognizing its necessity for maintaining career viability. However, generational differences in values, experiences, and workplace expectations can create barriers to knowledge-sharing. Older workers' attitudes and self-perceptions as well as organizational culture and targeted strategies can help overcome these barriers. This presentation will share details from our research and draw implications for managers and organizations looking to develop a more technologically savvy and age-inclusive work environment, as well as increase the motivation and retention of both older and younger employees.

Subject Category

School of Business Categories: Business Administration

Faculty Sponsor Department

School of Business

Faculty Sponsor

Avan Jassawalla

6 • Impact of Pay Transparency on Company's Recruitment

Julia Kimmel, Sophia Frisiras, Ryan Shannon, Evan Maniscalco

Abstract

This presentation explores the influence that pay transparency has on company recruitment processes. It focuses on its effects on hiring strategies, candidate engagement, and organizational trust. With legislation now focusing more on wage equity and shifts in workforce demographics, pay transparency has become an important tool for businesses seeking to attract talent and promote fairness. Pay transparency is particularly relevant in today's job market since it enables organizations to attract a broader pool of qualified candidates, improve retention, and align with diversity, equity, and inclusion (DEI) goals. Clear salary structures enhance employee trust, reduce wage discrimination, and create supportive work environments. But, implementing transparency also presents challenges, like balancing competitive salaries with equity and addressing internal wage dynamics. This presentation will explore the global shift toward pay transparency laws. This includes mandates in regions like New York and California and their implications for recruitment and compensation management. It goes over key HR challenges like early-stage salary conversations, market competitiveness, and the development of equitable pay scales. Organizations can tackle these challenges by establishing structured compensation plans and maintaining pay equity. Training recruiters and hiring managers to communicate salary ranges effectively and maintain transparency in negotiations is equally important. In addition, company-wide initiatives, such as workshops and performance-focused systems, can integrate pay transparency into career development processes, providing clear pathways for growth and supporting organizational objectives. By embracing these strategies, businesses can enhance their reputation as equitable and inclusive employers.

Subject Category

School of Business Categories: Human Resource Management

Faculty Sponsor Department

School of Business

Faculty Sponsor

Avan Jassawalla

1 • The Impact of Perceived Co-Worker Social Loafing on Performance in Virtual teams

Jacob Miller, Ella Youngblut

Abstract

Now, virtual teams are becoming increasingly common in the educational and workplace setting. Social loafing refers to the tendency of individuals to put forth less effort on a task when working in a group compared to when working alone. Specifically, in the workplace setting, this can refer to giving employees too much autonomy within teams, and the ability to "slack off" presents itself. Social loafing, or the belief that certain team members put out less effort, can lower morale and effectiveness in virtual teams. Also, poor or inconsistent communication weakens social unity and trust by

increasing the perception of social loafing. Impact of communication, staying in frequent contact, and exercising effective communication with your team members reduces misunderstandings, and helps promote a productive team culture. So why are people excited to work in remote positions? Because they can work in their pajamas? Or because they do not have to commute in the winter? Or is it because they have to put forth less effort in their work? Social loafing is a growing concern for modern organizations. It has even been described as a “social disease” because of its detrimental effects on teams, social institutions, and societies

Subject Category
School of Business Categories: Business Administration
Faculty Sponsor Department
School of Business
Faculty Sponsor
Avan Jassawalla

1I: SOCIOMEDICAL SCIENCES RESEARCH

9:30 - 10:45am, Wednesday, 23 April 2025, Bailey 204
Track
Interdisciplinary and Other Categories: Sociomedical Sciences
Session Chair
Brenna McCaffrey, Anthropology

188 • Combat Veterans: Motivations and Perceptions of Psychedelic Experiences

Corrina Ophelia
Abstract
Veterans of the post-9/11 wars often face significant health challenges after their military service, including treatment-resistant traumatic brain injuries (TBIs), PTSD, depression, and more. Many veterans pursue psychedelic treatments and find tremendous value in their experiences, usually accessing the substances illicitly or out of the country due to strict regulations within the US. While the promising positive effects of psychedelic treatments for addiction, TBIs, PTSD, depression, and more are emerging in scientific literature, there is a gap in qualitative research that addresses why veterans are seeking out these potentially illegal or hard-to-access psychedelic treatments when they have access to low-cost, comprehensive healthcare through the VA. Here, I attempt to understand veteran’s motivations for seeking out and their perceptions of psychedelics as a healing method.
Subject Category
Social Science Categories: Anthropology
Faculty Sponsor Department
Anthropology
Faculty Sponsor
Brenna McCaffrey
This presentation will also be presented at:
I am submitting an abstract to present a poster at this year's AAA meeting.
Funding Sources
Geneseo Foundation Undergraduate Summer Fellowship, Dr. Wendell and Barbara Rhodes Research Award, and Geneseo Career Design Center: Internship and Living Stipend Acceptance

151 • The Importance of Public Health in Rural Settings

Avery Sadler, Alexa Rogers
Abstract

Rural communities across the United States face persistent challenges in accessing adequate healthcare, particularly among Medicaid recipients and pediatric patients. Medicaid individuals in these areas often lack the health literacy necessary to navigate the complex U.S. healthcare system, a problem exacerbated by geographic isolation and limited access to medical providers. Many of these patients resort to using ambulance services for transportation to emergency rooms when they actually require primary care, causing their conditions to worsen due to inadequate treatment. Local ambulance crews, who may be more familiar with local socioeconomic and geographical challenges, play a crucial role in bridging this gap by offering timely interventions and advocating for patients who might otherwise go without care. Similarly, pediatric healthcare in rural communities is hindered by a shortage of specialized providers and limited transportation options. Unlike urban areas, where access to pediatricians and subspecialists is more abundant, rural families often struggle to find consistent care for their children. Financial burdens, including out-of-pocket expenses not covered by insurance, further complicate healthcare access. As a result, children in rural areas experience higher rates of preventable illnesses, delayed diagnoses, and untreated chronic conditions. Public health officials, EMS & community program directors are working to improve healthcare access by addressing geographic, economic, and social barriers. Programs aimed at expanding provider availability, education resources, improving transportation infrastructure, and offering financial support should be developed to ensure that families have the necessary resources to receive quality healthcare, ultimately leading to better health outcomes in rural communities.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Brenna McCaffrey

98 • TikTok as a Catalyst for Activism: Analyzing the Role of Social Media in Shaping Public Discourse Around the Overturning of Roe v. Wade

Emma Turner

Abstract

Social media may be one of the most wide-reaching and effective tools for promoting legislation and inspiring citizens to take action on contemporary issues. This study explores TikTok's powerful ripple effect throughout modern society, especially in sparking action during major political shifts. Since Roe v. Wade was overturned in 2022, the topic of abortion rights has become increasingly debated within the United States. It also has been a key center for activism and public involvement. With this, social media platforms have developed into essential places for conversation where people exchange differing viewpoints, spread important information, and motivate others to take action. TikTok has become a particularly effective platform for promoting activism because of its unique mix of visual narrative and quick content distribution. Short powerful videos allow creators to inform viewers, challenge popular ideas, and rally support for many issues, including reproductive rights. This study aims to explore exactly how and why TikTok has become such a prevalent catalyst in promoting abortion activism across the United States.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

170 • The Impact of Social Stigmas on LGBTQ+ Primary Care Access.

Olivia Stephenson

Abstract

This research seeks to gain a greater understanding of how the LGBTQ+ community and healthcare providers who treat members of the community view the impacts of social stigmas on LGBTQ+ accessibility and usage of primary care

services. The research looks to understand how intersectional factors and social stigmas impact primary care treatment of LGBTQ+ individuals. Furthermore, this research also seeks to understand how social stigmas affect the mental and physical well-being of those a part of the LGBTQ+ community. Additionally, this research also aims to investigate inclusive training that primary healthcare providers have received in regard to the LGBTQ+ community, as well as how lack of training can pose implicit biases in a primary healthcare setting. Moreover, in addition to training, this research also dives deeper into determining a healthcare professionals' awareness surrounding the social stigmas of the LGBTQ+ community in primary care settings. Finally, this research examines how gaps within primary health care contribute to limited access and how these gaps affect an individuals' willingness to seek out primary care.

Subject Category
Social Science Categories: Sociomedical Sciences
Faculty Sponsor Department
Anthropology
Faculty Sponsor
Brenna McCaffrey

1J: HISTORY

9:30 - 10:45am, Wednesday, 23 April 2025, Milne 301
Track
Arts and Humanities Categories: History
Session Chair
Joe Cope, History

232 • An Alternate Vision of Labor: The Long Deep Grudge Illustrated

Aven Regan
Abstract
In 1886, a bomb was thrown in at a workers' protest in downtown Chicago, that ignited the country to grapple with the conflict between workers and business moguls. Beyond the singular instance of the Haymarket Affair, its legacy was inextricably tied to the arduous history between the McCormick corporation and a radical union, The Farm Equipment Workers Union. A story that defied and pushed just what the labor movement could look like in the United States, detailed in The Long Deep Grudge by Toni Gilpin. In her written words, Gilpin beautifully brought to life the against-the-grain story through centering the human and personal aspects of the history, allowing one to touch and experience the plights and triumphs viscerally. To further the mission presented in Gilpin's book, and bring to life the unlikely story of success, and its alternate vision for the labor movement, I utilized the medium of illustration. This allowed me to create a human frame of reference to exemplify the traits and story detailed in The Long Deep Grudge and just what was and still is possible for labor.
Subject Category
Arts and Humanities Categories: History
Faculty Sponsor Department
History
Faculty Sponsor
Kathleen Mapes

14 • When Rage Becomes Remorse, the Life of Eammon Collins

Jacob Sledziona
Abstract
The Irish Troubles was a time in history filled with death and terror. However, it was also one of hope and change. It defined a generation in Ireland and the U.K. Some of those who lived in the combat zone of Northern Ireland were innocent; others belonged to paramilitary groups and were filled with a killing rage. The most well-known of these

groups was the IRA. The IRA is often held in high esteem in the American consciousness, however, they were a group responsible for over 1,500 deaths. Many of these deaths were of innocent people, neighbors, and even friends. Facts like this make one ask what life was like for the perpetrators before, during, and after the Troubles "ended." One answer can be drawn from the life and death of Eammon Collins, who began life wanting to peacefully improve relations in Ireland but, after pivotal life events, was drawn into the IRA. He would slowly become disillusioned and turn on the organization, become a police informant, and eventually publish a scathing memoir about his time in the IRA, which would lead to his violent death. His story gives us crucial insight into how an early life of rage and death can lead to a life of remorse and charity.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Joseph Cope

This presentation will also be presented at:

Phi Alpha Theta (history honor society) regional conference

286 • The War on Wobblies: The Department of Justice's 1917 Campaign Against the Industrial Workers of the World

Ethan Shaw

Abstract

In the second half of 1917, the Department of Justice carried out a sweeping campaign against the Industrial Workers of the World culminating in a nationwide raid and over one-hundred indictments against the IWW's leadership. This thesis examines what the impetus for this campaign was, and how the DOJ managed to develop its case against the IWW in spite of a lack of tangible evidence. Moreover, this thesis closely follows the DOJ through its internal communications from 1917 in order to expose the true motives behind the agency's interest in the IWW, and to highlight every instance in which the DOJ's methods in carrying out the campaign violated the constitutional rights of those the agency targeted. Another key aspect of this thesis is a close examination of the contemporary media, due to the fact that the campaign against the IWW was bolstered by public opinion as much as it was by actual evidence. In analyzing these published materials, this thesis makes note to consider materials from all across the country, and it too makes note to consider both pro- and anti-IWW sources, in an effort to paint a clearer picture as to what the public perception of the IWW actually was in 1917. To that end, this thesis is not specifically focused on either the IWW or the DOJ, but rather on the particular intersection of the two organizations in the latter half of 1917, when the DOJ decided it was time to put an end to the IWW altogether.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Kathleen Mapes

1K: ENGLISH THROUGH THE CENTURIES: LANGUAGE AND STORY

9:30 - 10:45am, Wednesday, 23 April 2025, Milne 302

Track

Interdisciplinary and Other Categories: Medieval Studies

Session Chair

Jack Wodicka

136 • A Colonized Identity: How Postcolonialism Shape's Wayne Johnston's Newfoundland in T*he Colony of Unrequited Dreams*

Kyle Bulger

Abstract

Colonialism has long dictated the identities of nations, shaping their histories, cultures, and self-perceptions through imposed narratives of power and subjugation. Newfoundland, as a former British colony, grapples with the lingering effects of this legacy, struggling to define itself beyond the influence of its imperial past. Wayne Johnston's The Colony of Unrequited Dreams examines this struggle, illustrating how colonial rule instilled an enduring sense of inferiority in Newfoundland's people and shaped their historical consciousness. Through the character of Joseph Smallwood, Newfoundland's first Premier, the novel critiques the power dynamics of colonialism, exploring how imposed narratives influence identity and national ambition. Johnston employs historical accuracy alongside fictional counter-narratives to challenge colonial historiography and expose the pervasive impact of imperial ideology. Ultimately, the novel portrays Newfoundland's reluctant entry into the Canadian Confederation as a consequence of its colonial condition, prompting readers to consider the lasting influence of colonial rule on former territories and the ongoing struggle to reclaim authentic national identities.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Graham Drake

142 • Word History Report: Lounge

Samantha Lopez

Abstract

This essay explores the etymology and evolution of the word lounge, tracing its origins, linguistic influences, and semantic shifts over time. The Oxford English Dictionary (OED) and the Middle English Dictionary (MED) help to discern both the verbal and nounal forms of this word as it spans over four centuries. Over time, this word has gone through the process of amelioration, namely, when a word that previously bore a negative connotation gradually develops a more positive one. This is seen in terms like cocktail lounge and lounge chair. This presentation will also examine the creation of phrasal verbs, morphemic additions, and collocations that signify the transformation of lounge as it is used in Modern English. By analyzing its historical progression, this study highlights how lexical changes shape word meanings and usage in modern language.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Graham Drake

290 • Stories in Stories

Jason Rosamilia

Abstract

An examination of the frame tale device in "The Dream of the Rood," Chaucer's The Canterbury Tales, and Tales of the Elders of Ireland in an attempt to understand the advantages that such a device has in early English literature.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department
English and Creative Writing
Faculty Sponsor
Graham Drake

1L: RESEARCH IN PSYCHOLOGY

9:30 - 10:45am, Wednesday, 23 April 2025, Milne 303
Track
Social Science Categories: Psychology
Session Chair
Claire Gravelin, Psychology

213 • Complicated Conclusions: Evaluating the Impact of Reporting Behavior and Race on Rape Assessments

Nieve Mahood, Adele Beltrani, Cam LaRosa, Julia Occhi, Eva Elliot, Ava Franks
Abstract
Despite the staggering estimate that 1 in 4 women will be sexually assaulted in their lifetime, these estimates are even more profound when considering that a large number of victims choose not to report their assaults, often due to fear of being blamed (Morgan & Ouderkerk, 2019). Paradoxically, non-reporting has been shown to increase victim blame assessments among White victims (Naseralla & Warner, 2019). Considering the related body of work which demonstrates the impact of racialized stereotypes on blame attributions (Dupuis & Clay, 2013), our work aimed to bridge the gap in the literature by assessing the impact of reporting behavior as a function of victim and assailant race on rape evaluations. Reproducing expected gender effects, men exhibited greater rape myth acceptance, blame, and saw the assault as less severe. A marginal main effect of victim race suggests that Black victims are blamed more than White victims. Our findings additionally revealed a three-way interaction between victim race, perpetrator race, and participant gender on rape myth acceptance to be discussed further. Complicating our conclusions, our data revealed interesting patterns in manipulation check fail rates when the victim and/or perpetrator was Black, potentially indicating that another motive (e.g., social desirability) other than inattention may explain these fail rates. In response to this finding, we are currently collecting data on a pilot study that more clearly states the victim and perpetrator race to compare the success of the manipulation check.
Subject Category
Social Science Categories: Psychology
Faculty Sponsor Department
Psychology
Faculty Sponsor
Claire Gravelin

214 • Ambient Belonging: The Importance of Identity Cues in Academic Contexts.

Gianna Lauciello, Kaitlyn Britt, Ryan Wienczorkowski, Elisabeth Lersch
Abstract
In academic settings, a lack of belonging, especially among first year students and students with minority identities, has been shown to negatively impact academic performance, retention, and overall well-being (Brannon & Lin, 2021; Murphy & Zirkel, 2015). In this talk, we will provide information about the relationship between identity and ambient belonging in academic spaces. Our overview will include considerations across physical and virtual environments, at both implicit and explicit levels of awareness. Particularly among instances whereby student identities conflict with the identities catered to in a given educational environment, we provide evidence for the importance of cultivating communities in which varied identities are welcomed and supported. Creating a more welcoming campus community,

however, requires a delicate balance between representing identities that reflect campus values and accurately portraying student demographics. It is crucial that educational institutions consider the scientific literature on ambient belonging in order to develop inclusive and effective learning environments that consider the needs of every student, and we are excited to present our compilation of evidence supporting the importance of ambient belonging in academic settings.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Claire Gravelin

94 • Neural Efficiency and Its Association with Well-Being and Psychopathology

Isabella Wong, Ariana D'Onofrio, Taryn DeFusco, Maxwell Mesi, Michelle Fitting, Michael Lynch

Abstract

Our research looked at different ways of defining neural efficiency and its association with psychopathology. In one study, we identified two groups based on their neural activity during a resting state period: an activated group and a deactivated group. When they were then asked to make inferences about possible mental states in a Theory of Mind (ToM) task, the group that was activated during resting state became deactivated during the task, and the deactivated group during resting state became activated. Activation during resting state and deactivation during the task was considered inefficient, since neural resources were being used while cognitive demands were low, leaving resources depleted during the ToM task. A subset of those who were activated during the resting state were able to re-deploy neural resources during the ToM task, and this pattern was associated with well-being. Conversely, persistent neural inefficiency was associated with symptoms of anxiety and depression. Another approach to examining neural efficiency was examined in a study where participants were asked to solve anagrams. In this study, neural activity was regressed onto task performance – that is, the number of anagrams participants solved. Residual scores were determined for each participant. Positive residual scores reflected higher-than-expected performance based on the person's task-related neural activity, whereas negative residuals indicated lower-than-expected performance. Positive residual scores seem to reflect a degree of neural "efficiency". The relationship between these residual-based efficiency scores and measures of well-being was assessed.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Michael Lynch

189 • Applying Batson's Model of Human Altruism to Environmental Concern: An Empirical Test 🌿

Anna Arehart, Alexandra Gaboury, Anthony Carvalho, Joseph Healy

Abstract

Batson found that empathy, defined as genuine concern for another, predicted altruistic motivation to help others, and that taking the perspective of another is a precursor of empathy. Researchers inspired by Baston find that empathy for other humans also predicts environmentally responsible behavior. This research also shows that dispositional empathy for nature and connection to nature also predict environmental concern. However, research has not fully tested whether Batson's model explains how empathy predicts environmentally responsible behavior. Therefore, we tested a model that fully integrates Batson's theory of human altruism into current research on environmentally responsible behaviors. Specifically, we tested whether perspective taking for other humans predicted environmental concern via the mediators (in this order) of empathy for humans, dispositional empathy for nature and connection to nature.

Participants were 129 undergraduates (109 women) at a public college in western New York. We tested the predicted model using Hayes' (2024) PROCESS macro for SPSS, s using social desirability as a covariate. The direct effect between Perspective Taking and Environmental Concern was not significant [Effect = .10 (-.11, .31), t = .94, p = .35), but the total indirect effect was significant [Effect = .21 (.06, .36)]. Consistent with predictions, the only significant indirect path included all the proposed mediators (Effect = .03 (.002, .06)]. These results are in accordance with Batson's (2023) theory of human altruism, and integrate his theory more fully into current findings in environmental psychology.

Subject Category
Social Science Categories: Psychology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Psychology
Faculty Sponsor
Jim Allen
This presentation will also be presented at:
Association for Psychological Science

1M: EVALUATING DANCE: GLOBAL AND CONTEMPORARY INFLUENCES

9:30 - 10:45am, Wednesday, 23 April 2025, Milne 319
Track
Interdisciplinary and Other Categories: Dance History
Session Chair
Jonette Lancos, Theatre and Dance

92 • Upbringing and Training in Shaping Artistic Vision: Loïe Fuller and Isadora Duncan

Emily Blenn
Abstract
Through the lives of two Modern Dance pioneers, this presentation explores the influence of upbringing and prior dance training in shaping the movement style of dancers and choreographers. Despite their different backgrounds, Loïe Fuller and Isadora Duncan were united in their rejection of the rigid conventions of ballet, seeking new forms of movement expression. However, their distinct artistic visions set them apart. Fuller, with no formal training, emphasized visual spectacle, using fabric, lighting, and technology to transform dance into theatrical art. Duncan, raised in a rich artistic environment, saw dance as a natural, expressive form, drawing from ancient Greek influences and modern movement theories. The contrast between the visions of Fuller and Duncan reflects the diversity and individuality of modern dance.
Subject Category
Arts and Humanities Categories: Dance
Faculty Sponsor Department
Theatre and Dance
Faculty Sponsor
Jonette Lancos, Theatre and Dance

87 • Contemporary Dance in Senegal: Cultural Roots and Colonial Influences

Cadence Panol
Abstract
Senegal's first colonial encounter occurred when Portuguese settlers arrived during the 15th century. The French 1677 takeover of Senegal resulted in the institutionalization of French language and culture within Senegalese education

systems. Despite oppression and forced conformity, the Senegalese found means to express themselves artistically through structured curriculum. This enabled the maintenance and affirmation of African identity and culture. This preservation of art and culture exploded following their independence in 1960 under President Léopold Sédar Senghor, when organizations such as École de Dakar, First World Festival of Black Arts, and Le Ballet National du Senegal brought international interest in the African identity and Senegal as a hub for West African dance. Dakar, Senegal's capital city, is home to a vibrant dance community, featuring everything from traditional Senegalese dance to salsa, hip hop, ballet, and modern dance. Since independence of the African continent, dance from Senegal and other Western African countries have made their way across the globe and blended with other genres. These genres fuse together to create a unique atmosphere of dance that continues to grow and change with the formation of emerging fusion styles of dance, like modern afro, while maintaining traditional roots. This presentation is the culmination of field research conducted during and after a 4-week summer study abroad program in Senegal, Africa (FREN 312: Modernity in West Africa).

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

93 • From Mind to Movement: The Choreographic Process of "Cognitive Dissonance" 💡

Shannon Ervay

Abstract

The choreographic piece that will be dissected is named "Cognitive Dissonance" and it depicts what it is like to feel the mind and body in disarray. The dancers capture moments in life where our reactions don't match our intentions and our body and mind disconnect. Although panicked and sometimes debilitating moments like this are bound to occur, it is the connections found within ourselves and those we love that allow us to find peace. The dance was created for those who have passionate dreams of reaching the stars but struggle to find the strength to take the steps to get there. But how do we create a dance from nothing with this meaning? This presentation will explain the process of imbuing movement with intention using our bodies in space and time.

Subject Category

Arts and Humanities Categories: Dance

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

195 • Exploring the Role of a Research Assistant and the Importance of Studying Dance in Academic and Personal Realms

Morgan Comstock

Abstract

Personally, I believe education and inquiry are the keys to a successful society. As a research assistant, my passions for teaching, dance, and exploration have become intertwined. The accumulation of my studies through dance history courses, dance kinesiology, and personal research has allowed me to prepare scholarly materials for students in the college. Throughout the semester I have created informative handouts, taught alongside Professor Lancos, contributed to class dialogues, and offered review opportunities to students outside of class. I am an aspiring educator and have more so than ever seen the need for education, particularly in the arts. There are both physiological and psychological benefits to studying dance. Numerous researchers have evaluated this statement, but one in particular has strengthened my presentation's motivation. Amber Salo's master thesis entitled, "The Power of Dance: How Dance

Effects Mental and Emotional Health and Self Confidence in Young Adults", highlights varying benefits of dance I hold to be true. Generally speaking, dance strengthens the physical body, challenges one's memory, promotes effective adherence to instructions, and evokes emotional responses. In studying dance, people can develop a deeper understanding of the evolution of ideas and how vital art is in society. Through my eyes, art is a uniting force that enriches life. Every person can benefit from studying dance, whether they are physically, emotionally, or intellectually stimulated by its poetic power.

Subject Category
Arts and Humanities Categories: Dance
Faculty Sponsor Department
Theatre and Dance
Faculty Sponsor
Jonette Lancos

CONCURRENT SESSION 2

11:00 - 12:15pm, Wednesday, 23 April 2025

2A: BIOLOGY 2: ECOSYSTEMS

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 101
Track
Science and Mathematics Categories: Biology
Session Chair
Wendy Owens Rios, Biology

139 • Effect of the Emerald Ash Borer on Biogeochemical Cycling in Forested Wetlands

Micah Ford
Abstract
The emerald ash borer (EAB) has had devastating effects on forested wetlands in the Great Lakes region, resulting in partial to total loss of tree cover. EAB invasion has the potential to substantially alter soil biogeochemistry and microbial communities. We selected four forested wetland sites in the Rochester, NY area and characterized them as open or closed canopy depending on the severity of EAB damage. We measured CO2 fluxes from live tree stems (ash and silver maple), dead ash tree stems, and soil from May – October and analyzed soil cores for total carbon and total nitrogen content. At two depths, we measured nitrate, ammonium, and phosphate concentrations as well as microbial community diversity. Our data suggest that changes in vegetation following EAB invasion may alter carbon cycling in forested wetlands, increasing CO2 uptake in the forest floor. In both closed canopy sites there was release of CO2 whereas in the open canopy sites there was a net uptake of CO2 due to dense herbaceous vegetation. Soil carbon sequestration increased with soil moisture content; the depressional forested wetland sites (Lehigh) contained twice the carbon as the floodplain forested wetland sites (RIT). The Lehigh sites also exhibited higher nutrient concentrations. The microbial community alpha diversity was higher at the surface (0-1 cm) than at the deeper (10-11cm) depth for both sites. Changes in biogeochemical cycling due to the EAB will likely affect both the ecosystem services provided by these wetlands and have ramifications for greenhouse gas emissions.
Subject Category
Science and Mathematics Categories: Biology
Faculty Sponsor Department
Biology
Faculty Sponsor
Wendy Owens Rios
Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Faculty Incentive Grant, and NSF-REU, award number: 1950690

113 • Feeding Trends in Conesus Lake by Invasive Rudd Fish 🌿

Jacob Calus, Ledis Coronna, Louis D'Ambro

Abstract

Invasive species have major impacts on the dynamics of local ecosystems due to their interactions with native species. Ecosystems depend on a network of connections that can be disrupted by invasives. One such species is the European rudd (*Scardinius erythrophthalmus*), a fish introduced to Conesus Lake from Europe in the 1980s. Our goal is to learn how the rudds' diets affect the ecosystems of Conesus Lake by dissecting their stomachs and analyzing the contents. Upon the 46 out of the 46 stomachs we dissected, we concluded that all the stomachs contributed to the omnivorous diet of the rudd. We observed that the stomachs contained an assortment of invertebrates, algae, or macrophyte. To further identify the stomach contents, we will be sequencing the cytochrome c oxidase (COI) gene from samples of rudd stomach contents. The COl gene is only found in mitochondria, ensuring that the prokaryotes in the fish's gut aren't sequenced. After extracting the DNA from the cells, a polymerase chain reaction (PCR) is run, which amplifies the DNA to be sequenced. We aim to catalog the diet of the rudd with support from genetic data from the sequencing. Knowing which species are being predominantly preyed upon by the rudd will help us determine which species are most affected by rudd. Knowing the effects of rudd predation will help us prioritize certain conservation efforts. Understanding the ecological impact of rudd can help create better management plans for mitigating the impacts of other invasive species in Conesus Lake.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Mackenzie Gerringer

Funding Sources

Sorrell Chesin ’58 Research Award and TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

245 • Feeding Mechanisms and Morphology of Deep-Sea Fishes

Emily Wynne, Chloe Kirgan, Jennifer Aguilera Fonseca, Zebulun Soper

Abstract

The deep sea is characterized by high pressure, cold temperatures, and low food abundance. To compensate for harsh environmental conditions deep-sea fishes have developed specialized feeding adaptations. Studying deep-sea fishes presents significant challenges due to a lack of available data. To compensate for this shortage of information we examined how depth correlates to feeding mechanisms and skull morphology. We analyzed five families of deep-sea fishes and observed suction and biter feeding patterns. Fishes suction feed by generating a unidirectional movement of water through the expansion of the buccal and opercular cavity. Suction feeding is found in families of Ophidiidae (cusk eels), Liparidae (snailfishes), and Ipnopidae (tripod fish). In contrast, biter feeders are classified by the ability to tear and rip flesh. Biter feeders are found in families of Synaphobranchidae (cutthroat eels) and Macrouridae (rattails). Both suction and biter feeders exist in depths ranging up to ~8,000 meters. To examine the functional morphology of deep-sea fishes we used micro-computed tomography (micro-CT) and 3D Slicer to model each fish skull. We found that % head length (standard length) vs. depth (n = 17, rho = 0.2517349, p-value = 0.4067) does not show any significant trend, suggesting total body proportion is not influenced by depth in the present dataset. Our results also showed that the closing mechanical advantage of biters decreases as depth increases (n = 4, p-value = 0.02857), indicating less force is being exerted upon prey at deeper depths. This study sheds new light on evolution and feeding in the deep oceans.

Subject Category
Science and Mathematics Categories: Biology
Faculty Sponsor Department
Biology
Faculty Sponsor
Mackenzie Gerringer

30 • Forest Dynamics Between Co-occurring Native and Invasive Species 🌿

Alexis Ochs
Abstract
Invasive species can co-occur with native species, and may have varying effects on the forest community. The Michigan Big Woods plot located in Pinckney, MI has a high density of invasive species including Berberis thunbergii (Japanese Barberry) and Elaeagnus umbellata (Autumn Olive). We analyzed the interactions between invasive and native species using census data for the years of 2003, 2008, and 2014. We found that there was not a substantial change in the effect of invasive species on the growth of native oak and hickory species, despite the rapid influx of Japanese Barberry. These results suggest that adult trees can still acquire sufficient nutrients during this period of invasion and may have a delayed effect on the forest. By constructing maps for each sampling date, we were able to detect changes in population age structure. Our findings indicate that most oak and hickory trees in the forest are mature, shown by their large diameters at breast height (DBH), with a limited presence of young trees. These patterns are consistent with a forest transition characterized by an influx of mesophytic species, including Acer rubrum (Red Maple) and Prunus serotina (Black Cherry). These species have experienced high instances of regeneration from 2003 to 2014 and may be better suited to capitalize on open canopy space in the forest as a result of the spread of invasive species. These species are shade tolerant and are commonly found in lower elevation areas which may suggest their increase in establishment over time.
Subject Category
Science and Mathematics Categories: Biology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Suann Yang
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

2B: GENESEO CHANGEMAKERS: STUDENT AMBASSADORS

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 102
Track
Interdisciplinary and Other Categories: Ambassadorship
Session Chair
Melanie Medeiros, Anthropology

62 • Addressing Sexual Education Disparities in the Dominican Republic

Solangel Almonte
Abstract
In the Dominican Republic, young women lack access to comprehensive sexual and reproductive health education. Many topics remain taboo, creating space for misinformation and limiting their understanding of their bodies and rights.

Cultural norms prioritize men and motherhood, restricting women's autonomy and reinforcing outdated gender roles. As a result, many young women conform to societal expectations without realizing they have other options.
This lack of education leaves them vulnerable to unintended pregnancies, sexually transmitted infections, and cycles of poverty. Without the knowledge to make informed decisions about their health and future, they are often silenced, limiting their opportunities for higher education and personal growth.
To address this issue, I will be traveling to the Dominican Republic to educate young women about STDs/STIs, bodily autonomy, consent, birth control, and the importance of education. Partnering with the DREAM Project's Única program, I will present to girls in the region, equipping them with the knowledge they need to take control of their futures. Additionally, I will interview students, educators, and parents to gather insights and data that will help improve access to these essential resources.
In this presentation, I will outline the problem my ambassadorship seeks to address, my goals, and the progress I've made so far. Although my project will take place in the summer of 2025, I have made significant progress in developing my presentations to ensure the young women I teach gain the necessary knowledge to make informed, empowered life choices.

Subject Category
Interdisciplinary and Other Categories: Ambassador Program
Faculty Sponsor Department
Center for Integrative Learning
Faculty Sponsor
Melanie Medeiros
Funding Sources
Student Ambassador Award

41 • Green Pup: A Pilot Program for Composting Dog Waste in the Geneseo Dog Park; Colin Doherty '26, Sarah Strobel '27, Dante Herbel '26 🌿

Sarah Strobel, Dante Herbel, Colin Doherty

Abstract
Dog feces are harmful: they emit methane, a potent greenhouse gas contributing significantly to climate change, if not disposed of properly and is about 28 times more potent a greenhouse gas than carbon dioxide. Furthermore, plastic bags for dog waste are problematic and unsustainable because they are not biodegradable and contribute to the large amounts of plastic wastes on the planet. We will investigate and address the unsustainable disposal of dog waste to help increase sustainability in public spaces and our local community.
Over the course of this year, we are going to implement composting of dog waste at Highland Park in the Village of Geneseo. To achieve this, we will be building a three-bin dog waste composter to use in place of the current garbage receptacle and switching out the current plastic bags provided to pick up dog waste with compostable ones. Through this project, we will investigate and address the unsustainable disposal of dog waste to help increase sustainability in public spaces and our local community.
In this presentation, we will briefly discuss the effects of improper disposal of dog waste, describe our ambassador project and what we aim to accomplish, and discuss the progress we've made on our project. While thus far, we have only been able to conceptualize what the dog waste composter will look like, with the weather changing for the better, we will build the composter and begin community outreach.

Subject Category
Interdisciplinary and Other Categories: Ambassador Program
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Center for Integrative Learning
Faculty Sponsor
Melanie Medeiros
Funding Sources

Student Ambassador Award

146 • SUNY Geneseo Native Ecosystem Restoration Project

EmmaGrace Humbert, Lucy DeWispelaere, Leah Mathis, Aleigha Morrison, Lincoln Hempstead

Abstract

After a semester-long directed study, we have assessed that a large portion of the landscaping on the SUNY Geneseo campus is composed of plants that are not native to this region. Decorative landscaping often brings exotic (non-native) and invasive plants into ecosystems where they do not belong. In this presentation we will discuss our findings, and the severe negative effects that these species have on the native plants and animals that rely on a strong, traditional ecosystem. Not only do exotic species outcompete native ones for resources, but they also have detrimental effects on other groups such as pollinators, leaving them with fewer places to feed and reproduce. We will also talk about the various benefits that native landscaping presents, such as water filtration, protection from soil erosion, and the provision of habitat and food for native species. Over the course of this year, we are working to address the significantly high proportion of exotic and invasive species present here on campus by increasing the number of native plants intentionally cultivated. We will give an overview on the steps we have taken so far to tackle this issue; including our research on local native ecosystems and the plants best suited for the conditions here in Western New York. Through collaboration with Geneseo's Grounds and Facilities, we will also be cultivating a native plant garden bed on campus that supports local pollinators, provides beneficial ecosystem services, and teaches visitors about the importance of native plants.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros

This presentation will also be presented at:

GIS/SIG

Funding Sources

Student Ambassador Award

193 • Geneseo Community Tree Walk

Annika Hurley, Joshua Lefkowicz, Naia Perry, Abigail Miller

Abstract

In this presentation we will address the issue of inadequate access to environmental education within the Geneseo community while encouraging a deeper appreciation for the local ecology. Cultivating a connection with nature has many benefits for people's well-being and the health of our environment. In order to cultivate this connection and promote environmental education, we are creating a tree walk on "The Grove" property, owned by Wadsworth Library. This presentation will outline the process and future plans related to this tree for this tree walk. We plan to identify native trees and plants along a newly constructed trail and place adjacent plaques with QR codes that contain engaging ecological, indigenous, and pop culture information. This information will complement signs that the Wadsworth Library creates regarding Seneca land practices, folklore, and history. This tree walk will act as a pilot tree walk model that can be easily expanded to other locations in the Geneseo community, such as Highland Park. Through this we will continue our goal of providing environmental education to the community. We will end by giving an overview of our progress and the lessons learned thus far in our ambassadorship. This will include our tree research progress, our contact with community partners, and our lessons learned related to community driven projects.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Center for Integrative Learning
Faculty Sponsor
Melanie Medeiros
Funding Sources
Student Ambassador Award

2C: GLOBAL LANGUAGE EDUCATION

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 103
Track
Arts and Humanities Categories: Global Languages
Session Chair
Cynthia Klima, Global Languages and Cultures

183 • Cultivating Community Through Language Education

Kaleigh Silverstein, Seohyun Kang, Hiromi Takeda
Abstract
The words we share are more than tools for communication -- they are bridges that connect us in profound ways and open doors to a world of possibilities. Language learning eases the challenges of navigating new cultures, fostering a sense of inclusion, and helping us feel understood. Through language, we don't just trade information; we build connections, engage in cultural exchange, and create environments where everyone has a voice. In this presentation, a language tutor and two international students will discuss their collective experiences with the English language. One presenter will share insights on supporting students through the challenges of language acquisition and cultural adaptation, while the others will reflect on their personal journeys with the English language. Through these shared stories, the aim is to demonstrate the powerful role language education plays in creating new opportunities for growth, belonging, and meaningful relationships in unfamiliar cultural contexts.
Subject Category
Interdisciplinary and Other Categories: Other
Faculty Sponsor Department
Global Languages and Cultures
Faculty Sponsor
Cynthia Klima

261 • Language Education in a Globalized World. Tackling the U.S. Deficiency Through Firsthand Experience in Senegal.

Sam Scamardo
Abstract
In today's globalized world, knowing a second language is essential for fostering cross-cultural communication, understanding other cultures, and enhancing career opportunities. However, foreign language education in the U.S. is significantly behind that of many other countries. Currently, only about 20% of K-12 students are enrolled in foreign language classes, and only a small percentage of states require these courses for high school graduation. A firsthand research project I conducted for a month in Senegal, West Africa, showed that language education is prioritized there more than in the U.S. In Senegal, English and French are mandatory through secondary school, along with a third language of the student's choice for at least three years. As a result, education in Senegal is thriving and better prepares students for our interconnected world. Meanwhile, the ongoing decline or closure of language programs in higher

education in the U.S. raises concerns about how American nationalism may be reinforcing monolingualism. Our paper will first examine the troubling disinterest of American students in learning second languages, and then use the Senegalese model to propose transformative solutions to address the foreign language learning deficit in the U.S. educational system. While early-age second language education is crucial for developing linguistic skills, this paper will also suggest effective technological and generational teaching approaches to challenge the misconceptions about the relevance of second language acquisition in the U.S.

Subject Category
Arts and Humanities Categories: French
Faculty Sponsor Department
Global Languages and Cultures
Faculty Sponsor
Kodjo Adabra
This presentation will also be presented at:
Scholars Transforming Through Research
Funding Sources
COPLAC Grant and Cook Fund for Excellence Endowment

2D: JUSTICE, LAW, AND DEMOCRACY

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 104
Track
Arts and Humanities Categories: Philosophy
Session Chair
Brian Barnett, Philosophy, and Carly Herold, Philosophy

186 • Reimagining the Kingian Framework for Nonviolent Social Change: A Pedagogical Alternative

Alexis Flint
Abstract
In this presentation, I introduce my modified application of Dr. Martin Luther King Jr.'s Kingian Framework for Nonviolent Social Change within educational settings. While King's six principles and six steps of nonviolence were originally designed as a method for social activism, I argue that they provide a crucial framework for transforming pedagogical practices and addressing systemic injustices in education. By adapting these steps to a classroom context, I outline how educators can critically assess structural and interpersonal injustices within their institutions, engage in self-reflection regarding their roles in perpetuating or challenging these issues, and take meaningful, practical steps toward fostering a nonviolent, justice-oriented learning environment. This approach encourages educators to move beyond passive awareness toward active engagement in dismantling educational violence—defined as any systemic or instructional practice that diminishes a student's dignity, well-being, or intellectual autonomy. Through this modified framework, I propose a method for educators to cultivate classrooms rooted in ethical leadership, critical consciousness, and transformative action. By bridging Kingian nonviolence with pedagogy, this presentation highlights how education can serve not only as a tool for knowledge transmission but as a site for active resistance against systemic injustice.

Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Philosophy
Faculty Sponsor
Brian Barnett

160 • *What is Law for Us*: A Defense of Anti-Democracy in The Judicial Branch

Sarah Schoeneman, Julia Burger

Abstract

Why do we need a limit on democracy? Why is the judicial branch imperative in regulating this limit? Using the nation's founding documents, surrounding commentary, and landmark court cases we hope to answer these questions in our discourse. Evaluating the role of "democracy" in our nation's judicial branch, we will discuss the necessity of the anti-democratic nature of the courts to protect the rights and power of the nation's people by acting as a check on democracy and balancing power between governments and their citizens. We will also discuss alternative views on the structure and function of the branch. We hope to provide practical commentary on this interpretation and its significance to the American people.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department

Philosophy

Faculty Sponsor

Carly Herold

147 • Weaponized Technology: How Modern Technology Perpetuates Violence and the Case for Ethical Regulation

Justin Coon

Abstract

Violence has been an inherent part of human history, evolving alongside society itself. As technology advances, so does the capacity to inflict harm, whether through physical, psychological, or systemic means. With the advancements in modern technology, the ability to instill fear and cause destruction has reached unprecedented levels. This research will examine how technological developments contribute to the perpetuation of violence by analyzing specific cases through scholarly articles and books. The central question is: should current and theoretical technologies be regulated to reduce their role in violence? Throughout history, the advancement of powerful technologies have played a dual role in both preventing and exacerbating violence. The development of more sophisticated weapons, mass surveillance programs, and digital manipulation tools has made it easier to control, oppress, and harm individuals and entire populations. As new innovations emerge, the potential for misuse grows, often outpacing ethical discussions and legal regulations. While technology itself is not inherently violent, the ways in which it is designed and implemented can either reinforce or challenge existing power structures. By applying ethical frameworks such as nonviolence, this research will explore whether stricter regulations on technology could prevent its misuse while still allowing for innovation. If left unchecked, modern advancements may continue to fuel cycles of violence under the guise of progress. The challenge remains: how can society implement ethical guidelines to ensure that technology is used as a tool for peace rather than a catalyst for destruction?

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department

Philosophy

Faculty Sponsor

Brian Barnett

174 • Dealing with the Interplay of Violence, Nonviolence, and the Concept of "Othering" within US Military Tactics

Sophia Kitchens

Abstract

The notion of "othering" refers to the process of constructing an identity for an enemy that is fundamentally different and antagonistic, often dehumanizing them in the process. This dehumanization reinforces the "them, not us" narrative, making the use of violence against such groups seem justifiable or necessary. From a nonviolent philosophical perspective, this framing is scrutinized for its ethical implications, challenging the justification of military force based on the perception of the enemy as a monolithic, hostile "other." Drawing on key nonviolent thinkers such as Gandhi and King, this presentation will explore how these ideas highlight the moral costs of "othering" and its role in perpetuating cycles of violence. By analyzing U.S. military strategies through this lens, it critiques how such tactics not only contribute to conflict escalation but also hinder peace building efforts and human connection.

Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Philosophy
Faculty Sponsor
Brian Barnett

2E: BORDERLANDS ACTION PROJECTS

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 105
Track
Social Science Categories: Anthropology
Session Chair
Jennifer Guzmán, Anthropology

242 • Inside Immigration Detention: Conditions and Consequences

Jenna Hopmayer, Marianna Loomis, Nevaeh Umlauf
Abstract
Central to our presentation is discovering and making known the hard-to-hear truths about migrant detention centers, especially considering that one exists just 30 minutes down the road from Geneseo. Issues surrounding health, excessive use of force, (mal)nutrition, reckless medical treatment, and related conditions that demonstrate Buffalo Federal Detention Facility's evident disregard for humanity will be discussed. Many detainees and their representatives alike testify that conditions in Batavia's ICE facility are considerably worse than what one experiences in criminal environments-- a detainee's lawyer even expressed that a maximum-security prison was a better place to be. Our presentation will go into more depth regarding some topics, elaborating more on the following human rights abuses in this detention center: torturous stays in solitary confinement, violations of attorney-client privilege, medical malpractice, and an over-exertion of force unto detainees, just to name a few. As the 2nd Trump administration ramps up immigration laws and deportations, more individuals are likely to be sent to the Buffalo Federal Detention Facility to endure the same harsh realities and punitive measures that so many other migrants experience. With this, it is also essential to note how these severe miscarriages of justice can be perpetuated since these facilities are intended to fly under the radar of the general public to prevent any opposition. Overall, this discussion will illuminate the heavy truths behind Buffalo Federal Detention Facility, along with others across the country. Human rights belong to everyone, and we will highlight Batavia Detention Facility's gross negligence to this fact.
Subject Category
Social Science Categories: Anthropology
Faculty Sponsor Department
Anthropology
Faculty Sponsor
Jennifer Guzmán

259 • Know Your Rights

Audrey Ryan, Chiharu Kawabata

Abstract

Everyone in the United States, regardless of citizenship status, has rights under the Constitution. Programs like the Immigrant Legal Resource Center have made "red cards" to provide examples of how people can exercise those rights in conversations with law enforcement and Border Patrol. In this presentation, we relay information about Know Your Rights that we learned from ScholarshipsAZ in our Anthropology of the Borderlands class. We discuss why it is important and where we hope to spread this information moving forward.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

258 • Information on Migration: Deconstructing False Migrant Narratives Through Open Online Resources

Ava Brown, Kalle Masseo, Sophia Olechowski, Jack Preston, Jordan Davis

Abstract

Our presentation aims to shed light on the multifaceted realities of migrant experiences, the evolving policies that shape them, and the resources available to inform and support all. To make all of these topics easily accessible, we will be creating a fact and experience-based website. The website will feature sections including general information on migration, a timeline of key historical events, information on how to get involved, current policies and events, and tools for educating others through popular education methods. Complementary to the website, there will also be a literary spotlight in Milne Library for the second half of April, featuring powerful, informational books that amplify the voices and experiences of migrants. During our presentation, we will be discussing information and an overview of all of these topics. By combining evidence-based information, literary works, and resources, our presentation will inform about the challenges and triumphs that migrants face. We will also highlight the importance of advocacy and allyship, encouraging others to not only learn about migration but to take action.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

273 • Art as Expression: Navigating Immigration Through Creativity and Support 🌿

Lona Tucci, Valeria Espinosa, Cadence Panol, Lucia Sanchez, Samantha Reyes, Braiden Halbert, Lillian Whiting

Abstract

Through Anthropology 322 - Anthropology of the Borderlands, we explore the powerful role art plays in expressing and shaping the experience of migration. This presentation delves into how art becomes a vehicle for coping with the challenges of immigration, as well as a means of offering financial support for migrant communities. We examine various forms of artistic expression, including sustainable initiatives like the Sierra Club, Chalk Walks, and art exhibitions, that highlight the intersection of migration, identity, and survival. By analyzing these artistic expressions, we aim to understand how art fosters resilience, facilitates cross-cultural understanding, and offers a platform for marginalized voices within the context of migration and the borderlands.

Subject Category

Social Science Categories: Anthropology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

274 • Immigration Legislation Policies in New York

Annie Bolke, Natalia Biehl-Narvaez, Kadiatou Camara, Damaris Mani-Muñoz

Abstract

New York for All and Health for All are two legislative actions in New York that would create and further the safety and health of immigrants in the United States regardless of status. This presentation aims to make these legislative actions known to the student body to support and vote for these policies for the betterment and safety of people in our community. New York for All prohibits state and local officers from enforcing federal immigration laws; this includes collaboration with ICE as well as Border Patrol and Customs. Health for All is aiming to provide accessible and comprehensive health care to all without the requirement or checking of status in the United States.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

287 • Artes sin Fronteras: Art without Borders

Damaris Mani-Muñoz, Brennan Clark, Bridget Schafer

Abstract

We want to bring attention to Wendy with her story of migration from El Salvador to the United States and the hardships she went through seeking asylum and having her asylum revoked. Wendy uses art to help raise money for her asylum case and how she uses it to bring awareness to her own story and the stories of other women who migrated from El Salvador and from South and Central America.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jennifer Guzmán

2F: EDGAR FELLOWS CAPSTONES PANEL 3

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 201

Track

Interdisciplinary and Other Categories: Edgar Fellows

Session Chair

David Levy, Philosophy

133 • AI Influence: Will AI Take Your Job?

Naomi Tsang

Abstract

Artificial Intelligence (AI) has evolved over the years and gained its reputation along with popularity amongst students and professionals. The technology has advanced to replacing repetitive tasks for many individuals and ultimately leading to newer models capable of making decisions. This project focuses on the question of can AI replace your job or is it just an enhancement with priority on the business industry zooming in on finance, marketing, human resources, and accounting. Through extensive research, it is evident that AI qualifies to be a helpful tool as it improves efficiency, reduces labor costs, and introduces challenges related to ethical decision making while raising awareness to transparency. The technology is able to process large data files, giving individuals more time on tasks that require human emotion for decision making. This project shows that AI is still not a direct replacement for human labor and interviews with industry professionals further highlight AI's potential in quickening tasks and emphasizing the continuous need for human judgement and expertise. Allowing employees to spend more time with tasks requiring a higher level of decision making can also lead to a greater sense of job security. Individuals who leverage AI effectively will gain a competitive advantage when facing job displacement. This research contributes to understanding AI's impact on the workforce and the importance of learning the technology in future career security.

Subject Category

School of Business Categories: Accounting

Faculty Sponsor Department

School of Business

Faculty Sponsor

Elizabeth Felski

45 • Innovative Approaches to Male Involvement in Sexual Health Education: A Capstone Research Project

Kaden Wheeler

Abstract

Comprehensive sexual health education helps prevent sexually transmitted infections, reduce unintended pregnancies, and promote healthy relationships. Despite these benefits, male-identified students remain underrepresented in sexual health initiatives. While this affects all male-identified individuals, cisgender and heterosexual men often experience these barriers differently than queer and trans men, who may navigate sexual health through a different lens. This study examines structural, social, and cultural factors contributing to disengagement, including masculinity norms, stigma, hookup culture, misinformation, and limited resource awareness. Using qualitative methods, this study conducted three focus groups (n = 14) with male-identified students. Findings suggest traditional gender norms discourage open discussions of sexual health, leading students to rely on peers, social media, and pornography for information. This reinforces misinformation, particularly misconceptions about contraception, consent, and sexual performance. Participants noted gaps in resource awareness, consent education disproportionately placing responsibility on men, and social pressures discouraging emotional vulnerability and informed decision-making. These findings highlight the need for strategies to increase male engagement in sexual health education. This research identifies opportunities to challenge restrictive masculinity norms, address misinformation, and foster inclusive discussions. By improving access to resources and fostering dialogue, this project supports efforts to strengthen sexual health education.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Sociology

Faculty Sponsor

Amy Braksmajer

This presentation will also be presented at:

2025 SUNY Undergraduate Research Conference

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

251 • Thematic Analysis of Sexual Assault Prevention Programs on College Campuses

Julia Occhi

Abstract
Sexual assault on college campuses is an increasing and pervasive issue, with approximately 50% of college women having experienced some form of sexual aggression, and 25% of those women experiencing an attempted or completed rape (Fisher et al., 2000). To deal with this problem, a variety of sexual assault prevention programs targeting men and women have been developed and evaluated with varied success rates (Baldwin-White & Moses, 2021; Black et al., 2000; Bradley et al., 2009; Jozkowski and Ekbia et al., 2015). Indeed, despite active prevention strategies, in 2023, 74.2% of the Geneseo student body reported an incident pertaining to sexual violence (SUNY Sexual Violence Prevalence Survey, 2023). My research reviews the literature pertaining to prevention programming strategies across college campuses and compares it to that of two SUNY Geneseo prevention programs: the SUNY and CUNY-wide Sexual and Interpersonal Violence Prevention and Response Course (SPARC) and New Member Orientation for Greek Life students. In identifying prevalent themes contained within these programs and their impact on attitudes, knowledge, and reduction of victimization rates, my research highlights the strengths and gaps in existing programs. By evaluating their impact and comparing their content, my research aims to contribute to the development of more effective prevention strategies that foster a safer and more informed campus environment. Furthermore, this research can serve as a foundation for recommending a course at SUNY Geneseo designed to provide students with the necessary background to engage in initiatives that challenge and change the culture of sexual violence on college campuses.

Subject Category
Social Science Categories: Psychology

Faculty Sponsor Department
Psychology

Faculty Sponsor
Claire Gravelin

180 • Bridging Academics: The Case for Mandatory Internships

Ashley DeNysschen

Abstract
Internships are a growing resource that is becoming influential in career preparedness aimed towards students planning to enter the workforce. However, should internships be mandatory for credit in every major? They bridge the gap between academics and application, providing students with professional experience. Students who participate improve their knowledge, skills, stand apart from the competition, and grow both professionally and personally. Research consistently demonstrates that students gain an invaluable experience beyond the internship as long-term, professional success. As the job market evolves and becomes more competitive, academic institutions must help their students be as prepared as possible. Thus, internships should be mandatory in every major.

Subject Category
School of Business Categories: Accounting

Faculty Sponsor Department
School of Business

Faculty Sponsor
Jeffrey Donlon

2G: EDGAR FELLOWS CAPSTONES PANEL 4

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 202

Track

Interdisciplinary and Other Categories: Edgar Fellows

Session Chair

Lisa Meyer, Sociology

91 • Authorship, Readership, and What They Mean to Samuel Johnson's Dictionary

Ashley Ames

Abstract

Samuel Johnson almost single-handedly authored what scholars usually call the first comprehensive dictionary of the English language. It contains about 42,000 entries in a large two-folio volume weighing about twenty pounds, providing readers using it as a book of reference with plenty of material to sift through. However, Johnson's dictionary is much more than a spell-checker, a place to learn the meaning of unfamiliar words, or, these days, a historical manuscript. We typically consult dictionaries only to those ends, but dictionaries, similarly to prose and poetry, can be profitably understood as living documents with rich, limitless literary meaning. Because authors and readers are people with consequential identities (e.g., individual, social, psychological), every interpretation of Johnson's dictionary is unique, regardless of how objective its entries appear. Contemporary literary theorists consider, as should we, the agency of both authors and readers over the meaning of a text, which informs my attempt at what these theorists—exactly because they are necessarily too general in their approach—have not achieved: a micro-study in which I have authored a dictionary and embrace both the individuality of its creation and of its readers' individualized responses.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Gillian Paku

161 • Narratives of Local Identity: Vestiges of Geneseo's Past

Hailey Bernet

Abstract

We are surrounded by vestiges of a past that are no longer considered relevant. Specifically focusing on the territory of Geneseo, New York, there are landmarks all over that house narratives overlooked by those familiar with the present space. Uncovered with the right lens, these narratives are brought into the light, and Geneseo's history is laid out before us. What my project attempts to accomplish is defining these vestiges, physical objects that existed before our time now, that remain under our noses. When history is forgotten, there will often not be a sign on a plot of land, or before a structure, that lays out the significant historical events it is tied to. This project invites those who have found space in Geneseo to not just look at their surroundings, but see past them as they existed before this new present environment. My hope for this project is that it can become a resource for the community, one linked online for people who are interested in navigating. So how can this abstract concept of tapping into a past that isn't familiar, be made accessible to those who seek it out? By matching old images of the current environment, to current images of the present environment, I hope to bring Geneseo's many lives lived into the light for those looking to explore more about its history. I hope this lens, my ideal way of visual learning, can be adopted as a tool by surrounding museums and up-and-coming local historians.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor
Weston Kennison

219 • Cholera, Community, and Commiseration: A Social Historical Look at the 1854 London Cholera Epidemic

Emily Meisenzahl

Abstract
Although people are most impacted by epidemics, a majority of the existing scholarship on Victorian London, public health, and the London cholera epidemics are based in political and economic history rather than lived, bottom-up narratives. The scholarship on the 1854 cholera epidemic, for instance, almost exclusively centers physician John Snow and largely ignores social history. Therefore, my thesis builds upon and contributes to these existing fields by focusing on the lived experience of the 1854 cholera epidemic among everyday urban residents. Through this paper, I intend to highlight how Londoners utilized letters and petitioning, Punch Magazine, and the "To the Editor of The Times" section of popular newspaper The Times of London, to share their voices, demonstrate their knowledge of disease and health, and be active agents of change for their city. Moreover, in having a section dedicated to the people written by the people, I argue that this section of The Times was chief in cultivating a sense of media-based urban community that encouraged social interaction through empowering readers to discuss numerous different topics, including their theories on cholera, their self-conducted civilian investigations, potential remedies, and grievances, all when traditional methods of writing letters to public bodies produced no change.

Subject Category
Arts and Humanities Categories: History

Faculty Sponsor Department
History

Faculty Sponsor
Jovana Babović

This presentation will also be presented at:
Phi Alpha Theta Regional Conference 2025 at Nazareth University

2H: TOWARD A SOCIOLOGY OF UNUSUAL EXPERIENCES: RESPONDING TO SQUIRREL SOUNDS, AN ECLIPSE, AND ENCOUNTERING A DECEASED DOLPHIN

11:00 - 12:15pm, Wednesday, 23 April 2025, Bailey 203

Track
Social Science Categories: Sociology

Session Chair
Steve Derne, Sociology

15 • Do the Sounds of Animals Provide a Comfort?

Kelly Kinsella

Abstract
In the book, Buzz: Urban Beekeeping and the Power of the Bee, sociologists Moore and Kosut claim that the sounds of bees buzzing make a comforting and peaceful noise. While reading this, I began to wonder and asked the question, is it the noise that was comforting or does the experience accompanying the noise create the feeling of comfort? Therefore, I used introspection and created notes based on my own experiences and memories with the sounds of squirrels running around on my friend's roof. I found that it is the experiences that explain the positive responses to an animal noise. While the noise may sound comforting to the observer, it is whether or not one has had a good experience with the animal that determines how one feels towards them.

Subject Category

Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne

125 • Beyond the Eclipse: The Rediscovery of Community in an Isolating World

Bakhita Solenyanu
Abstract
The April 8th solar eclipse was more than just a rare astronomical event, it became a moment of reflection in everyday ordinary life, the importance of community, and human connection. In the weeks leading up to the eclipse, routine and isolation shaped daily experiences, reflecting on the broader social tendencies of individualism. However, the communal experience of the eclipse highlighted the rarity of shared social moments. Observing this event through the lens of Kristi Fondren's Walking on the Wild Side: Long-Distance Hiking on the Appalachian Trail, this analysis explores the impact of community on emotional well-being. The reflection on just one nonordinary experience highlights the need for more intentional spaces that encourage human connection beyond rare or extraordinary experiences.
Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne

8 • The Complexity of Developing Biophilia: Reflecting on Childhood and Adolescence After Encountering a Deceased Dolphin

Madison Brunn
Abstract
While reading For the Wild: Ritual and Commitment in Radical Eco-Activism by Sarah M. Pike, it made me recall back to my childhood encounter with a dead dolphin and my experiences with animals after that. Pike describes eco-activists' road to their activism through the discussion of trees and logging. It made me think– these individuals grieve over the destruction of the trees and grow their feelings of biophilia, "the urge to affiliate with other forms of life," (Pike, 108) during their childhood, does the same thing happen when witnessing the death of an animal during childhood? This question, along with my previous experience with the dead dolphin during my early years, led me to utilize sociological introspection and meditation to find if this childhood encounter resulted in my own personal feelings of biophilia. I found that these feelings of love came from a more complex place– fear. The same event that allows me to now feel undeniable love for animals sprouted from an intense feeling of distress.
Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne

2I: POLITICAL SCIENCE AND INTERNATIONAL RELATIONS HONORS THESES

11:00 - 12:15pm Wednesday, 23 April 2025, Bailey 204

Track

Social Science Categories: Political Science

Session Chair

Karleen West, Political Science and International Relations

248 • The Constitutionality of Free Speech Through the 20th Century into the Age of the Internet

Joshua Stachelski

Abstract

"Our Constitution was not written in the sands to be washed away by each wave of judges blown by each successive political wind," was the famous assessment of civil liberties by Justice Hugo Black in a concurring opinion defending a bookstore owner convicted of selling books containing obscene ideas. While elected legislators often decree laws their constituents find suitable based on the political struggle of the time, the courts are often called upon to be the final arbiter in upholding the threshold for allowable speech and expression that can exist within society to facilitate the enduring Constitutional experiment. As evident by a century of Constitutional development, there exists an ebb and flow of restriction and leniency in Supreme Court rulings pertaining to all matters of American public affairs. Through analysis of 20th Century 1st Amendment rulings, cases in which the court appeared to limit speech an expression that appears to be accompanied by a tense political landscape due to foreign or domestic struggles, while during times of peace, the court appeared to broaden its standard for protected speech under the First Amendment. By analyzing, important Supreme Court cases on free speech and expression, paying particular attention to the external political conflicts taking place at the time of the ruling, I seek to discover how the political and legal landscape affects the rulings of the nation's highest court.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

James Moor

138 • Honors Thesis: Comparative Dairy Policy in America

Delaney Livermore

Abstract

Dairy policy is a policy realm that doesn't get much attention in United States policy-making. Each state has the authority to create their own dairy laws based on regional needs, which are influenced by economic conditions, lack of support, and other factors. As a result, governance structures and industry standards regarding agriculture vary across states. While some states may provide a strong and supportive environment for dairy farmers to thrive, other states are less successful with providing success-driven agricultural policies and standards, and such policy challenges/shortcomings contribute to significant instability within the industry. This comparative study analyzes how state governance structures/substructures can seriously impact the policy-making process in the dairy industry. It explores whether government structures and relationships among policy actors (e.g., public officials and dairy farmers) make a difference in the creation and implementation of dairy policies. Exploring this issue, the research compares Minnesota and New York while utilizing the Advocacy Coalition Framework (ACF), which helps us analyze how coalitions of actors operate within policy subsystems. Specifically, the research investigates how these states respond to federal dairy policy, specific policies each state has created within the dairy sector of policy, and how policy actors interact in the policy-making scene of each state. It also considers how external conditions, like economic or environmental factors

may influence policy making. Ultimately this research aims to inspire changes in policy making to create more effective and collaborative policies which can contribute to a more stable and sustainable dairy industry across states.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeonghwa Yang

130 • An Analysis of the Trump Administration's Decision to Shut Down USAID

Hiroki Yoshida

Abstract

Recently, the Trump Administration shut down the United States Agency for International Development (USAID). Trump claimed that USAID wasted money on projects for several decades without accountability to the taxpayers. The Trump Administration illustrated a few examples of waste and abuse. USAID is an example of foreign aid conducted by international organizations, governmental organizations and developed countries. However, it is questionable whether this type of aid has a positive impact on the development of the impoverished. According to William Easterly, traditional aid approaches lack accountability and feedback, creating inefficiencies. As a result, aid often does not reach the most impoverished. In the case of USAID, the U.S. Government Accountability Office and USAID's Office of Inspector General are in charge of overseeing the accountability and effectiveness of USAID's foreign aid. Given the Trump Administration's evidence of USAID's wasting money without accountability, how credible are organizations monitoring the accountability of USAID's foreign aid? I answer this question by reviewing the literature on the effectiveness, historical contexts and scholarly perspectives on foreign aid. Based on this review, I analyze the justifications and criticisms of the Trump administration's decision about USAID.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Karleen West

279 • The Enlightenment of Passion: The Promises and Limitations of the Socratic Education in Plato's *Alcibiades I*

Alexander Gent

Abstract

In Plato's Theages, Socrates claims that he is knowledgeable in nothing but that which pertains to eros. Given such knowledge, one can understand why Plato's Socrates would take great interest in the character of Alcibiades who, according to Socrates, in aspiring to be "the only man ever worth existing", desires such a thing more than any human being has ever desired anything. With this understanding of the character of Alcibiades, along with his presumed knowledge of eros, Socrates approaches the ambitious youth and expresses his desire to "have the greatest power" over him – assuming he can prove his value to the would-be statesman. The intention of this paper is to make an original contribution to the understanding of Plato's Alcibiades I through a careful reading of the interaction between the two characters informed by the following questions: What does Socrates having the "greatest power" over Alcibiades entail and why does Socrates desire such a thing? To what end is it desirable for Socrates, a philosopher, to prove his value to an aspiring statesman and Alcibiades in particular? Alcibiades I, in addition to highlighting problems and possibilities concomitant with the existence of man, paints a picture of the Socratic education complete with its limitations, requirements, presuppositions, motivations and potential benefits for both student and teacher, and the consequences of its failure. My paper argues that Alcibiades, more than a mere interlocutor, is a pivotal foil to Plato's Socrates and, by extension, his vision of philosophy and the nature of politics.

Subject Category
Social Science Categories: Political Science
Faculty Sponsor Department
Political Science and International Relations
Faculty Sponsor
Aaron Herold

2J: PERSPECTIVES ON AMERICAN INDIAN BOARDING SCHOOLS

11:00 - 12:15pm, Wednesday, 23 April 2025, Milne 301
Track
Arts and Humanities Categories: History
Session Chair
Michael Oberg, History

44 • An Abusive Fellow: How Carlisle Athletes Opposed Coach Pop Warner

Mikayla McFadden
Abstract
This paper examines the investigation into Glenn "Pop" Warner's conduct as head coach of the Carlisle Indian School football team, focusing on allegations of emotional and physical abuse against his players. Despite being a key figure in shaping modern football, Warner's coaching methods included verbal degradation, physical mistreatment, and unethical behavior, as documented in affidavits from former players and an official inquiry led by Chief Inspector E.B. Linnen. The investigation uncovered Warner's frequent use of profanity, instances of physical assault, and unethical financial dealings related to athletic funds and player recruitment. Testimonies from players such as Gus Welch, Elmer Bush, and Edward Bracklin revealed a pattern of mistreatment that contradicted the educational mission of Carlisle. Although the investigation concluded that Warner was unfit to coach, he was permitted to resign rather than face disciplinary action, highlighting the prioritization of athletic success over player welfare. This study sheds light on the darker aspects of Warner's legacy.
Subject Category
Arts and Humanities Categories: History
Faculty Sponsor Department
History
Faculty Sponsor
Michael Oberg

48 • The Reflection of Expulsion: Interpreting the Stories of Expelled Girls From the Carlisle Indian Boarding School

Catie Prospero McGuire
Abstract
At the Carlisle Indian Industrial School, expelled girls were often boiled down to one-word descriptors, such as "unworthy" or "undesirable," in discharge registers. This paper draws on expulsion records and student files to shed light on the largely unheard experiences of these girls. It will seek to analyze the broader implications of Carlisle's efforts to suppress these stories in order to maintain its reputation and the gender discrepancies in language ascribed to expelled boys as opposed to expelled girls. Expulsion was not a uniform process; each case was unique, with motivations ranging from defiance and rebellion to mere misfortune. Some girls longed for expulsion as a means to escape, while others were devastated, later writing back in an attempt to clear their names or express enduring admiration for the school. While some student files contain first-hand accounts from these girls, others are remembered only by a single

word. This research seeks to uncover the experiences of the individuals behind these 'single-word stories,' as well as recognize the girls whose perspectives were not documented and may never be heard.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Michael Oberg

150 • Rosebud and Boarding Schools: How the Lakota Ghost Dance Movement Affected Education

Max Esposito

Abstract

From 1868 to 1891, tensions on Rosebud Agency between Rosebud Sioux and Americans increased due to broken agreements and military conflicts. The Lakota Ghost Dance was central to these conflicts, taking a militaristic approach to forcibly end American encroachment. The pacifist Ghost Dance Movement, from which the Lakota's was derived, believed ritualistic dances fostered connections with deceased family and restored the world to its natural state. The Rosebud movement expanded and American forces became concerned with a rebellion, leading to aggressive reactions, like the killing of Sitting Bull and the Wounded Knee Massacre. While armed soldiers forcefully suppressed the Indians at the Rosebud Agency, others acted to integrate them into the broader white Christian society through educational institutions. Richard Henry Pratt established Carlisle Indian School at the beginning of the Lakota Ghost Dance Movement, which Rosebud Sioux attended until 1889. Plenty Horses, a Rosebud Sioux who attended Carlisle, left the school unemployed and stranded between two communities. He joined the growing Ghost Dance Movement, pained by the failures of white education and the killing of his fellow Sioux. During a diplomatic mission, Plenty Horses' Ghost Dance involvement peaked as he killed American Lieutenant Edward Casey. Using Plenty Horses' experiences, there is evidence that increasing tensions at the Rosebud Agency was the key driver of Rosebud students leaving the Carlisle school. At this dangerous time, parents sought connection with dead loved ones through the Ghost Dance; it is reasonable to assume they wanted to keep their children close to home.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Michael Oberg

266 • Carlisle and the Pueblo: Culture, Distance, and the Importance of Roots

Valerianne Jacobson

Abstract

The Carlisle Indian Industrial School, open from 1879 to 1918, was an institution used to enforce the assimilation of Native Americans into the dominant American culture. Over this thirty-year period, Carlisle affected Native children and families from all around the country, including the Pueblo of the Southwest. However, the Pueblos' unique cultural legacy, particularly in relation to the Acoma and Laguna Pueblo, may have conferred unusual benefits on their students: having sustained property ownership and self-governance through both Spanish and American colonization, Pueblo peoples had a history of resistance and secure traditional lands, which may have conferred on Pueblo students heightened agency over their acculturation. This study attempts to challenge the narrative of passive victimhood which is pervasive in accounts of Native American history, and to allow the Pueblo students of Carlisle to be understood as complex human beings and historical actors in their own right. This is done through careful analysis of primary source documents from the school– including report cards, letters, the school newspaper, and various student files available in

the Carlisle Indian School Digital Resource Center– contextualized within the Pueblo history of both colonization and sustained sovereignty.

Subject Category
Arts and Humanities Categories: History
Faculty Sponsor Department
History
Faculty Sponsor
Michael Oberg

2K: GLOBAL AFRICAN STUDIES RESEARCH I

11:00 - 12:15pm, Wednesday, 23 April 2025, Milne 302
Track
Interdisciplinary and Other Categories: Black Studies
Session Chair
Stacey Amponsah

111 • "Miss Opportunity": Africana Womanism Across Art and Literature

Lauren McCormick
Abstract
African Womanism has certain themes that span across all mediums. This paper will examine these themes across art and literature, looking at specific authors and artists to find common themes across all of their pieces. The paper will start by using Alice Walker's "In Search of Our Mothers Gardens" and Clenora Hudson Weems' Africana Womanism in collaboration with Nah Dove's African Womanism and Afrocentric Theory to build a framework and locate those central themes. It will then examine specific works of fiction by African Authors – Chimamanda Adichie's Americanah, Akwaeke Emezi's Freshwater and Yaa Gyasi's Homegoing – and correlate them with artists Nina Chanel Abney, Akwaeke Emezi again and Njideka Akunyili and analyze how the themes displayed connect to African womanist thought. By doing these things I hope to find the union between these two key pieces of culture and fill a gap in the literature surrounding books and art that has been dominated by white patriarchal society.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English and Creative Writing, Black Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
This presentation will also be presented at:
National Council for Black Studies Conference
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

157 • Senegalese Community Through Media

Genesis Flores
Abstract
This paper builds off another paper detailing the media representation in Dakar, Senegal. This paper will discuss the extent in which the media representation in Dakar represents the daily culture, the sense of community, and how the media in Dakar transfers over to the diaspora/ America (if such a thing even occurs). In order to engage in this discussion, the top popular newspapers and news channels will be used as primary sources, coupled with clips of interviews, social media, and scholarly articles. This paper will then discuss the effectiveness of media in Dakar and

assess if the media has any impact on the sense of community in Dakar. In addition, it will decide if any media methods used, can be further implemented or introduced in local media in the states to also help build the sense of community.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

This presentation will also be presented at:

National Council for Black Studies

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
McNair Scholars Program Support

72 • An Afrocentric Analysis of Healthcare and Community Building in the Black Populations of the US and Ireland

Griffin Lyons

Abstract

The history of HIV/AIDS organizing and activism is largely presented as a white history, which is inherently untrue. In order to reframe history and highlight the marginalized experiences of Black and African individuals affected by HIV, I will perform discourse analysis of how past research has reported on HIV/AIDS in Black communities and specifically examine how publicly-accessible literature (as in pamphlets, flyers, and posters) reports on HIV/AIDS, as well as how the reporting has changed over time. In doing so, I plan to take an Afrocentric approach to ensure that I center the lived experiences of the Black individuals affected by HIV/AIDS in the US and Ireland and their perspective on how to implement efficient prevention methods in the community. The African immigrant and Black communities in the United States and Ireland face a variety of barriers that inhibit them from obtaining adequate HIV/AIDS testing and care. In this study, I examine the past and present efforts that have been made by the Black community to help their own members become more aware of the risks of HIV and increasing testing within their community. I suggest that larger state institutions, in the US and Ireland respectively, should appreciate and adapt the strategies established and utilized by the Black community to increase awareness amongst all people living in these two countries.

Subject Category

Social Science Categories: Sociology

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

This presentation will also be presented at:

National Council for Black Studies

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
Student Ambassador Award

70 • Haiti Beyond its Borders: A Historical, Social and Cultural Analysis of the Haitian Diaspora in North America 💡

Gaetan Jean Louis, Genesis Flores, Griffin Lyons, Lauren McCormick

Abstract

Migration has been central to the Haitian nation since its beginnings, rooted in the transatlantic slave trade. This tragic history led to the creation of a new nation, unified by its unique culture. Following the Haitian Revolution in 1804, which

established Haiti as the first black republic, the country faced continual challenges, including colonial debt that crippled its economy, foreign interventions, political instability, dictatorship, and natural disasters. These struggles prompted many Haitians to migrate to various regions, including France, the former colonial power; the neighboring Dominican Republic; other Caribbean islands; and, primarily, to Canada and the United States. Haitian migration to North America raises significant questions about identity preservation, cultural integration, and the challenges of systemic racism, xenophobia, and acculturation. This study explores how Haitians in the diaspora navigate these challenges while attempting to maintain and transmit their cultural identity. Drawing from African, Caribbean, and diaspora studies, this presentation will provide the historical context of Haitian migration and examine how Haitians in North America connect with their heritage through religion, language, and literature. Additionally, interviews with an American scholar of Haitian descent, a Voodoo priest who recently settled in the U.S., and a Haitian-American doctor who grew up balancing both cultures will offer firsthand insights into how the Haitian diaspora navigates their identities and cultural practices while adapting to life in North America.

Subject Category

Social Science Categories: Sociology

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

This presentation will also be presented at:

National Council for Black Studies (NCBS)

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant) and McNair Scholars Program Support

2L: APPLICATIONS OF MATHEMATICS

11:00 - 12:15pm, Wednesday, 23 April 2025, Milne 303

Track

Science and Mathematics Categories: Applied Mathematics

Session Chair

Caroline Haddad, Mathematics

42 • Unity Decomposition to Simplify Challenging Integrals: A Crossover between the Real and Complex Domains

Gavin George

Abstract

Integrating functions in the real domain tends to be challenging and can become complex as more functions and terms are inserted. Shifting our lens to the complex domain largely simplifies integration, and the ability to determine trends among families of functions. The trend relevant to this talk is integral to solving complex partial fraction decomposition integrals by converting them into a sum of simpler terms. This decomposition agrees with results attained from residue theorem and relies on fundamental complex analysis techniques like De Moivre's theorem, Euler’s identity, and the analytical continuation of the logarithm. The goal of this talk is to expose the audience to the identities that arise from unity decomposition, and other neat mathematical tools that many may want to add to their toolbelt. We will be diving straight into the complex domain, so be ready to deal with all the residues!

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor
Caroline Haddad & Jeff Johannes

114 • Numerical Solutions to PDEs (with Astrophysical Applications)

Zachary Boice

Abstract
We solved the Regge-Wheeler equation using the method of lines and numerical integration. A fourth-order finite difference method was used to increase accuracy. We represented the source by enforcing a jump condition across an internal boundary. We also made use of a hyperboloidal slicing and compactification scheme, based on the work of Thornburg and Wardell (2017). With a fourth-order finite difference method and exact compactified boundary conditions, we hope to achieve results that are among the most accurate time domain calculations.

Subject Category
Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department
Physics and Astronomy

Faculty Sponsor
Thomas Osburn

Funding Sources
National Science Foundation Grant Number 2309020

108 • Discrete Acoustic Tomography

Faith Zatlukal

Abstract
Discrete acoustic tomography is an imaging technique that uses ultrasound detection to generate visual representations of internal structures. This method finds applications in a wide range of fields, including oceanography, medicine, and non-destructive testing, allowing for the visualization of internal processes and materials. Despite focusing on a simplified discrete model, the approach presents novel and challenging mathematical problems. Specifically, the problem is ill-posed, simultaneously overdetermined and underdetermined, presenting complexities that require careful analysis. We demonstrate our mathematical solution through a series of illustrative examples implemented in Mathematica.

Subject Category
Science and Mathematics Categories: Mathematics

Faculty Sponsor Department
Mathematics

Faculty Sponsor
Andrzej Kedzierawski

100 • The Mathematics Behind Improving Stop Loss Pricing and High-Cost Claimant Forecasting 💡

Mandy Cavanagh

Abstract
The objective of my projects was to enhance Stop Loss pricing and improve the forecasting of high-cost claimants during my actuarial internship at Excellus BlueCross BlueShield. This presentation dives into the mathematical methods behind these projects, focusing on high-cost claimant quarterly forecasts, contract-type adjustment factors, improvements to experience rate modeling, and the analysis of Stop Loss historical loss ratios. The first project involved gathering data on claimants exceeding $500,000 to examine trends in high-cost claimants. The second project focused on claimants exceeding $100,000, analyzing data categorized by contract type. In the third project, I compared the impact of various

benefit selections on experience rates. Lastly, I analyzed historical loss ratios by contract type. Key findings include a persistent increase in million-dollar claimants in the first project, a significant difference between Excellus's quote model and actual experience in the second, and the contrast in member experience rates in the third. The fourth project revealed shifts in contract type popularity, showing that while run-out policies improved, run-in policies declined. These projects provided valuable insights into how experience rates, contract type differences, and trends in high-cost claimants influence Stop Loss pricing and forecasting. This work not only contributed to enhancing actuarial models but also demonstrated the critical role of data analysis in actuarial decision-making.

Subject Category

Science and Mathematics Categories: Mathematics

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Aaron Heap

2M: DATA ANALYTICS CAPSTONES

11:00 - 12:15pm Wednesday, 23 April 2025, Milne 319

Track

School of Business Categories: Data Analytics

Session Chair

Li Lu, School of Business

55 • Transportation Accessibility and Its Impact on Livingston County, NY

Emily Peters, Misfer Mohammed Hamid

Abstract

Transportation access plays a crucial role in health outcomes, employment opportunities, and socioeconomic mobility. This study evaluates Livingston County's transportation accessibility in comparison with similar counties in New York, using the EPL_NOVEH metric (percentile of households without vehicles) to identify peer counties with 2% higher or lower vehicle access rates. We assess public and private transportation availability, operating hours, and government involvement while examining how transportation disparities correlate with health and economic outcomes. Findings suggest that counties with lower vehicle access and limited transportation infrastructure face greater socioeconomic challenges, underscoring the need for targeted transportation policies to bridge accessibility gaps.

Subject Category

School of Business Categories: Data Analytics

Special Topic Information

Faculty Sponsor Department

School of Business

Faculty Sponsor

Li Lu

101 • Evaluating Social Vulnerability in Livingston County, NY

Charles Canero, Daniel Noone

Abstract

This study examines Livingston County's social vulnerability using the CDC's Social Vulnerability Index (SVI) to assess disparities in socioeconomic status, household composition & disability, minority status & language, and housing & transportation. By analyzing SVI scores, we identify counties in New York with the highest and lowest vulnerabilities,

generate geospatial visualizations, and conduct correlation analyses to explore relationships between the four themes. Particular attention is given to how transportation and housing contribute to overall vulnerability. Additionally, external sources are used to validate whether these findings align with reported community barriers. The study offers insights for emergency preparedness, policy interventions, and equitable resource allocation.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department

School of Business

Faculty Sponsor

Li Lu

65 • Predicting Home Runs in MLB Using Pitch-Level Analysis

Brendan Style

Abstract

In baseball, home runs are among the hardest things to predict. For the average player, one home run will occur every 3-4 games. The goal of this project is to predict home runs on a daily lineup basis by running a linear regression model on players' performances for each individual pitch type. Once we have done this to create a metric, we will then compare matchups between batter and starting pitcher based on this metric and the pitch mix of the starter.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department

School of Business

Faculty Sponsor

Li Lu

2N: HAVING THE TIME OF OUR L.I.V.E.S.

11:00 - 12:15pm, Wednesday, 23 April 2025, Newton 202

Track

Interdisciplinary and Other Categories: Other

Session Chair

Jennifer Waddington, School of Education

107 • Having the Time of Our LIVES

Emily Alexander, Tatum Faucher, Erin Fitzsimmons, Ty Acquard, Mya-Lyn Albanese, Katrina Brisbane, Michael Campbell, Trevor Converse, Michael Dana, Edrick Delgado-Rivera, Daniel Deming, Donna Dickes, Dani Drazkowski, Micah Durkee, Holly Gates, Aiden Gauthier, Sam Hardy, Morgan Hulbert, Emily Link, Lilly Marks, Zachary Mogavero, Travis Nowinski, Austin Pape, Dakota Pilc, Sarah Pope, Emily Sanford, Cody Schlageter, Brandon Schneider, Rachel Skidmore, Charles Spencer, Anders Swanson, John Yost, Emily Yun

Abstract

Students in the SUNY Geneseo LIVES Program will be "Having the Time of Our LIVES," as they offer insights into their daily experiences, acquired skills, and the opportunities the program has provided them. Students will highlight how the program has fostered their growth as independent individuals. They will share research exploring the perception of the LIVES Program within the broader college community, contrasting it with the program's true objectives and outcomes. The presentation will compare the lives of the Geneseo community to those of students in the LIVES Program, emphasizing the similarities, regardless of "ability." The goal is to raise awareness of the LIVES Program and demonstrate the personal and academic growth it facilitates.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

School of Education

Faculty Sponsor

Jennifer Waddington

This presentation will also be presented at:

The Arc of Genesee, Livingston, Orleans, and Wyoming County

CONCURRENT SESSION 3

4:30 - 5:45pm, Wednesday, 23 April 2025

3A: BIOLOGY 3: INTERACTIVITIES

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 101

Track

Science and Mathematics Categories: Biology

Session Chair

Suann Yang, Biology

156 • Use of Musculoskeletal Models to Estimate Optimal Postures and Potential Functions of Tyrannosaur Forelimbs

Kurt Schirrmacher

Abstract

The potential function of the unique reduced forelimbs of Tyrannosaurus rex has generated much discussion, but few concrete answers have been established. By using three-dimensional (3D) musculoskeletal models, we can estimate muscle moment arms to better understand the most optimal forelimb postures in this taxon in terms of muscle leverage. In this study, we obtained CT scans of the pectoral girdle and forelimb of T. rex and created a 3D musculoskeletal model following standard procedures. Individual elements were rearticulated, joint axes were defined, and muscle lines of action were reconstructed. Muscle moment arms were automatically calculated by the modeling software for each muscle and joint (shoulder, elbow, wrist, and first digit) across a range of potential positions, then summed, normalized, and graphed, allowing identification of primary function around a joint, how this function changes with position, and the position with the greatest moment arm. We then repeated the entire process for Guanlong wucaii, a Late Jurassic tyrannosauroid. Unlike T. rex, it had long, gracile forelimbs, a stark contrast that points to functional differences and evolutionary change. Different shoulder functions and maximal leverage at different positions suggests that tyrannosauroid forelimbs did undergo changes in function as the clade evolved. The patterns are consistent with the inference that T. rex may have used its forelimb to grasp and stabilize prey, while G. wucaii used its forelimb to slash at prey.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Sara Burch

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

197 • The Effect of Host Traits and Location on Parasitism by Insect Larvae

Thomas Back, Nolan Miller, Suann Yang

Abstract

In Western New York's agricultural regions, non-native, cultivated and native plants occur near each other. The distribution of these plants potentially affects the instance of parasitism by insects, especially generalist insects. This study investigates the interactions between parasitizing insects and their host plants in forests that are adjacent to farms of cultivated fruits. We hypothesize that the forests surrounding farms act as reservoirs for parasites during the times when fruits are absent from the farm. Additionally, fruit density may impact rates of parasitism with higher density correlated with higher rates of parasitism. Since fall 2023, we have characterized host-parasite interactions by sampling fruiting plants in forests adjacent to farm fields, at seven separate farms. Preliminary results reveal that a majority of the larval insect parasites are found in a single species, Glossy Buckthorn (Frangula alnus Mill). We will discuss factors impacting parasitism, including host species, host density, and position within the forest. These results have the potential to help to develop management strategies to shift control methods away from pesticides and toward management of fruiting plants within adjacent forests.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Suann Yang

This presentation will also be presented at:

Northeast Natural History

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship, and Sorrell Chesin ’58 Research Award

241 • Out with the New, In with the Old: A Statistical Exploration of Glove Design and Fighter Health in MMA

Jacob Fields

Abstract

Combat sports are fraught with ethical grey areas and Mixed Martial Arts (MMA) is no exception. While violence is inherent to the sport, the implementation of different equipment can prevent unnecessary health risks for fighters. For example, padded gloves are often used to prevent bouts from ending prematurely due to lacerations or hand injuries. In 1997 the Ultimate Fighting Championship (UFC) introduced 4 oz gloves which would become required for sanctioned MMA bouts. The original UFC gloves remained largely unchanged until June 1, 2024, when a redesigned version featuring reduced weight and altered foam composition was introduced. However, by November 16, 2024, the UFC reverted to the original design without explanation. One hypothesis is that they caused a significant decrease in knockouts. I investigated this by developing an HTML scraper to extract data from all bouts on UFCstats.com for statistical analysis. I then compared the knockout rate and the rate of knockdowns per strike in UFC bouts before and after the implementation of the new gloves. With the new gloves, I found a significant decrease in knockouts from punches while knockouts from kicks, knees, and elbows were unaffected. Knockdowns per strike was also significantly reduced. By all metrics, the new gloves were associated with a reduction in striking efficacy. These results raise a number of questions surrounding fighter health and equipment in MMA. Can equipment design effectively improve safety in MMA without compromising competition integrity? Or should priority be given to other aspects such as sanctioning requirements or referee protocols?

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department
Biology
Faculty Sponsor
Suann Yang

10 • Sports-related Concussions in the Geneseo Athletic Community 💡

Nina Chicatelli
Abstract
Sports-related concussions (SRCs) have gained significant attention in recent years due to elevation in concerns about the potential dangers of long-term consequences on athletes, particularly in high-contact sports. Despite growing awareness, there are still concerns regarding optimal concussion management, prevention, and the long-term effects of repeated head injuries. This research aims to study current concussion protocols, with a focus on the variability of approaches among organizations such as the National Collegiate Athletic Association (NCAA) and Geneseo Athletics. It explores concussion management strategies, including reporting behaviors, use of protective equipment, coaching techniques and the role of baseline testing. This study also aims to investigate the long-term effects of repeated concussions on brain health, cognitive function, and development in young athletes. In order to gain this knowledge we will use literary research to evaluate data on young athletes that have been diagnosed with concussions and their academic performance, athletic recovery time and performance, and overall quality of life. The aims of this research will be an in-depth review and study of concussion protocol and effects on athletes.
Subject Category
Social Science Categories: Sociomedical Sciences
Special Topic Information
Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Biology
Faculty Sponsor
Samuel Newberry

3B: INTERDISCIPLINARY IDEAS

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 102
Track
Interdisciplinary and Other Categories: Other
Session Chair
Monica Schneider, Psychology

176 • Analyzing the Effects of Population Aging on the U.S. Economy

Matthew Hoch
Abstract
Throughout most of recent history, the elderly population has increased gradually across many countries, particularly the United States. The old age dependency ratio (OADR), defined as the ratio of the elderly population (aged 65 and older) to the young, working population (aged 15 to 64), has also increased along with the elderly population ratio. Since 2010, the OADR has maintained an average 3.03% yearly increase, excluding 2020. This constant increase in the OADR is significant because as the OADR increases, governments face higher levels of pressure to fund healthcare programs and pensions. This, in turn, causes government spending to increase, likely leading to an increase in taxes to fund or offset the increase in spending. According to the St. Louis Fed (or FRED), government spending has maintained a yearly growth rate over 3%, and about a 5% rate since 2018. It is dangerous for the OADR to rise too quickly, especially when the youth population isn't increasing at a steady rate, since funds for other government programs may be shifted to elderly

programs to support the increasing elderly proportion. By comparing the trends in the OADR and certain economic variables such as the elderly employment rate, and government spending, particularly on healthcare, we seek to make relevant policy suggestions to ease some of these predicted issues. We will employ various advanced econometric techniques to analyze these effects.

Subject Category

School of Business Categories: Economics

Faculty Sponsor Department

Economics

Faculty Sponsor

Mansokku Lee

277 • The Impact of Underrepresented Composers on Music and Culture

Edwin Alvarado, Leah McGray

Abstract

I aim to showcase the work and overlooked contributions of underrepresented composers as well as, increase awareness of their cultural impact within the realm of music. Additionally, by selecting the repertoire from underrepresented composers, I seek to challenge existing conceptions and promote inclusivity and diversity within the Geneseo community.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music and Musical Theatre

Faculty Sponsor

Leah McGray

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

252 • The Role of Identity and Trauma in PTSD among SWANA Populations

Lila Kocieniewski

Abstract

Post Traumatic Stress Disorder (PTSD) and Trauma are common mental health problems internationally, specifically within the region of South Western Asia and North Africa (SWANA) and among diaspora populations. Considering the wars, genocides, climate change, and rise of SWANA racism and xenophobia in these regions it makes sense that there is a high rate of PTSD and Trauma. Despite these contributing sociopolitical factors, the links between mental health and external political forces remains an underdeveloped research field. While scientific literature is starting to investigate the intersection of being SWANA, having PTSD, and Trauma, this field is still in its infancy. Much of this research, however, has been headed by Non-SWANA individuals. This paper is a literature review of the Role of Identity and Trauma in PTSD among SWANA Populations. Specifically, this paper will focus on how belonging to the SWANA identity increases the likelihood of Trauma and PTSD, the prevalence of PTSD in the community, and the role of coping and help-seeking behaviors among affected populations. Understanding how PTSD and Trauma impact SWANA people and communities on a micro scale will help practitioners, individuals, and community leaders treat these issues. On a macro scale, this research can help inform governments, psychology bodies, and medical institutions in order to better show up for SWANA populations by preventing increasing rates of PTSD and Trauma.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Monica Schneider

Funding Sources
McNair Scholars Program Support

3C: CENTERING BLACK EXPERIENCES IN THE K-12 CLASSROOM

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 103

Track
School of Education Categories: Early Childhood/Childhood Education

Session Chair
Alice Rutkowski, English and Creative Writing

24 • How did Black Women Show Resilience and Make Important Contributions During the Civil War?

Kayla Stewart

Abstract
This lesson plan, designed for 4th graders, explores the role of Black women during the Civil War by highlighting their resilience and creativity. One powerful example is Harriet Powers, a former slave who used quilting to tell stories and preserve history. Her quilts became both a form of survival and a way to share cultural and personal narratives. Sewing Stories: Harriet Powers' Journey from Slave to Artist offers a compelling look into her life and artistic expression, making it an ideal resource for students to learn about the contributions of Black women during this era. By focusing on Powers' story, students will see how creativity and resilience intertwined in the lives of Black women during the Civil War. Her quilts not only served as an act of resistance but also as a way to communicate important stories from her life and history. These texts were chosen because they highlight an often-overlooked aspect of history—how Black women used art to survive and resist. The next step for this project is testing the lesson plan in a classroom setting to see how well it helps students connect with this period in history. Through this approach, students will better understand how art, creativity, and resilience shaped the experiences of Black women during the Civil War, and why their contributions should be remembered and celebrated today.

Subject Category
School of Education Categories: Early Childhood/Childhood Education

Faculty Sponsor Department
English and Creative Writing

Faculty Sponsor
Alice Rutkowski

25 • A Meaningful Introduction to Toni Morrison's *Beloved*

Brett Bower

Abstract
When teaching Toni Morrison's Beloved in high school classrooms a suitable anticipatory lesson is needed to prepare students for the history on which the text is built and some of the difficult content the text features. An effective method for this is to spend at least one lesson covering several sources written by women who lived through both enslavement and service as a nurse during the Civil War. Harriet Jacobs' Incidents in the Life of Slave Girl covers an enslaved woman's experience growing up and being sold; struggling to maintain any control over her life as her owners try to control and break her. Susie King Taylor's Reminiscences of My Life in Camp covers the author's responsibility as a nurse, teacher, and her struggle not to be taken advantage of as an individual without rights. Utilizing both of these sources along with a general history of the achievements of black Americans during the era serves as a proper background for students beginning the novel. These texts were the best suited for the task out of all the texts I read from the era and I believe will best serve the enrichment of students learning Morrison's text. Future steps of this

project are to try it in a classroom setting and see the aid it can bring to enriching future students learning about humanity, enslavement, struggle and willpower featured in Beloved.

Subject Category

School of Education Categories: Adolescence Education: English

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Alice Rutkowski

37 • Resilience, Discernment and Hope: Teaching about Slavery in Early Education

Chloe Dion

Abstract

A fourth-grade lesson on the Civil War should center Black stories coming out of the age of slavery. Such a lesson would consider everyday deprivation and long-term grief felt throughout families. Bringing in texts that honestly represent these complex experiences into the classroom means changing the language we use about slavery, reading real accounts from enslaved people, and reflecting on how the legacy of slavery can be seen in the local area. It is important for students to know who influenced and resisted not just the morals of slavery, but the institution directly. They can conceptualize how enslaved people secured their freedom through resilience, discernment, and hope. A problem that tends to show up in lesson plans for this level is that they do not offer many narratives or tell one where White abolitionists lead liberation. This lesson informs and pushes students to expand their understanding of Civil War outcomes using texts that range from poems to speeches and editorials. The lesson poses questions such as who should be the focused subject and how can we extend these stories to our own community? Students can consider what goes into writing history, which covers literacy and development of social structures learning standards between the English and Social Studies disciplines. As non-educators and educators, we must bring our attention to how power affects representation; in bridging access and research for texts by Black creators, we can all continue to learn beyond what it is that we were taught too!

Subject Category

School of Education Categories: Early Childhood/Childhood Education

Faculty Sponsor Department

English and Creative Writing

Faculty Sponsor

Alice Rutkowski

3D: HISTORY OF MATHEMATICS

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 104

Track

Science and Mathematics Categories: Mathematics

Session Chair

Jeff Johannes, Mathematics

73 • The Introduction of Group Theory in the Nineteenth Century.

Jordan Gould

Abstract

I will discuss the cultural and mathematical progression of group theory throughout the 1800s. This will be done through viewing the works and achievements of several mathematicians including Evariste Galois, Augustin- Louis Cauchy, and Joseph-Louis Lagrange. The contributions of these mathematicians led to the discovery of the concept of a group, new mathematical notations and definitions, theorems regarding the geometric structure of groups, and more. Through

viewing the culture and writings of these mathematicians, I hope to provide you with a strong understanding of the basic concepts of group theory as well as a glimpse into the 19th century.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Jeff Johannes

74 • The Gaussian Distribution: How Probability Found Its Shape

Katelyn Berdar

Abstract

The Gaussian Distribution, also known as the Normal Distribution, is one of the most fundamental topics of probability and statistics. Although it received its name from German mathematician Carl Friedrich Gauss (1777-1855), the origins of the Gaussian distribution can be traced back as early as 1773 when French mathematician Abraham de Moivre discovered that as the number of events increases, the binomial distribution approximated a smooth, bell-shaped curve. Until Gauss's official proclamation of his discoveries in 1809, notable mathematicians such as de Moivre, Thomas Bayes, and Pierre Simon Laplace worked to develop the foundations of what would later become the Normal distribution. Through investigations of the historical context and mathematical development that led to its realization, the prominence and perennial impact of the Gaussian distribution are revealed.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Jeff Johannes

102 • From Sweet Peas to Statistics

Luna Oley

Abstract

This project will explore the history and development of linear regression. We will look at contributions of key figures like Sir Francis Galton, Karl Pearson, and Carl Gauss. Starting from early statistical methods with Francis Galton and his discovery of the regression to the mean in his study of the sweet peas, the research will follow with the sequence of regression techniques. We will look at how linear regression influenced other statistical analysis that have been crucial to statistics.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Jeff Johannes

3E: WOMEN'S AND GENDER STUDIES CAPSTONE PRESENTATIONS

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 105

Track

Interdisciplinary and Other Categories: Women's and Gender Studies

Session Chair

Amanda Roth, Philosophy, Women's and Gender Studies

243 • Male Willingness to Report Sexual Assault and Pathways to Improvement

Kennedy Taylor

Abstract

Sexual assault is a widespread issue that impacts people of all genders, however there is a massive amount of stigma surrounding the idea that males are the perpetrator of sexual violence, which is statistically true, however males are also victims in that pool. Previous studies have found that only a minor percentage of male victims report their assault, around 15% compared to their female counterparts who report at 30% (Weiss, 2010). The societal stigma goes as far as previous laws only holding the definition of rape in reference to women, and having an alternative assault label and punishment for male sexual assault. This legal distinction embodies how the stigma surrounding male sexual victimization is embedded and perpetrated by our societal structures. As a result of this male survivors often fear they will not be believed, or will be perceived as less masculine and face assumptions about their sexuality if they disclose their assault (Donne et al., 2018). Addressing these barriers to male sexual violence requires a shift in societal attitudes, gender expectations and most critically, additional steps taken to support and encourage male survivors to report their experiences. with special focus on college campuses and the comfortability of men utilizing available resources.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women's and Gender Studies

Faculty Sponsor

Amanda Roth

123 • The Marginalization of Abortion Care: Situating Abortion Funds Within Reproductive Justice

Alannah Egan

Abstract

The rise of Reproductive Justice (RJ) as a way of conceptualizing reproductive healthcare stigmatization has tasked reproductive healthcare-supportive organizations with reevaluating their missions within the RJ framework. Encapsulating a wider range of reproductive freedoms aside from the freedom of choice - deemed inadequate by RJ activists for its ignorance of those systematically denied "choice" - RJ is defined as "the human right to maintain personal bodily autonomy, have children, not have children, and parent children in safe and sustainable communities." Abortion funds - organizations that financially support those struggling to finance abortions - have struggled to find their place within RJ because of their specialized nature. Understandings of abortion funds within RJ vary greatly, with board members and volunteers for some funds claiming that their work is its own movement outside of RJ and others claiming to be directly in line with the RJ movement. In this paper, I will argue for the consideration of abortion funds as RJ organizations due to their focus on the most severely marginalized form of reproductive healthcare and those most impacted by this stigmatization. Drawing on the work of Guillermina Jasso and others, I will situate the work of abortion funds within the realm of Distributive Justice and the benefits of curating equity by focusing justice efforts on groups that have historically been the most marginalized. This focus empowers those who utilize the resources of abortion funds to be able to parent, not parent, or parent with dignity at their own will and ability, honoring the RJ pillars.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women's and Gender Studies, Anthropology

Faculty Sponsor

Brenna McCaffrey

135 • The Resources to Help Transgender Domestic Violence Victims

Brielle Trimigliozzi

Abstract

Just about half of the transgender population experiences domestic violence in their lifetime. Unfortunately, they have a very difficult time finding safe spaces and supportive resources, which I will go in depth about. This research will analyze the specific challenges that transgender victims endure and will also explore some of the resources that are available to them. I will dive deep into the things that need to be done to improve the care and facilities of transgender people, legal protection and support services give transgender individuals the opportunity to feel safe and to be protected. The main goal of this paper is to highlight ways to make these resources and supports more accessible and feasible for the people who need the support and guidance.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women's and Gender Studies

Faculty Sponsor

Amanda Roth

164 • Ableism in Sports: How Disabled Women are Disproportionately Impacted

Hannah Colosimo

Abstract

The intersectionality of gender and disability identity create distinct challenges for women with disabilities and their participation in sports. Organized athletic opportunities for adults with both physical and learning disabilities that hold an emphasis on raising confidence, promoting independence and, most importantly, allowing for social interaction are crucial to their success and well- being. However, women with disabilities face additional difficulties when participating in organized sports and have to navigate various social and physical obstacles such as the lack of resources, access and support which often leads to less engagement in sports than their male counterparts. Due to both gender discrimination and ableism, these women are neglected from positive social interactions in a comfortable setting that are needed to foster a beneficial environment for people with disabilities. In this presentation, I will discuss the work I have been doing in my role as an assistant instructor at Kenpo Eagles Adaptive Karate Studio, which works exclusively with members of our community who are disabled and emphasizes the importance of creating this environment in which adults with disabilities may thrive. Many women who faced social isolation and unique barriers when engaging in sports have found a safe and inclusive environment at Kenpo that is adaptive to their individual capacities.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women's and Gender Studies

Faculty Sponsor

Amanda Roth

3F: EDGAR FELLOWS CAPSTONES PANEL 5

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 201

Track

Interdisciplinary and Other Categories: Edgar Fellows

Session Chair

Kathleen Mapes, History

19 • The Gospel of Resistance: How the Exodus Narrative Undermined Pro-Slavery Christianity

Lauren Reilly

Abstract

In the book of Exodus, God delivered the Israelites out of bondage in Egypt and into the Promised Land. For enslaved people in the United States in the 19th century, the beginning of this story felt familiar, and the end felt hopeful. By resonating with the Israelites, African Americans in the United States formed a distinct identity and theology that leaned on the hope of God's justice and deliverance. Scholarship on Christianity among enslaved people has largely presented Exodus as a tool in forming identity and a sense of hope that God will deliver them in the same way He delivered the Israelites. In this paper, I examine the ways that slavery restricted enslaved peoples' ability to practice Christianity and present Exodus as a gospel of resistance against slavery and pro-slavery Christianity in two main ways. First, Exodus provided inspiration for African Americans to develop their own theology informed by their personal experiences and interpretations. Second, the Exodus narrative was employed as a strategy to challenge slavery by both abolitionists and enslaved people. Acknowledging Exodus as a gospel of resistance recognizes the agency of African Americans in forming their own theology in order to pursue Christianity freely.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Justin Behrend

This presentation will also be presented at:

Phi Alpha Theta Regional Conference

33 • "What a Mensch Does is Fight for Justice": Judaism, Activism, and Agency in the Civil Rights Movement

Ethan Harris

Abstract

While it is commonly known that the Jewish community was a major contributor to the United States Civil Rights Movement, much of the historiography focuses exclusively on the eventual fall of the Black/Jewish alliance. These gaps fail to encompass the unique nature of the Jewish activist experience, let alone their contributions in progressing African American equality. This project aims to provide insight into the nuances of Jewish involvement in the movement, as well as highlight how many Jews employed their religious traditions to inspire years of successful activism. Additionally, there is a call to action for public education to include Jewish activism in modern Civil Rights Movement curricula. By emphasizing the agency that young Jewish volunteers took in risking their lives to stand up against oppression, it reveals to students how seemingly ordinary individuals can achieve extraordinary feats.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor
Emilye Crosby
This presentation will also be presented at:
Phi Alpha Theta Western New York Regional Conference

29 • "Save Sodomy from Ulster": Gay Liberation and Law Reform During the Troubles, 1974-1985" 💡

Jack Caravella
Abstract
In recent historiography, there has been a trend that the Northern Irish gay rights movement was a small and relatively nonconsequential movement given the severity of paramilitary violence. I argue that while coinciding with the troubles, activist efforts in achieving homosexual law reform were both bolstered and stymied by numerous historical actors and organizations ranging from Catholic Cardinals and Protestant Reverends, to government officials (both British and Irish), and numerous armed factions on both sides of the law. Gay activists were forced to navigate a constantly changing landscape, uncovering unlikely alliances between rival governmental and religious organizations at a time many considered a civil war. More often than not, these alliances were forged in hopes of ending the homosexual law reform movement. In summary, after analyzing a variety of primary sources including gay newsletters both from Northern Ireland and abroad, local and national newspapers, year-end reports by activist organizations, letters and other forms of correspondence between clergy and government officials, legal documents and many others, I conclude that both queerness and the political movements associated with it in troubles-era Northern Ireland were both highly visible and consequential.
Subject Category
Arts and Humanities Categories: History
Special Topic Information
Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
History
Faculty Sponsor
Ryan Jones

285 • The Chronicle of a Country Foretold: Understanding Political Violence in Colombia through a Magical Realist Lens

Allison Wilde
Abstract
This paper examines outbreaks of political violence in 20th century Colombia through literary and historical analysis, a blend uncommon in historical studies of the topic. Previous historians have justifiably emphasized the importance of local and regional analysis for understanding of individual conflicts. However, these events were influenced and sometimes exacerbated by national political processes. I examine Gabriel García Márquez's works alongside more traditional primary sources to argue that issues such as factionalism within Colombia's two-party system, clientelism, and disenfranchisement repeatedly produced patterns of political violence in different historical contexts. García Márquez's magical realist novels portray time as both cyclical and linear. Although his characters move forward in time and experience unique events, what they experience occurs due to familiar historical patterns. I apply this temporal understanding in my analysis by looking at different periods including La Violencia and the guerrilla/paramilitary conflict in individual case studies. Despite the differing actors, circumstances, and political ideologies, I demonstrate how the cycles of national processes--such as factionalism--reappeared, leading to violence. Overall, I seek to clarify why Colombia was disproportionately plagued by violence throughout most of the 20th century and how this violence has impacted Colombia's development, particularly in rural areas. In a broader sense, this temporal argument could benefit historians because it considers the impact of historical change and historical continuity at the same time.
Subject Category

Arts and Humanities Categories: History
Faculty Sponsor Department
History
Faculty Sponsor
Ryan Jones
This presentation will also be presented at:
Phi Alpha Theta

3G: COMMUNICATION

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 202
Track
Social Science Categories: Communication
Session Chair
Atsushi Tajima, Communication

134 • Why Won't My Parlays Hit? An Analysis of the American Sports Betting Industry

Ian Palmieri
Abstract
This paper investigates the advertising of the American sports betting industry. The increased prominence of such messaging, including league partnerships and influencer endorsements, influences individuals to gamble at higher rates, especially young adult males. Analysis of a sportsbook's partnership with a sports league, three popular YouTube channels, and a self-administered survey consisting of Likert-scale and open-ended questions reveals that advertisers employ deceptive language and placement, leading to higher rates of sports betting and advertising wear out.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:
Eastern Communication Association
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

159 • Who Owns "Representing Self?" Global Construction of the Image of a Country Through Post-Colonial Senegalese Media

Genesis Flores
Abstract
This paper addresses the historical circumstances in Senegal that contribute to the modern systems and implementations within the media. There is an in-depth discussion and analysis regarding their relationship with France. This is meant to analyze the ways in which national identity in Senegal have been reinforced as well as disrupted. In addition, this is an issue and topic that is still under development as the relations with France are currently undergoing changes, causing for changes within the media as well.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication

Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:
Eastern Communication Association Conference
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
McNair Scholars Program Support

263 • The Ozempic Craze: Advertising the Blurred Lines Between Medicine and Beauty

Grace Terhune
Abstract
This paper examines the effects of advertising Ozempic, Wegovy, and similar medications. The growing public discourse surrounding celebrities drastic weight loss and the aggressive promotion of these drugs has sparked debates about their social and ethical implications. The paper focuses on the 2023 advertising campaign created by Ro, which prominently featured Wegovy and Ozempic in New York City subway stations- a high traffic area that has millions of people traveling daily. The campaign raised questions about the appropriateness of advertising prescription medications in public spaces and the influence it has on public perception regarding weight loss. Through framing and the agenda setting theory, we can see how advertising these medications can be harmful. A survey was conducted to understand people's perceptions of these medications and to see if the advertisements influenced the usage of these prescription medications.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:
Eastern Communication Association
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

182 • Genuine or Green Marketing? Climate Change Misinformation Influencing the Public

Matthew Martini
Abstract
This presentation looks into the prevalent influence greenwashing has in shaping the perception of climate change to the public. It explains how fossil fuel corporations, the United States government, and the media have manipulated the public to continue approving associations towards fossil fuel use, while dismissing environmental degradation and climate change's impacts at the same time. From analyzing public messaging and corporate statements from fossil fuel companies such as ExxonMobil, Chevron and BP Oil, to evaluating the role of the media in spreading misaligned views on climate change, to looking into Project 2025 and the current Trump administration's role in platforming the continuous consumption and production of fossil fuels as the answer's towards further complacency from the American People in embracing toxic energy resources above all. My findings have found that these collective actions have helped to delay climate change action, subvert accountability away from those in power who are causing our climate disasters to begin with, and leading towards the public underlining complacency in our current societal energy structure.
Subject Category
Social Science Categories: Sustainability Studies
Special Topic Information
The environment and/or sustainability

Faculty Sponsor Department
Communication
Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:
Eastern Communication Association
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

3H: SOCIOLOGY

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 203
Track
Social Science Categories: Sociology
Session Chair
Jennifer Rogalsky, Geography and Sustainability Studies

3 • The Role of Actuarial Discretion in Automotive Insurance Discrimination

Michael Abrams
Abstract
In today's auto insurance industry, rate discrimination against people of color and lower-class individuals is rampant, but unseen by those outside of the industry. This is due to the proliferation of individualist perceptions of the operations of the auto insurance industry among social scientists and legal scholars in calculating insurance rates. It operates on the basis of risk calculation, backed up by actuarial measures that serve to single out minorities living in low-income areas. Driving history, insurance history, zip code, homeownership, and credit are among the most common measures used by insurance companies to calculate insurance rate, are shaped by a history of racial discrimination in the financial and housing sectors, but are treated as unbiased by the Supreme Court, thus insulating the insurance company from legal challenge of discrimination. This has resulted in people of color in low-income areas paying disproportionate levels of their household income on auto insurance, which has the effect of reducing the social and spatial mobility of these groups. There has in recent years, however, been a legal struggle in states like California to decrease levels of discrimination in auto insurance by reducing the power of discretion allowed to insurance companies in choosing measures to determine rates. This project attempts to strengthen the position of these challenges by providing a concise description of how certain measures may unintentionally introduce bias into auto insurance rating.
Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
William Lofquist
This presentation will also be presented at:
SUNY Undergraduate Research Conference 2025 at SUNY Binghamton, Upstate New York Regional Conference 2025 at Hartwick College

270 • What *is* the Sociology of Diversity: Examining Literature in an Emerging Subfield

Guadalupe Alicea, Julia Carter
Abstract
The sociology of diversity is an emerging field that examines how social differences, such as race, gender, class, and ability, intersect within institutions and everyday life. As diversity becomes a central concern in education, workplaces,

and policymaking, scholars continue to debate not only what diversity is but also what it looks like in practice, how it is performed, who is responsible for enacting it, and how institutional diversity goals align–or fail to align–with broader social equity objectives. These key debates within diversity discourse aid to critically assess how SUNY Geneseo, self-defined as an "equity-based honors college," engages with diversity initiatives. While institutions often adopt policies and rhetoric that emphasize diversity, equity, and inclusion (DEI), research suggests a significant gap between institutional commitments and the lived experiences of marginalized groups. Preliminary observations from SUNY Geneseo's Diversity Summit allowed broader debates to be grounded in specific institutional context to consider how diversity is conceptualized, enacted, and contested within higher education.
Key debates surrounding the sociology of diversity primarily focus on the tensions found in what diversity is, what it looks like, and who is expected to perform it, as well as the manner in which diversity has been framed as a branding tool which obscures institutional role in oppressions while generating value for the institution. This raises critical questions that consider the difference in institutional goals versus practitioners goals for diversity as well as the legitimacy of diversity as a tool of equity.

Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Reece Torres

68 • The Role of Academic and Cultural Exchange Programs in Shaping Global Citizenship: A Sociological Perspective 💡

Gaetan Jean Louis

Abstract
This research presentation explores the critical role of academic and cultural exchange programs in shaping global citizenship. As the world becomes increasingly interconnected, the need for individuals to understand and appreciate diverse cultures, perspectives, and global issues is more urgent than ever. These exchange programs serve as a platform for fostering intercultural dialogue, enhancing mutual respect, and promoting collaborative problem-solving across borders. The study highlights the academic benefits of such programs, including exposure to different educational methodologies, access to international research, and the development of global networks. Moreover, it examines how cultural exchanges challenge stereotypes, encourage empathy, and contribute to the development of a more inclusive global community. By integrating qualitative data from student experiences and academic outcomes, the presentation will highlight the transformative impact of these programs on the cultivation of a sense of responsibility towards global citizenship. The research concludes by advocating for the expansion of such programs to further empower individuals to become citizens of the world who remain active and engaged locally and/or internationally.

Subject Category
Social Science Categories: Sociology
Special Topic Information
Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Sociology
Faculty Sponsor
Michael Restivo

56 • Analysis of the Interconnections Between Segregation, Physical Activity, and Social Determinants of Health in Rochester, New York 🌿

Alexandra Ventresca

Abstract

This research investigates why there is a distinctly defined area in the city of Rochester, New York that lacks significant physical activity. The social media app, Strava, maps how frequently a road/trail/path is used for exercise. An examination of Strava's "global heatmap" indicates a very clearly-bound area in Rochester that lacks physical activity, particularly running and walking. Because neighborhoods bordering this area are so commonly used for running and walking, it is peculiar that neighborhoods just a few blocks away are almost never utilized for physical activity. This research spatially analyzes the heatmap and maps of various health indicators, race, poverty, vehicle access, pollution, and more. This research will utilize the social determinants of health to analyze why this physical activity disparity exists, discuss effects of this disparity, and propose potential solutions to create a more connected and desegregated city.

Subject Category
Social Science Categories: Geography
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Geography and Sustainability Studies
Faculty Sponsor
Jennifer Rogalsky
This presentation will also be presented at:
Northeast Regional Undergraduate Research Scholarly and Creative Activities; American Association of Geographers Annual Meeting
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

3I: TRUMPONOMICS: EGGS, TARIFFS, DEBT, AND OTHER MACROECONOMIC ISSUES

4:30 - 5:45pm, Wednesday, 23 April 2025, Bailey 204
Track
School of Business Categories: Economics
Session Chair
Léonie Stone, School of Business

167 • Trumponomics: Eggs, Tariffs, Debt, and Other Macroeconomic Issues

Levi Allen, Emily Bahm, Alexander Berg, Jason Copella, Connor DiMartino, James Gardner, Sarah Ginnane, Henry Hallock, Eva Mandel, Anna Morrongiello, Ethan Whitehead
Abstract
The Fed Challenge team explains the major economic policies of the Trump administration and their likely effects on the economy. Come learn about what you're hearing in the news! We consider tariff and tax policies, the growing federal debt, the infamous price of eggs, and the outlook for the macroeconomy.
Subject Category
School of Business Categories: Economics
Faculty Sponsor Department
School of Business
Faculty Sponsor
Léonie Stone

3J: IDEA2VENTURE BUSINESS PITCH

4:30 - 5:45pm, Wednesday, 23 April 2025, Milne 301

Track

School of Business Categories: Entrepreneurship

Session Chair

Mark Rider, School of Business

76 • Sigma Sealing

Blaise Leone

Abstract

Pavement maintenance business in the Rochester areas

Subject Category

School of Business Categories: Entrepreneurship

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mark Rider

77 • HarvestWise 🌿 💡

Evan Frost

Abstract

HarvestWise is a smart grocery platform designed to revolutionize the way families shop, eat, and engage with their food. By combining seasonal shopping, farm and grocery store partnerships, and nutritional insights, HarvestWise empowers users to make informed, budget-friendly, and health-conscious decisions. Our app educates families on the best foods to buy based on seasonality, affordability, and nutritional value—helping them maximize health benefits while minimizing costs. We integrate with food delivery services and local farms, offering seamless access to fresh, high-quality ingredients. Users receive real-time updates on in-season produce, clean vs. pesticide-heavy foods, and sourcing recommendations from ethical farms. What sets HarvestWise apart is its gamified approach—rewarding users for making smart grocery choices. Through challenges, tracking tools, and community engagement, we turn grocery shopping into an interactive experience that promotes long-term healthy habits.

Subject Category

School of Business Categories: Entrepreneurship

Special Topic Information

The environment and/or sustainability

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mark Rider

78 • PR Kitchen

Miya Zukoski

Abstract

PR Kitchen is a new business idea that combines the convenience of a fast-food style restaurant along with the new health trends. By being whole-food based in our meals and using fresh ingredients from local farms we strive to build a reliable, healthy and convenient place to eat for all individuals.

Subject Category
School of Business Categories: Entrepreneurship
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

79 • COLGA Hammock Co. 🌿

William Carmen
Abstract
COLGA Hammock Co. is a small business dedicated to reinventing how people hammock through innovation and new technology as well as giving back to the environment.
Subject Category
School of Business Categories: Entrepreneurship
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

80 • Learning Horizons 💡

Maya Marcyan
Abstract
Learning Horizons is a learning platform tailored for homeschool settings that adapts to diverse learning styles and cultural backgrounds. The program includes customizable lesson plans, language support for non-native speakers, and progress-tracking tools to help parents measure student success and advancement. The vision for this platform is to revolutionize homeschooling by creating an inclusive, flexible, and empowering learning experience that nurtures every unique learner and supports the family, equipping them with the skills and confidence for lifelong success
Subject Category
School of Business Categories: Entrepreneurship
Special Topic Information
Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

82 • Talent Portfolio Building Service

Arianna Clark
Abstract
Customer: Rookie actors and creators (15-29) Talent Agencies
Problem: Rookie actors would often get overlooked during auditions compared to their peers who have established portfolios. With this changing market, agencies are looking for new diverse talent
Solution: My business would help aspiring actors and creators build portfolios to have an equal chance in an audition Partnering with agencies will help them find new talent to represent, complete with a portfolio.

Advantage: I am helping build a portfolio so an agency and casting directors would have a better understanding of who they're working with, hiring, or representing.
Business Model (How We Make Money): We would come up with a payment plan for our clients so we get paid without putting too much of a financial burden on them. We could partner with agencies and get funding from them. A potential business-to-business partnership.
A Major Trend in the Industry: Increased Focus on Diversity and Inclusion in the Entertainment Industry. There's a growing push for diversity and inclusivity in casting, content creation, and talent representation. More organizations are prioritizing diverse voices and backgrounds, creating opportunities for underrepresented talent to be showcased. This trend increases the demand for portfolios highlighting diverse talent and unique stories.

Subject Category
School of Business Categories: Entrepreneurship
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

83 • CardSaver

Hannah Olejniczak

Abstract
CardSaver is an app that is able to convert any gift card to a digital one. It stores gift cards, gives the current balance and notifies the user when they are in the vicinity of the stores they have money to.

Subject Category
School of Business Categories: Entrepreneurship
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

84 • The Nebupod

Isabelle Healey

Abstract
The Nebupod is a pediatric nebulizer that addresses key challenges in treatment compliance and patient comfort. This product features a customizable mask with stretchable material that adapts to growing children, ensuring a proper fit over time. The mask has a dual-layer design that incorporates a soft silicone mouthpiece for minimal leakage of medication and efficient medication delivery, while noise-cancelling ear coverings with Bluetooth offers an entertainment option to engage children during treatment, relaxing the body and mind and promoting focused breathing. The nebulizer mask is connected to a portable pack with a three hour battery life as well as a plug for an electrical outlet that provides flexibility in at-home treatments and on-the-go treatments. The Nebupod aims to enhance treatment compliance, reduce stress associated with treatment and reduce hospitalization by improving health outcomes. We focus on child-friendly design, comfort and engagement to transform nebulizer treatments into a more positive experience aligning with core values of future-focused innovation, responsibility, inclusion, reliability, and health.

Subject Category
School of Business Categories: Entrepreneurship
Faculty Sponsor Department
School of Business
Faculty Sponsor
Mark Rider

172 • Vented Downspout Adapter Presentation 🌿

Ryan Clark

Abstract

Downspouts have been around for some time now but it's time to innovate with them and make them more of a product. With my product they have multiple uses including the same as the traditional but also being able to harness excess water around buildings to prevent water damages such as erosion and flooding.

Subject Category

School of Business Categories: Entrepreneurship

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mark Rider

3K: GLOBAL AFRICAN STUDIES RESEARCH II

4:30 - 5:45pm, Wednesday, 23 April 2025, Milne 302

Track

Interdisciplinary and Other Categories: Black Studies

Session Chair

Shannon Ervay

132 • The Journey of Black Women in Olympic Figure Skating

Jaylen Terrero

Abstract

Figure skating has been a sport with limited racial diversity, Black women have faced and are facing overt and subtle discrimination in an industry that has long been dominated by white-upper-class athletes. Prominent figures such as Debi Thomas, the first Black woman to win a medal in the Winter Olympics, alongside other athletes like Jade Johnson, Maame Biney, Isabeau Levito, Starr Andrews, and Mabel Fairbanks have broken down barriers within Olympic figure skating. Their participation has had an impact on both the sport itself and their communities, as their presence has challenged racial and cultural norms in a traditionally exclusive environment. The exploration of Black women's experiences in the Winter Olympics will examine the obstacles they face, including issues of access, racial prejudice, and financial resources, and how they navigate these challenges to succeed at the highest level. By studying these athletes, light will be shed on how their visibility in Olympic figure skating inspires younger generations of Black girls to pursue careers in winter sports and defy traditional stereotypes. I aim to encourage greater diversity within the Winter Olympics and winter sports, advocating for policies and strategies that ensure Black women and other underrepresented groups have the opportunity to excel.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

109 • Migration Pattern Effects within Predominantly Black Neighborhoods: A Case Study in Brooklyn

Orquidia Geraldino

Abstract
This study examines the relationship between immigrant populations and neighborhood mobility patterns, particularly the movement of native-born Black and white householders and immigrants. Using survey data from residents and business owners, the research explores perceptions of gentrification, educational resources, and neighborhood stability. Respondents provide insights on their experiences with demographic shifts, economic changes, and personal decisions regarding relocation. The study aims to uncover how immigration affects community composition, access to resources, and urban development, offering a deeper understanding of the social and structural transformations shaping U.S. neighborhoods.

Subject Category
Social Science Categories: Political Science
Faculty Sponsor Department
English and Creative Writing, Black Studies, Political Science and International Relations
Faculty Sponsor
Olaocha Nwadiuto Nwabara & Anand Rao
Funding Sources
McNair Scholars Program Support

131 • Representation and Impact: The Role of Black Models in Runway Fashion Shows.

Jaylen Terrero

Abstract
The representation of Black models in the fashion industry has evolved, with significant contributions from pioneers such as Naomi Sims, Iman, and Beverly Johnson in the 1970s and 1980s. Even so, barriers continue to exist for Black models in the runway fashion world. Historical and contemporary trends in high-profile fashion shows, including those in fashion capitals like Paris, Milan, London, and New York, show the visibility of black models has shaped consumer perceptions, industry practices, and societal beauty standards. By focusing on and examining the intersectionality of race, gender, body type, and nationality, the study will explore how these factors influence the Black model's careers and opportunities in the fashion world. The growing presence of Black models on the runway has not influenced the aesthetics of fashion, and the marketing strategies of brands, as inclusion plays a critical role in shaping brand identities and product development. Focusing on the impact of Black models visibility, addressing how they challenge industry norms and influence societal perceptions of beauty, diversity, and inclusivity. With the findings of my research, I hope to provide insight into how a more inclusive runway industry can benefit the fashion world, drive consumer demand for diversity, and provide a platform for marginalized voices in the media.

Subject Category
Arts and Humanities Categories: Visual Arts
Special Topic Information
Faculty Sponsor Department
English and Creative Writing, Black Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara

63 • Diasporic Dance Traditions: De-Westernizing the Understanding of Movement Through a West African Context 💡

Shannon Ervay

Abstract

The division between simple movement and dance is the implementation of intention. As intention is introduced to movement, it develops its own power of communication and meaning, becoming its own, personal language. However, Western ideologies continue to dominate widespread global media, including within the perception of dance. But dance continues to persist as a mode of communication in West African countries such as Senegal, as it is a part of everyday life. Developing in a culture that values lineage and their community, dance in Senegal is a unification of connection, celebration, and tradition, going beyond words through movement. This paper aims to examine how culture impacts the way that movement is interpreted and valued, focusing on how West African dances of Djembe and Sabar continue to maintain a deeper relationship with communication and intention. West African intention behind dance sustains its meaning throughout the diaspora and integration into different dance styles to support diasporic identities beyond Africa. These movement styles are performed as a conduit of understanding oneself and others in a language beyond words.

Subject Category

Interdisciplinary and Other Categories: Africana Studies

Special Topic Information

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

English and Creative Writing, Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

3L: CHEMISTRY

4:30 - 5:45pm, Wednesday, 23 April 2025, Milne 303

Track

Science and Mathematics Categories: Chemistry

Session Chair

Kazushige Yokoyama, Chemistry and Biochemistry

235 • Investigation of Reversible Aggregation of Amyloid beta 1-40 Coated Gold Nano-Particles

Christopher Kolilias, Victoria Brzezinski

Abstract

The gold colloid coated with amyloid beta 1-40 (Aß1-40) was investigated through the observed pH-dependent shift of the SPR (Surface Plasmon Radiance) band. The gold colloid aggregates were formed under acidic conditions. Remarkably, Aβ1-40 coated 20 nm gold supported quasi-reversible self-assembly of the aggregates as the pH was alternated between pH 4 and pH 10. The morphology was distinctly observable between two different conditions. Nevertheless, the SERS (Surface Enhanced Raman Scattering) spectrum presented minor differences. An additional analysis displayed the contrast in spectral density in the regions of 250 cm-1 and 1750 cm-1. The mode analysis is distinguished in the reversible aggregation, the formation of aggregates with the important influence of the benzene ring components of Tyrosine and Phenylalanine. The disassembling of the aggregates, however, was intensified through the participation of Histidine, Glutamine, Methionine, and Aspartic acid.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

2025 Rochester American Chemical Society Collegiate Research Symposium

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award, National Science Foundation 2117780-MRI, and Geneseo Chemistry Department Alumni Summer Research Fellowship (Gerry Rhodes/Kenneth Lipkowitz)

3N: MUSIC TECHNOLOGY

4:30 - 5:00pm, Wednesday, 23 April 2025, Brodie 202
Track
Arts and Humanities Categories: Music
Session Chair
Michael Masci, Music and Musical Theatre

88 • Music Technology: Where It's Been and Where It's Going

Trevor Donlon, Bradley Adams
Abstract
The goal of this presentation is to inform and bring insight into the world of Music Technology. Understanding the importance and relevance of this field can help us realize the opportunities it offers in the 21st century. Throughout the presentation, we will introduce Music Technology's historical role in the world, as well as current and future outlook for this field. With an emphasis on electronic music, it will highlight the field's origin in the mid to late 1900s and the commonality of the genre as it exists today. The presentation will also cover opportunities offered by the Geneseo Music Department, focusing specifically on the relatively new Music Business, Recording, and Production program. Along with a tour of the new recording studio in Brodie Hall, the showcase will conclude with a mock rave, involving elements discussed in the presentation.
Subject Category
Arts and Humanities Categories: Music
Faculty Sponsor Department
Music and Musical Theatre
Faculty Sponsor
Michael Masci

POSTER PRESENTATION SESSION

2:30-4:20pm, Wednesday, 23 April, 2025, MacVittie College Union Ballroom

Posters will be available for viewing from 10:00 am-4:20 pm. Authors will be present from 2:30-4:20 pm.

ANTHROPOLOGY

238 • "Forgotten Bodies": Analyzing the Remains of an Early 19th-century Poorhouse Burial

Tia Blossomgame, Audrey Ryan

Abstract

In the summer of 2024, human remains were found at a residential construction site in Geneseo. The discovery was determined to be the remains of a historical burial from the early 19th century Livingston County Poorhouse. Dr. Kristi Krumrine, from the SUNY Geneseo anthropology department, excavated the remains and, with the assistance of the authors, screened backdirt piles to locate remains, and cleaned and analyzed the bones. Unfortunately, the discovery of the grave during a backhoe excavation severely damaged the bones. During the fall semester, students pieced together the fragmented bones and analyzed the remains, looking for characteristics that could help identify who this person was. Our investigation revealed that the person was likely a well-muscled male, 35- to 45-years old, standing 5'6"-5'8" in height, who likely suffered from hip dysplasia. At the end of this project, we plan to conduct a DNA analysis from a bone or tooth sample and to properly rebury the remains. We hope that this will allow us to positively identify the individual, locate any descendants, and bury this individual with his family.

Subject Category

Social Science Categories: Anthropology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

Funding Sources

McNair Scholars Program Support

244 • Trends and Practices Relating to Maternal Mortality Rates in 19th and early 20th Century Rochester, New York

Shannon Lacy

Abstract

This study explores the incidence and causes of maternal mortality in 19th century and early 20th century Rochester. Several practices, including the emergence of antiseptics and obstetrics, have reduced maternal mortality rates since the end of the 19th century. At that time, the development of germ theory led to the discovery of the cause of puerperal fever, a common cause of maternal deaths first addressed by Semmelweis in the 1840s. Although the overall prevalence of sepsis-related post-birth mortality has decreased, we are now seeing how the medicalization of birth comes with its own complications, including hemorrhage and post-intervention infection. In this study, I seek to understand how maternal mortality causes and rates changed from the mid-1800s to the mid-1900s in Rochester, and how these outcomes were shaped by medical advancements and sociocultural factors. Methods used for this study include analysis of transcribed death records from Mount Hope cemetery, as well as sources documenting conceptual shifts surrounding birthing practices, medical advancements and morbidity and mortality over this time period. In addition to an overall

decline in maternal mortality, I expect to see trends in maternal mortality being shaped by increased hospital births, decreased trust in midwives and complications from medical interventions.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

254 • "Ship Fever": Contextualizing Epidemic Typhus in Mid-19th Century New York

Audrey Ryan

Abstract

Epidemic typhus is a disease caused by the bacteria *R. prowazekii,* and spread through the vector of human body lice. Historically, typhus outbreaks have been associated with "social maladies": poverty, war, natural disasters, and other factors that bring about the overcrowded and unhygienic living conditions where typhus spreads most easily. In a study I conducted last year, I learned that between 1847 and 1850, 17.5% of the 169 adult deaths in the Monroe County Poorhouse were attributed to typhus (also called "ship fever"). In a sample of 205 people buried in Mount Hope Cemetery (Rochester's general population) during the same time frame, typhus only accounted for 1.5% of deaths, less than a tenth of the proportion in the poorhouse. For this project, I examine the social factors and historical context, especially structural violence and stigma, that contributed to this huge discrepancy. This research should highlight how infectious disease is entwined with social structures.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

267 • An Investigation of the Impact on Human Well-being by Flooding in Delaware 🌿

Daniela Paolino

Abstract

Flooding causes obvious physical destruction, but if the visible effects of destruction are so great, how much greater are the invisible? Looking at the history and preexisting effects of flooding on the environment, and using them to reveal potential long-term physical damages helps to make known its potential consequences on society. Delaware is a prime subject to examine; due to its long history of flooding, water has progressively consumed coastal lands during record-breaking coastal floods that are projected only to increase in magnitude. This review attempts to elucidate how social well-being in Delaware is being impacted by flooding and what is being done to alleviate the physical and social strain. In order to mitigate current distress, needs expressed in the microsystem have to be recognized and addressed. Professionals involved in the combative efforts have to recognize the importance of ensuring immediate safety for needs such as evacuation protocols, emergency transportation, nutritional security, and accommodations for physical and psychological needs. To prevent further destruction, it is vital to understand the functions of the natural environments (e.g. wetlands) in order to develop restorative practices that harness ecological processes already in place and therefore minimize the invasiveness of restoration and reduce long-term negative impacts. While a difficult issue to approach, through the collaborative efforts of professionals and community members, mitigation and restoration regarding the effects of flooding can lead to an alleviation of social and physical burdens.

Subject Category

Social Science Categories: Sociomedical Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department
Anthropology
Faculty Sponsor
Brenna McCaffrey

13 • The Vitale Collection

Christian Chaffee, Tia Blossomgame, Aiden LaLone, Abgail Cornelius
Abstract
This poster is an analysis of an archaeological collection by the late amateur archaeologist Jim Vitale, which was donated by his son, Sebastian Vitale. Jim Vitale was an anthropology graduate from SUNY Geneseo, studying archaeology under Dr. Wendel Rhodes. Vitale became an avid collector after college, focusing his attention on Native American history prior to European contact. He conducted extensive surveys and excavations in and around the Genesee Valley. His finding of Native American artifacts, such as projectile points and pottery, helps tell the story of who lived in these areas before Europeans took them over. After his passing, Vitale's archaeological collection found during his excavations was donated to SUNY Geneseo's Anthropology Department. To help with the collection and practice skills required in professional archaeological labs, students were assigned to clean, organize, and catalog the archaeological collection. The end goal of this project is to donate these artifacts to the Livingston County Historical Museum.
Subject Category
Social Science Categories: Anthropology
Faculty Sponsor Department
Anthropology
Faculty Sponsor
Paul Pacheco

BIOLOGY

96 • Personality, Morphology, and Intraspecific Interactions in the Ant-Mimicking Spider, *Myrmarachne formicaria*

Theodore Charlap, Colton Judd
Abstract
The Eurasian ant-mimicking spider *Myrmarachne formicaria* (Salticidae) is a relatively new arrival to North America and has spread throughout the Great Lakes region. M. formicaria has evolved remarkable ant-like appearances and behaviors, alongside enlarged chelicerae (jaws) in males. These chelicerae may be critical in competitive interactions as they spread them during confrontations with other males. The outcomes of these encounters could significantly impact courtship success. Our study aims to explore three main questions: (1) Do *M. formicaria* exhibit consistent variation in behavior that could be characterized as differences in personality? (2) If these spiders do exhibit consistent personalities, are these traits linked to physical features such as overall body size and chelicerae size? (3) Does personality or morphology influence the results of intraspecific interactions? To address these questions, we carried out several behavioral assays, repeated twice, to quantify potential personality traits. We measured voracity, defined as the intense drive to feed, as the time elapsed before attack on fruit flies. We assessed aggression as the time spiders spent displaying at a mirror. Finally, we assessed intraspecific interactions using a male-male duel assay that quantified aggression towards an opponent, time spent displaying, and other factors. Alongside these behavioral tests, we measured the spiders and analyzed the relationships between measurements, behavioral traits like aggression and voracity, and intraspecific encounter outcomes. Understanding these relationships could reveal how physical and behavioral traits influence female preferences and male courtship outcomes.
Subject Category
Science and Mathematics Categories: Biology
Faculty Sponsor Department

Biology

Faculty Sponsor

Jennifer Apple

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

191 • Renewal of the Arboretum Kiosk 1

Ella Hinckley, Kaitlin Carbone, Kayla Forthman

Abstract

The purpose of this project is to create a resource for those who visit the Spencer J. Roemer Arboretum, a natural area preserved on the south side of campus. The information on the entrance kiosk has not been updated since 2013. By renewing the kiosk at the front of the Arboretum, visitors will have easy access to updated information including a trail map, trail conditions, native and invasive species, potentially harmful species, trail etiquette, and the history and purpose of the Arboretum. In the fall, we did extensive research on nature interpretation and the parts of the kiosk that required visual and informational renewal. We collected previous map files and integrated these with new GIS layers of an arboretum trail map on QGIS, while experimenting with symbology and readability. We also gathered information on the Arboretum's ecosystems and biodiversity from professors, events, and online sources. Key species were selected, along with photographs and the appropriate information for each. Furthermore, we looked into past and present research projects, management efforts, and resources such as iNaturalist and trail cameras. Sustainability in higher education is a value of SUNY Geneseo. In understanding how to protect and preserve our planet, environmental education is key. As a hotspot for student research as well as a natural space for mindful recreation, the Arboretum offers a variety of uses. Our map is important for visitor safety and accessibility, and an updated narrative on the history and ecology is both engaging and educational for visitors.

Subject Category

Interdisciplinary and Other Categories: Environmental Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Jennifer Apple

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

192 • Renewal of the Arboretum Kiosk 2

Ella Hinckley, Kaitlin Carbone, Kayla Forthman

Abstract

The purpose of this project is to create a resource for those who visit the Spencer J. Roemer Arboretum, a natural area preserved on the south side of campus. The information on the entrance kiosk has not been updated since 2013. By renewing the kiosk at the front of the Arboretum, visitors will have easy access to updated information including a trail map, trail conditions, native and invasive species, potentially harmful species, trail etiquette, and the history and purpose of the Arboretum. In the fall, we did extensive research on nature interpretation and the parts of the kiosk that required visual and informational renewal. We collected previous map files and integrated these with new GIS layers of an arboretum trail map on QGIS, while experimenting with symbology and readability. We also gathered information on the Arboretum's ecosystems and biodiversity from professors, events, and online sources. Key species were selected, along with photographs and the appropriate information for each. Furthermore, we looked into past and present research projects, management efforts, and resources such as iNaturalist and trail cameras. Sustainability in higher

education is a value of SUNY Geneseo. In understanding how to protect and preserve our planet, environmental education is key. As a hotspot for student research as well as a natural space for mindful recreation, the Arboretum offers a variety of uses. Our map is important for visitor safety and accessibility, and an updated narrative on the history and ecology is both engaging and educational for visitors.

Subject Category

Interdisciplinary and Other Categories: Environmental Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Jennifer Apple

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

198 • Genetic Variation and Endosymbiont Incidence in the Introduced Ant-mimicking Spider, *Myrmarachne formicaria*

Milo Miller, Brooke Sikora, Brenna Dunn

Abstract

We examined the genetic and endosymbiotic diversity of the ant-mimicking jumping spider *Myrmarachne formicaria*, a spider native to Eurasia whose presence in North America has expanded over the past several decades. Non-native populations often exhibit reduced genetic diversity, so patterns in genetic diversity may help demystify their number of and source of introduction events. Prior sequence analysis of several mitochondrial genes revealed little genetic variation within M. formicaria across most European and North American populations. One of this study's aims was to sequence two nuclear genes, 28S rRNA and Histone H3, to expand the number of genetic loci available for assessing genetic diversity. Compared to other arthropods, little is known about the incidence of endosymbiont infections in arachnids and their impacts. Colonization of new geographic areas have been found, in some taxa, to result in the loss of endosymbiont bacteria. Previous surveys of both North American and a limited sample of European *M. formicaria* identified ubiquitous Cardinium infections and somewhat sporadic incidences of *Wolbachia* infection. A Cardinium gene sequenced from infected *M. formicaria* showed minimal variation across most samples, with a European outlier. This study also involved surveying spiders for Phage WO, a bacteriophage infecting Wolbachia. Exploring the genetic and endosymbiotic diversity of *M. formicaria* may help us describe patterns in their introduction and spread in North America.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Jennifer Apple

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

206 • Identities and Nesting Patterns of Cavity-Nesting Bees and Wasps

Julia Lingenfelter, Sophia Stang, Carly Wick

Abstract

Cavity-nesting bees and wasps lay eggs in hollow stems or other pre-made cavities and provision their larvae with food to overwinter until their emergence in spring. To observe nesting patterns, we placed nesting boxes containing "bee

tubes" made of hollow reeds in five locations around the SUNY Geneseo campus. We photographed the tubes once a week over the summer, as the tubes were gradually sealed off by insects to form larval cells. We noted the type of material used to fill the tubes and analyzed the trends in the phenology and site preferences of the various fill types using the photographic record. The bee tubes were allowed to overwinter and then, over the spring of 2024, the bee tubes were dissected and observations were made to identify the immature occupants based on their morphology and the materials used to provision the young. This fall, we pinned the voucher specimens and identified them using the online tool "Discover Life". Some of the commonly observed bee taxa in the tubes include *Megachile pugnata*, Megachile rotundata, *Megachile relativa*, and Osmia caerulescens. Wasps were also common occupants of the tubes, including taxa such as the grass-carrying wasp *Isodontia mexicana,* the spider predator Trypoxylon sp., and the potter wasp *Ancistrocerus capra.* In this study, we connected the identities of occupants to the cavity fill type, site preferences, and timing of occupation. This information gives us a better understanding of our local native bee and wasp ecology and the conservation efforts necessary to support their populations.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Jennifer Apple

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

173 • Isolation & RNA Sequencing of an *N. crassa* fsd-1 DNA Binding Domain Mutant Strain

Sophia Bahm, Leila Doerrer

Abstract

Neurospora crassa is a model filamentous fungus that is widely used in a variety of genetics research. It is a reproductively versatile organism, with the ability to reproduce both sexually and asexually. *N. crassa* leaves many questions unanswered in regards to its mating behaviors. Specifically, we focus on how the transcription factor *fsd-1* regulates mating behaviors of this fungus. Expression of *fsd-1* allows for successful mating whereas strains with a deletion of *fsd-1* (*Δfsd-1*) are functionally sterile. The focus of this study is the isolation of RNA from a mutant strain of *Neurospora crassa* containing a variant of the *fsd-1* gene that has a single mutation in a key amino acid of its DNA binding domain. We have confirmed that this mutant strain is sterile and does not undergo mating. RNA will be isolated using the Trizol method and then sent out for RNA Illumina Sequencing. These results will be compared to those of previous RNA sequencing results for both the wild type and deletion strains. The Galaxy platform will be used for RNAseq analysis and to further draw conclusions regarding the differences between the wild type, deletion, and mutant *fsd-1 N. crassa* strains.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Betsy Hutchison

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

212 • Isolation and Genome Sequencing of Antibiotic-producing Bacteria from the Local Geneseo Environment

Jacey Cappa, Andrea Rivera

Abstract

The focus of this study is to isolate bacteria from local Geneseo environments and perform whole genome sequencing on potential antibiotic-producing bacteria. Last fall, we collected soil, water, and plant samples in the local Indian Fort Nature Preserve. We suspended samples in water and set up dilution plates on bacterial growth medium (tryptic soy agar). In particular, we were interested in isolating bacteria that produce antimicrobial compounds, such as actinomycetes. Actinomycetes are commonly found in soil, and their growth gives soil its characteristic earthy smell. In addition, Actinomycetes have developed a spectrum of biological antimicrobial activities ranging from antibiotic to antifungal. Actinomycetes have also been found to serve an important ecological role in the environment by recycling organic matter, degrading pollutants, and promoting plant growth. We will also determine whether these strains produce antibiotics and describe their overall growth characteristics. Currently, we are isolating DNA to send for Illumina whole genome sequencing (SeqCenter, PA). This will allow us to assemble their genomes using freely available tools on the Galaxy platform, and identify potential antibiotic-producing genes.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Betsy Hutchison

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

201 • The Impact of Emerald Ash Borer on Western New York Wetlands 🌿

Caitlin Schirmer, Samuel Bonesteel, Brian Hoven

Abstract

First identified in New York in 2009, emerald ash borer (*Agrilus planipennis*) (EAB) is an invasive insect of great concern. Green ash (Fraxinus pennsylvanica), a dominant canopy tree in forested wetlands of western New York, is particularly susceptible. Widespread EAB-caused ash loss is proposed to have substantial impacts on wetland ecosystems. To assess potential changes, we established 16 sites, each site containing three circular 400 meters $(m)^2$ plots in 2024. We identified and measured diameter at breast height (DBH) for all trees ≥10 centimeters (cm) within plots. For all canopy trees we assessed crown position. In the canopy layer we identified 19 species; the two most common were green ash 43% and swamp maple (Acer × *freemanii*) 50%. We assessed all ash in the canopy and subcanopy layers (≥9.9 cm DBH) on a 1-5 scale, with 1 being healthy and 5 being dead, mean ash health was 4.7 ± 0.1 and 2.7 ± 0.2, respectively. Canopy stand BA, ash canopy BA, and ash health were used to calculate ash decline and ash mortality indices, the mean was 49 ± 0.04% and 47 ± 0.04%, respectively. Mean percent canopy openness was 44 ± 3.7% per plot. A cumulative log link model will be used to assess a potential relationship between ash health, canopy position, and size. This data is a baseline for assessing long-term EAB-caused ash mortality in western New York wetlands.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Brian Hoven

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Other Source of Support

Please provide information on Other Source of Support

Dr. Hoven received the Presidential Summer Research Fellowship

208 • Using LiDAR to Quantify Shrub Layer Response to EAB Caused Ash Mortality

Bryan Friedel, Thomas Back

Abstract

Emerald ash borer (EAB) (*Agrilus planipennis*) is an invasive wood-boring beetle first identified in New York in 2009. EAB is responsible for the massive ash die-off in ash-dominated wetlands common in western New York. In the short-term, EAB has likely had a profound influence on these ecosystems, however long-term impacts are not well understood. One hypothesis is that increased resource availability due to canopy ash mortality will result in shrub layer expansion. This is problematic since many of these wetlands are dominated by the invasive shrub multiflora rose (Rosa multiflora). A significant expansion in multiflora rose cover could have negative ecological, economic, and social repercussions, due to their importance for recreation, water quality, and wildlife habitat. Our study utilizes historical LiDAR layers from 2011 and 2019 to quantify ash loss in Livingston County. If sources indicate a strong inverse relationship between shrub layer and canopy cover, we can make inferences about changes in the shrub layer. This model has the potential to aid in management efforts to control invasive shrub spread in ash dominated wetlands.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Brian Hoven

This presentation will also be presented at:

Finger Lakes Institute

211 • Evaluating the Differences in Ecosystem Services Provided by Native and Non-Native SUNY Geneseo Trees

Abigail Miller, Joshua Lefkowicz, Nathan Walz

Abstract

Many of the trees planted on SUNY Geneseo's campus are for aesthetic purposes, but also provide many benefits to campus. The trees help to avoid stormwater runoff, remove air pollutants, sequester carbon dioxide, and have the ability to host lepidoptera species. iTree Design is a platform that enables investigators to estimate ecosystem services provided by trees on SUNY Geneseo campus, based on their species and size - diameter at breast height (DBH). It also estimates future ecosystem services. In part of an ongoing research project, ten native species and ten non-native species planted on SUNY Geneseo's campus were measured and identified to be analyzed in iTree. Their total benefits, including ability to avoid stormwater runoff, remove air pollution, sequester carbon dioxide, and host ability for lepidoptera, were calculated for 25 years from present and adjusted to be presented as the unit per centimeter DBH for an accurate comparison of their ecosystem benefits. Many of the native trees, such as the red maple (*Acer rubrum*), sequesters more carbon dioxide (around 126.6748466 kg/cm DBH in 25 years) compared to the non-native trees, such as the paperbark maple (Acer griseum) (sequesters around 42.43243243 kg/cm DBH in 25 years). The differences in these values for additional native and non-native trees will be assessed. Ecosystem service evaluations can provide additional criteria for evaluating tree species for campus plantings.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Brian Hoven

162 • Examining the Involvement of p27 and p57 in Clobetasol Induced Quiescence in the Vulvar Cancer Cell line, UMSCV-4

Claudia Marsello
Abstract
Quiescence is a reversible cellular state where a cell exits the cell cycle and ceases replication in response to stress. Cells can re-enter the cycle once the stress is alleviated. Emerging evidence suggests that cells in a quiescent state may contribute to the long-term dormancy of cancer cells. Vulvar squamous cell carcinoma (VSCC) is a rare form of female genital cancer, and while its treatment and diagnosis remain poorly understood, ultrapotent topical corticosteroids like clobetasol are commonly used to treat vulvar lichen sclerosus (VLS), a skin condition that can precede vulvar cancer development. Our studies show that a subpopulation of the vulvar cancer cell line, UMSCV-4, enters a state of quiescence upon clobetasol exposure. After removal of clobetasol, this subpopulation re-enters the cell cycle. Using BrdU incorporation, a measure of DNA synthesis, we quantified the clobetasol-induced decrease in proliferation and assessed how quickly cells re-enter the cycle post-treatment. Notably, many cells did not re-enter the cell cycle, prompting us to use a caspase-3 assay to determine if these cells were undergoing programmed cell death or apoptosis. Finally, we examined the expression of two proteins, p27 and p57, which are linked to quiescence induced by glucocorticoid receptor activation in lung cancer. Both proteins are tumor suppressors that regulate cell proliferation by inhibiting complexes that drive progression through the cell cycle. Since clobetasol acts through the glucocorticoid receptor, we measured the expression levels of these proteins using western blot analysis of cell extracts after clobetasol treatment.
Subject Category
Science and Mathematics Categories: Biology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Jani Lewis
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

224 • Understanding the influence of Different Intermediate Filaments on the Morphology of the Vulvar Cancer Cell Line, A431D

Avinash Gopal, Sara Mongelli, Abby Stevenson, Trinity Trojanowski
Abstract
Vulvar squamous cell carcinoma (VSSC) is a rare yet aggressive cancer, primarily affecting women over 60, with early stages often masked by vulvar lichen sclerosis (VLS). VLS is typically treated with ultrapotent corticosteroids like clobetasol. Our previous work showed that clobetasol treatment of A431 vulvar cancer cells leads to a loss of the cell-cell junction protein E-cadherin and a gain of the intermediate filament protein vimentin. These changes are associated with an epithelial-to-mesenchymal transition (EMT), a process linked to cancer progression and the acquisition of a more aggressive phenotype. Interestingly, A431D cells, derived from clobetasol-treated A431 cells, do not lose expression of the epithelial intermediate filaments, cytokeratins 8 and 18. This study explores the roles of vimentin, cytokeratins 8 and 18, and adherens junction components (E-cadherin and plakoglobin) in driving the morphology of these vulvar cancer cells. Using molecular and cellular biology techniques, including plasmid transfections and immunofluorescence

microscopy, we introduce E-cadherin-plakoglobin constructs into A431D cells to assess their impact on the intermediate filament network. We hypothesized that E-cadherin-plakoglobin constructs, which reestablish adherens junctions and desmosomes, will restore a cytoarchitecture pattern typical of epithelial cells. In contrast, constructs lacking essential domains for adherens junction and desmosome formation will fail to alter the distribution of cytokeratins and vimentin. This study aims to deepen our understanding of cytoskeletal remodeling in cancer progression.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Jani Lewis

104 • The Role of YAP and pYAP in Zebrafish Retinal Regeneration

Muwafaq Ibrahim, Jennifer Ripa, Sarah Karimi

Abstract

Regeneration is a biological process allowing organisms to restore damaged tissues. Unlike humans, zebrafish (Danio rerio) possess the remarkable ability to regenerate retinal cells, making them a valuable model for studying potential therapeutic applications for vision loss. The Hippo (Hpo) signaling pathway, a key regulator of organ size and cell proliferation, is implicated in regulating mammalian retinal regeneration. Its downstream effector, Yes-associated protein (YAP), is inactivated through phosphorylation (pYAP), preventing nuclear entry and transcriptional activation of cell cycle genes necessary for regeneration. YAP/pYAP dynamics is an open area of retinal research. We hypothesize that Hpo signaling is suppressed during regeneration in Müller glial stem cells, leading to decreased pYAP levels early in the process and subsequent restoration as retinal repair progresses. Our study aimed to elucidate the involvement of the Hpo pathway in zebrafish retinal regeneration following light-induced damage. Using dot blot analysis and immunohistochemistry, we tested the ability antibodies proven to work in mice to work on zebrafish retinal lysates and quantify YAP and pYAP levels across multiple time points post-injury. The dot blot results showed varying levels of YAP and PYAP, but with no clear trend that aligns with our predictions. From the immunohistochemistry results, the pYAP protein showed similar inconsistencies. From this, we cannot currently provide evidence in support of our hypothesis. We will look to incorporate standardized protein quantification techniques to enhance out detection reliability.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

This presentation will also be presented at:

Society For Developmental Biology Northeast Regional Meeting

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

179 • Chromosome Assembly Factor 1b in Zebrafish Retinal Development

Stephen Welsch, Dan Coffee, Zachary Gilly, Thadar Noe, Olivia Gibeault, Skyler Flores

Abstract

Zebrafish possess the ability to regenerate body parts such as the heart, fins, pancreas, brain, spinal cord, kidneys, and retina. When zebrafish retinal damage occurs, Müller glia divide and create neuronal precursor cells, which go on to become replacement retinal neurons. This allows zebrafish to recover from retinal damage. However, mutant zebrafish cannot fully develop and regenerate retinal cells. In particular, the *good effort* (gef) mutant allele of the chaf1b gene is characterized by a period of normal development, followed by cell death in highly proliferative developing tissues, including the retina, brain, and pectoral fins. The *gef* mutant retinal cells appear unaffected until roughly two days post-

fertilization. This suggests a requirement for Chaf1b at the switch from cycling retinal progenitor cells to post-mitotic differentiating cells. It is proposed that Chaf1b mutations are not immediately lethal due to maternal deposition of functional proteins in the egg. Chaf1b is a subunit of the chromatin assembly factor (CAF1) complex, which is responsible for the assembly of histones at the replication fork during S phase. The location of Chaf1b protein has not been rigorously tested. We are testing antibodies generated against Chaf1b in gef-mutant embryo and wild-type embryo lysates to determine whether maternally provided Chaf1b persists differentially in later embryonic cells.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

This presentation will also be presented at:

2025 Society for Developmental Biology Northeast Regional Meeting

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

216 • Location of S*onic Hedgehog* Signaling in the Regenerating Zebrafish Retina

Adam Snyder

Abstract

The Sonic Hedgehog protein (Shh) is required in the cell cycle for development and regeneration in zebrafish eyes. This is because it controls how cells differentiate into specialized cell types. The gene, *ptch2*, is also important due to it being a component of the Shh signaling. The retina needs to replace photoreceptors, a specific cell type of the retina, after it is damaged by light. It is unknown which retinal cells produce Shh. To detect which cells that express the *shh* and *ptch2* mRNA, we plan to perform in situ hybridization using antisense probes on regenerating retinal sections and compare this to normal retinas. This will be done by attaching a fluorescent molecule to antisense *shh* and *ptch2* synthetically transcribed RNAs. We are currently in the process of making probes.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

272 • Florescence In Situ Hybridization in Zebrafish with the Neurod4 Gene

Sarah Allam, Olivia Schnauder, Lauren Conover, Samuel Sunderland

Abstract

Neurod4, neurogenic differentiation 4, is a protein encoding gene that is crucial for neuronal development and is expressed in the nervous system specifically within the brain. The purpose of this gene is to regulate the extreme, rapid growth of photoreceptor progenitors in the retina of Zebrafish (*Danio rerio).* Due to the highly similar, although not identical, gene patterns in humans, Zebrafish act as an exceptional model organism to provide significant insights of the role of Neurod4 in human retinal and neuronal development. The transgenic nature of Zebrafish allows for genetic modification to express the Neurod4 gene in this model organism. This allows for control of gene expression and to efficiently observe the role that it has in this study. Fluorescence In Situ Hybridization (FISH) is a laboratory technique used to locate a particular DNA sequence. A small piece of DNA is tagged with a fluorescent dye, known as a probe, and is used to bind to its matching DNA sequence within a chromosome. This experiment is using isolated DNA from the Neurod4 transgene to develop an RNA probe to inject Zebrafish embryos. Through successful completion

of this technique, a fluorescent glow is expected behind the retinas and along the spine. This will confirm the location of the Neurod4 gene as well as if the transgene shares the same function as the endogenous gene.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

85 • Investigating Drivers of Variation in the Paleognath Wing

Isabel Marzec, Sara Burch

Abstract

Paleognathae is a group of flightless birds largely characterized by the absence of the keeled sternum. As they diverged from their flighted ancestors, most palaeognaths developed cursorial traits, such as greater body mass and elongated hindlimbs, and concomitant with this was the reduction of the forelimbs, which were no longer needed for flight. This study investigates the forelimb variation within and between different paleognathous species to determine which behaviors and environmental pressures may have contributed most to the forelimb morphologies of extant taxa. Differences in the forelimb elements of males and females, indicating sexual dimorphism in the wing, would suggest that variation results from sex-specific functions such as mating displays. Comparison between captive and wild populations could show variation resulting from the presence of competition, predation, and other environmental factors. However, initial results suggest there is no clear pattern of sex-specific variability among *Struthio camelus* individuals. Using two-dimensional geometric morphometrics, principal component (PC) data for species representing all paleognath families were analyzed to investigate variation between forelimb elements and also to test adherence to the hypothesized pattern of limb reduction in which reduction occurs distal to proximal. These methods allow us to contrast interspecies and intraspecies variation to quantify how functional demands on the wing affect morphological variation of the bones and thus better understand the evolutionary relationship between form and function in cases of limb reduction.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Sara Burch

This presentation will also be presented at:

The Society for Integrative and Comparative Biology

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship

221 • Morphological Forelimb Reconstruction of *Yutyrannus huali*: A Study in Musculature and Skeletal Trends in Tyrannosauriod Clade

Declan Fahy

Abstract

Paleontology is a field composed largely of comparison and inference. Nowhere is this more evident than in the forelimb reconstruction of *Yutyrannus huali*, a basal tyrannosauroid of Cretaceous China and a distant cousin of the more famous Tyrannosaurus rex. The reconstruction was developed in order to better conceptualize muscle evolution in the tyrannosaur clade as a whole. This was done by utilizing a variety of different morphological comparisons to species in

multiple different lineages. Comparisons were made with previous research done on *Tawa hallae*, Guanlong wucaii, and *Tyrannosaurus rex* forelimbs. The overall structure of the Y. huali forelimb was sketched in computer software and muscle attachment sites were then added subsequently. Upon completion of this reconstruction, differences in the shape of bone and location of muscle attachments sites were noted. *Y. huali* appeared to share many similarities with more basal tyrannosauroids, such as G. wucaii, than more derived tyrannosaurs, such as *T. rex*. A clear trend in overall proportions of the bone and attachment areas were found. This in depth forelimb reconstruction of Y. huali allowed for a better understanding of the morphological changes of the forelimb in this family tree, meaning that it can now be used as a future reference in other similar analyses. Continued reconstructions of species like *Y. huali* could lead to more accurate estimates of morphological trends in the tyrannosaur clade and other neighboring clades as well.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Sara Burch

This presentation will also be presented at:

Society of Vertebrate Paleontology Annual Conference

217 • Proteins Under Pressure: Understanding Deep-Sea Adaptations

Samantha Canter, Rowan Considine

Abstract

Animals inhabit approximately 70% of Earth's total habitable space: the deep sea. At the deepest depths, hydrostatic pressure can reach up to 1,100 atm. Despite these extreme conditions, certain proteins have evolved adaptations that enable organisms to survive under high pressures. Protein folding and function can be particularly vulnerable to pressure-related stress which poses challenges for deep-sea life. This study aims to clone, express, and purify malate dehydrogenase (MDH) and lactate dehydrogenase (LDH) enzymes from fishes in the snailfish (Liparidae) and lumpsucker (Cyclopteridae) families. Using *Escherichia coli* as a host, we will culture cells containing plasmids with the target enzyme's genes in selective media, induce protein expression, and extract the target enzyme through cell lysis and affinity purification. Enzyme purity will be assessed via SDS-PAGE, and protein yield will be quantified using Bradford assays. High-pressure small-angle X-ray scattering (HP-BioSAXS) at the Cornell High Energy Synchrotron Source (CHESS) will allow real-time monitoring of protein conformational changes under varying pressures. Understanding protein stability in deep-sea fishes not only enhances our knowledge of life in extreme environments but also provides insights into the broader impacts of climate change. Ocean warming is driving marine organisms to inhabit deeper, colder waters, highlighting the need to explore how pressure affects their physiological processes. Studying pressure-induced effects on proteins can also benefit biotechnology and medicine by offering potential explanations for protein misfolding diseases caused by environmental stress.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Mackenzie Gerringer

Funding Sources

National Science Foundation Award Number 2407551

40 • Hearing Fresh(water) Voices: Exploring Pond Soundscapes in Western New York

Bryan Armpriest, Katelyn Stancliffe, Anna Tessier, Maya Tucci, Kristina Hannam

Abstract

Organisms can create sound for many different reasons, and as such, soundscapes (the collection of all sounds in a habitat) can tell us about the biotic activity in an environment based on the quantity and characteristics of sounds being produced. Freshwater soundscapes are generally understudied compared to terrestrial soundscapes. A wide variety of species are active and vocalize in freshwater environments, and studying patterns within these soundscapes can give insight on broader ecosystem health. We explored diel and seasonal patterns in a pond in Western NY by applying the acoustic diversity index (ADI) to underwater recordings from April and July 2024. Based on the index values, we located times in recordings from each day when acoustic activity changed significantly, and examined these times in RavenPro. We noted all sounds that were audible and visible on the spectrogram, as well as compared total sounds to total unique sounds with the index values. We will report our investigation of the efficacy of the index (which was originally designed for application to terrestrial soundscapes) in freshwater contexts. With our notes on unique sounds, we're developing a sound library that will further aid us in finding patterns in acoustic activity.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Kristina Hannam

This presentation will also be presented at:

North East Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

22 • The Effect of Diet on the Microbial Composition of the Mouse Gut

Makayla French, Hanna O'Reilly

Abstract

An organism's gut microbiome has been shown previously to be influenced by outside factors including diet. The effects of a ketogenic diet (KD), which is a low carbohydrate, high-fat diet, and a standard diet (SD) the gut microbial composition of mice was analyzed over a 44 day time course, in both wild type and mutant mice which displayed repetitive motor behaviors (RMB). The stool of the mouse was collected at various time points and microbial DNA was extracted via a Qiagen FecalPro Kit. The 16S DNA of the samples were then sequenced using Illumina technology. Taxonomic analysis was completed to determine any changes in the gut microbiome. Changes of the microbial composition were seen between the keto diet and the standard diet fed mice. No conclusion could be made in regard to differences of genotypes fed the keto diet. These results indicate diet does alter the microbial composition however further research is needed to elucidate any other potential mechanism influencing the gut microbiome.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Matthew Hatkoff

Funding Sources

Faculty Start Up Funds

181 • Investigating the Role of Flexible Loop Mutations in Malate Dehydrogenase: Structural and Kinetic Impacts on Enzyme Catalysis

Jay Glass, Andrew McFadden, Harshdeep Singh

Abstract

Malate dehydrogenase (MDH) plays an essential role in metabolism by catalyzing the reversible conversion of malate to oxaloacetate in the tricarboxylic acid cycle. This reaction, which also generates NADH, is critical to metabolic homeostasis across species. Although the general structure and function of MDH are well-characterized, the contribution of its conserved "flexible loop" region to substrate binding and catalysis remains insufficiently understood. In this project, we investigated how point mutations within this loop affect enzymatic activity in *Citrullus lanatus* (watermelon) glycosomal MDH (wgMDH), a model system with a well-characterized expression protocol and sequence. We introduced four site-directed mutations—R130A, R130E, R124K, and R124A—into the wgMDH gene via Q5-based mutagenesis in sister laboratories. These constructs were transformed into *E. coli* TOP10 cells for plasmid propagation and later into BL21(DE3) cells for expression and purification. Wild-type and mutant proteins were expressed under IPTG induction and purified by Ni-NTA chromatography. Protein levels were determined using the Bradford assay, and purity was assessed by SDS-PAGE. We are now optimizing protein expression and purification methods, aiming to perform kinetic assays with varied concentrations of key MDH reactants; which will further elucidate how flexible loop mutations affect overall enzymatic activity. By analyzing the effects of these mutations on catalytic efficiency and substrate interaction, we aim to deepen our understanding of MDH's structural dynamics. Our findings may inform the broader significance of loop-mediated regulation in enzymes and support future therapeutic exploration, particularly as MDH is indeed a potential target in parasitic diseases like African trypanosomiasis.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Biology

Faculty Sponsor

Varuni Jamburuthugoda

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

184 • Characterization of Cytosolic Malate Dehydrogenase of *Trypanosoma brucei*

Grace Sutherland, Varuni Jamburuthugoda, Ellis Bell

Abstract

The malate dehydrogenase (MDH) enzyme is found in a multitude of organisms functioning in the last step of the TCA cycle. MDH conducts the two-way reaction of malate and NAD+ to oxaloacetate and NADH (1). In humans, there are two major isoforms, cytosolic and mitochondrial. Deeper understanding of the MDH enzyme can expand treatments for parasitic diseases such as African Sleeping disease caused by *T.brucei* infection. Regulation of parasitic MDH gives the ability to limit the success of infection by inhibiting the protein's ability to function (2). Since MDH can be controlled through competitive inhibition, drug discovery for *T.brucei* is the next step in MDH research (2). The objective is to characterize cMDH from T.brucei through protein expression and purification alongside kinetic assays using watermelon glyoxysomal MDH (wgMDH) as a control. Kinetic analysis was performed to obtain quantitative kinetic variables, and citrate was tested as a potential inhibitor for *T.brucei* cMDH. We were able to successfully express and optimize the purification of T.brucei cMDH, indicated by a pure and distinct band in the range of 34-37 kDa in SDS-PAGE. Bradford assay quantification of protein concentration for *T.brucei* cMDH was 7.5mg/ml and 9.7mg/ml for wgMDH. The kinetic data for cMDH and wgMDH for differing OAA concentrations revealed a Km of 760.3µM and 48.89µM and Vmax values of 203.3 µM/min and 80.72 µM/min, respectively. The kinetic data for differing NADH concentrations revealed a Km of 51.88uM and 248uM and Vmax values of 0.7594uM/min and 204uM/min for cMDH and wgMDH.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Varuni Jamburuthugoda

This presentation will also be presented at:

American Society for Biochemistry and Molecular Biology

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award

207 • Mutations in the Reverse Transcriptase and Thumb of R2Bm Proteins and Their Impact on Nucleic Acid Binding

Michaela Cawley, Jordyn Farner, Meghan Geraghty

Abstract

Have you ever wondered what causes diseases like hemophilia, muscular dystrophy, or even cancer? The culprit may be lying in your genome: Transposable Elements (TEs) are genetic elements that replicate and move positions within a genome. Almost half of the human genome is comprised of TEs, with 17% being a specific type of TE called Long Interspersed Nuclear Elements (LINEs), which insert via Target Primed Reverse Transcription (TPRT). Studying these elements will lead to a greater understanding of both genome dynamics and genetic delivery tools. This study uses the R2 LINE element from *Bombyx mori* (R2Bm) which has an Open Reading Frame (ORF) that encodes Zinc-Finger (ZF), Myb, Reverse Transcriptase (RT), and a DNA endonuclease domain. We hypothesize that domain 6a is involved in binding to host DNA and the thumb in binding to both DNA and RNA. To test this hypothesis, conserved residues within these regions were mutated to alanine. Wild type and mutant R2Bm proteins were expressed in BL21 cells and purified using affinity chromatography. Purified proteins were run on SDS-PAGE gels and the amounts were quantified using a Bovine Serum Albumin (BSA) standard curve. We were able to successfully purify proteins from the domain 6a mutant and the wild type. For the nucleic acid binding experiments, 5' and 3' PBM RNA were successfully synthesized using in vitro transcription. While experiments are ongoing, we have determined that the K675 and K676 residues from domain 6a are involved in DNA binding.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Varuni Jamburuthugoda

This presentation will also be presented at:

American Society for Biochemistry and Molecular Biology Annual Conference 2025

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award, and National Science Foundation Building Research Capacity of New Faculty in Biology (NSF BRC-BIO)

128 • Differential Sensitivity of Laboratory *Escherichia coli* Strains to DNA Methylation Inhibitors and Antibacterial Compounds

Alexa Colon, Kevin Militello

Abstract

Our laboratory is studying cytosine DNA methylation in bacterial cells using *E. coli* as a model system. One approach to studying DNA methylation function is to block DNA methylation with inhibitors and determine the impact on cell growth and gene expression. Many of our recent experiments use a novel DNA methylation inhibitor, CM-272, that has been shown to block DNA methylation in eukaryotic cells. When using CM-272, we unexpectedly discovered that this compound has antibacterial properties. We observed that one laboratory strain, E. coli B, is very sensitive to CM-272, whereas *E. coli* K-12 is more resistant. To determine why there is a difference in sensitivity to CM-272, we used a panel

of antibacterial compounds, including antibiotics. Our data indicate that E. coli B is intrinsically sensitive to antibacterial compounds compared to *E. coli* K-12. Since E. coli B has increased sensitivity to CM-272, we can use this laboratory strain as a model to determine the mechanism by which CM-272 blocks bacterial growth, which is currently unknown.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

This presentation will also be presented at:

American Society for Biochemistry and Molecular Biology meeting

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

141 • The Novel DNA Methyltransferase Inhibitor CM-272 Inhibits Bacterial Growth via a DNA Methylation-Independent Mechanism

Madeleine Turton, Dana Schoeps, Taylor Stolberg, Abigail Funk, Alexa Colon, Clare Douglas, Kevin Militello

Abstract

The *Escherichia coli* genome contains 5-methylcytosine at CCWGG sites. In eukaryotes, the role of DNA methylation is well-defined and it impacts several processes including transcription regulation. However, the role of bacterial cytosine DNA methylation is less-well understood, with our laboratory's previous studies suggesting that cytosine DNA methylation is important for the bacterial stress response. In this study, we treated bacterial cells with cytosine DNA methylation inhibitors to elucidate the role of cytosine DNA methylation. The novel DNA methylation inhibitor and antitumor drug, CM-272, was used as it was previously successful in inducing DNA demethylation and disrupting cell cycle progression in cancer cells. Our data indicate that CM-272 does not block DNA methylation in E. coli. However, CM-272 blocks growth of *E. coli* and B. subtilis indicating that CM-272 possesses antimicrobial properties. CM-272 inhibited bacterial growth of strains with and without cytosine DNA methylation pathways indicating a novel, DNA methylation-independent mechanism of action. We are currently investigating the mechanism by which CM-272 inhibits bacterial growth. One hypothesis is that CM-272 will induce gene expression changes and characterizing these changes will elucidate the mechanism of action. Currently, we are growing *E. coli* in the absence and presence of CM-272 and using qRT-PCR to analyze expression of general stress response genes and SOS-response genes inducible by DNA damage. Overall, CM-272 has unexpected antimicrobial activity and characterizing the mechanism of action will provide valuable information about not only CM-272, but antimicrobial compounds as a whole.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

This presentation will also be presented at:

American Society for Biochemistry and Molecular Biology Conference 2025

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin '58 Research Award

61 • Leaf Litter Compost Coil Amendments in Created Wetlands May Drive Soil Microbial Succession Toward an Alternative Community Structure

Michelle Apodaca, Solangel Almonte

Abstract

The loss of wetlands due to human activity has led to increased efforts in their creation and restoration. This study evaluates a created freshwater wetland and a natural forested wetland at the Mill Seat Wetland Restoration Area in Riga, New York. Since 2019, these wetlands have been subjected to experimental conditions involving leaf litter compost as a soil amendment. Previous research suggests that compost amendments enhance plant diversity, floristic quality, and nutrient availability while supporting key biogeochemical processes. However, 16S rRNA amplicon sequencing indicates that the microbial community structure in amended wetlands may be diverging from that of reference wetlands. It remains unclear whether this shift is driven by environmental conditions created by compost addition or by the direct introduction of microbes from the compost itself. This study explores the role of leaf litter compost in shaping microbial community structure and influencing an alternative successional trajectory. We hypothesize that compost addition fosters a microbial community distinct from that of reference wetlands.

In the Fall of 2024, we resampled the microbial community using 16S rRNA amplicon sequencing to analyze shifts since 2020. The 2024 data revealed an enrichment of the phylum Bacillota, likely due to both the direct introduction of microbes from compost and the favorable conditions it creates for their growth. These findings suggest that compost amendments influence microbial community structure, potentially altering wetland succession. By tracking microbial composition over time, this study underscores the role of compost in shaping microbial community structure within created wetlands.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Wendy Owens Rios

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Other Source of Support, and faculty startup funds

71 • Beavers From Above: Identifying Keystone Habitats via Remote Sensing

Skyler Klimow, Aneesa Mirza

Abstract

Beavers (*Castor canadensis*) are a keystone species whose dam-building activities influence hydrology, geomorphology, biogeochemical cycles, and ecosystem productivity. Once widespread across North America, their populations have declined due to over-trapping and habitat loss. Recognizing and preserving beaver habitats is essential for supporting biodiversity and ecosystem resilience. This study aims to identify key features of beaver dams and associated ponds using publicly available satellite imagery and spatial analysis tools to support conservation efforts. We analyzed a subset of data from Collaborative Earth's Beaver Lab, focusing on 894 beaver dam locations in the Tug Hill region of Lewis County, New York. Using ArcGIS Pro and data from Web Soil Survey, we assessed soil characteristics commonly associated with dam sites. Preliminary findings suggest consistent soil patterns at dam sites, indicating possible predictive relationships between soil type and dam location. These insights highlight the role of beavers as natural engineers—enhancing water retention, sediment redistribution, and riparian habitat diversity. Our results demonstrate the utility of remote sensing and GIS tools for identifying beaver habitats at the landscape scale, informing watershed restoration and land management strategies. By better understanding where and how beavers build, we can more effectively prioritize conservation actions and integrate their ecological benefits into climate adaptation and ecosystem restoration plans with Collaborative Earth.

Subject Category
Science and Mathematics Categories: Geological Sciences
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Wendy Owens Rios

95 • Compost to Carbon: Boosting Wetland Restoration with Soil Amendments

Eliza Dawes, Pippa De Jong, Joelle Chang
Abstract
Wetlands provide vital ecosystem services, but widespread destruction has led to a significant loss in these services. In response, created wetlands have been implemented to offset these impacts, yet they often lack the ecological function of natural wetlands. One proposed method to improve restoration outcomes is the addition of soil amendments to accelerate succession. This study evaluates whether five years of leaf litter compost additions have improved soil characteristics in a created wetland. Soil samples were collected in Fall 2024 from the Mill Seat Wetland Restoration Area in Riga, NY, and analyzed for soil moisture (SM), soil organic matter (SOM), total carbon (TC), and total nitrogen (TN). SM and SOM were measured using drying ovens, with SOM quantified via loss-on-ignition (LOI). TC and TN were analyzed with a PerkinElmer Elemental Analyzer at the Rochester Institute of Technology's Aquatic Ecology Lab. Results show that natural reference wetlands had the highest levels of soil organic matter (SOM). However, SOM levels in the compost-amended wetland have increased over five years, indicating that the compost is promoting soil development. Total carbon (TC) and total nitrogen (TN) levels have also increased in the amended wetland, following the same upward trend as SOM. This comparison between reference wetlands and compost treated wetlands supports the objective that leaf litter compost improves soil quality and accelerates wetland succession. These findings suggest that soil amendments can be a valuable tool in improving the ecological function of restored wetlands and enhancing ecosystem services.
Subject Category
Science and Mathematics Categories: Biology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Wendy Owens Rios
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

194 • Wetland Restoration Using Leaf-litter Compost and Mosses: Using Shannon Diversity, Floristic Quality Analysis, & C:N Ratios to Determine Effectiveness

Talia Weidberg
Abstract
Natural wetlands provide ecosystem services such as carbon storage and biodiversity habitat. Anthropogenic impacts have degraded and destroyed wetlands, leading to loss of these services. Finding optimal restoration strategies is essential to recovering these ecosystem services and mitigating climate change. This study focuses on the change in the plant community over time; determining species composition, species diversity, and overall plant quality (FQA and C:N) in one created wetland under experimental conditions in which leaf-litter compost was added and one nearby natural forested wetland. The created wetland was divided into four transects (4 x 50 meters), two of which were kept under

experimental conditions, and two as controls, for five years. The study is part of a comprehensive ecosystem analysis of a newly created forested freshwater depressional wetland in the Finger Lakes Region of New York State. Previous results indicate leaf litter compost experimental transects had increased floristic quality and Shannon Diversity compared to control wetland. Recent data shows the naturally forested wetland and the compost transects showed an increase in Shannon diversity throughout the study period. Also assessed is the potential for mosses in restoration as indicators of ecosystem quality and to initiate succession. Initial data showed the highest C:N ratios for mosses in naturally forested wetland. Future research will determine whether the addition of leaf litter compost and mosses are effective strategies for wetland restoration to inform effective management decisions to drive ecosystem succession toward wetland mitigation.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Wendy Owens Rios

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

81 • Comparing Meiotic Drive in *Teleopsis whitei* to *Teleopsis dalmanni*

Ariana Cookinham

Abstract

Teleopsis whitei is a species of stalk-eyed fly that exhibits meiotic drive, which causes a gene to be inherited more than the expected 50% of the time. In T. whitei, sex ratio (SR) males pass down the X chromosome at least 90% of the time, leading to nearly all female offspring. In a similar species, *Teleopsis dalmanni,* genomic evidence for meiotic drive is only present on the X chromosome. However, prior studies suggest that the mechanism for drive in T. whitei is not confined to the X chromosome. To look for places in the genome that cause drive, 10 standard (ST) males and 10 SR males were sequenced with whole genome sequencing. A reference genome for *T. whitei* does not exist, so reads were mapped to the T. dalmanni reference genome. GATK was used to identify genetic variants from pooled data and assign genotypes to individuals. PCA was performed on the individual genotypes but there was no evidence of genetic clustering by SR status on any chromosome. Overlapping phylogenetic trees containing 3 million base pairs each were also generated with the pooled data using the program iqtree2. A monophyletic group for drive was found in a singular tree on the X chromosome. Compared to the autosomes, the X chromosome showed more genetic differentiation between SR and ST chromosomes when controlled for population level differentiation. This is what is seen in *T. dalmanni,* which suggests that drive in T. whitei may be more similar to *T. dalmanni* than previously thought.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Josephine Reinhardt

This presentation will also be presented at:

SUNY Undergraduate Research Conference

69 • The Role of Ano1 in Cell Proliferation

Kiara Barney, Eduardo Imbert, Charlotte Sanson, Tara Sweet

Abstract

Ano1 is a transmembrane protein that functions as a calcium-dependent chloride channel. Ano1 is heavily expressed in human gastrointestinal cells which can serve to guide peristalsis. Additionally, Ano1 expression is upregulated in gastrointestinal tumors and can be used to help diagnose gastrointestinal tumors. The elevated expression of Ano1 in tumors suggests it may promote cell proliferation and contribute to the development of cancers. As such, we hypothesized that Ano1 causes proliferation of cells. To test this hypothesis we are overexpressing Ano1 in CHO-k1 cells and using a CCK8 assay that measures cell metabolism as correlate of cell number. As part of the project, we will evaluate the effect of activating and inactivating mutations of Ano1 on the proliferation in cells.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology, Psychology

Faculty Sponsor

Tara Sweet

127 • Evaluating the Mechanosensitivity of TRPV3 Channels

Uzoma Ikeanusi, Matisse Domeck, Olivia Coons

Abstract

TRPV3 is a calcium channel that regulates temperature sensing, hearing, and blood pressure. It also plays a vital role in skin health, contributing to warmth perception, wound healing, and skin barrier formation. TRPV3 activation is critical for other sensations such as itching and may be overactive in skin conditions like eczema (atopic dermatitis). Given its prominent role in skin physiology and sensory perception, we hypothesize that the TRPV3 channels are mechanosensors. Mechanosensors are specialized proteins that help cells to detect and respond to physical stimuli such as pressure. To test our hypothesis, we use calcium influx assays to determine if the channel successfully opens, in response to a mechanical stimulation.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology; Psychology

Faculty Sponsor

Tara Sweet

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

210 • A Survey of the Fruiting Plants and Their Insect Parasites in the Forests and Orchards of Western New York 🌿

Nolan Miller, Thomas Back

Abstract

Ecological populations are regulated by many factors, and one such factor is negative pressure by parasites. However, non-indigenous species are able to expand their populations rapidly if their parasites or other enemies are absent. In my research, I am studying the interactions between fruiting plants and their insect parasites. Some insects lay their eggs on the surface of or into fruits , and the larval stage then eats the inside of the fruit as the larvae develop. In an agricultural region, such as in Western New York, cultivated plant species, invasive species, and native species of fruiting plants are distributed in a mosaic of habitats, and the contrast of these habitats may influence the susceptibility of fruiting plants to their insect parasites. I am focusing on fruiting plant species found in forest patches that border farmland, that may

share insect parasites with cultivated plant species. Position of a host plant within a forest may impact whether or not its fruits are parasitized. For plant species that share insect parasites with cultivated plant species, the further away a host plant is from the edge of the forest, the less likely it is that the parasites attacking it will also interact with cultivated plants. My research has implications for not only natural populations of plants, but also relevant to pest management on farms. Insect parasites are also a large economic problem for farmers who lose some of their crop to parasitism.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Suann Yang

This presentation will also be presented at:

Northeast Natural History Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

215 • Invasive Species Shift Forest Structure and Regeneration in The Michigan Big Woods

Katelyn Starego, Alexis Ochs

Abstract

Invasive species disrupt ecosystems by competing with native plants for nutrients, leading to changes in forest biodiversity. These invasive species often lead to competitive exclusion, in which the invasives outcompete the natives for dominance. Some native species, however, show different abilities for dealing with these types of stresses. We investigated the impacts of invasive species for the Michigan Big Woods plot in Pinckney, MI, where invasive species such as *Berberis thunbergii* (Japanese Barberry) and Elaeagnus umbellata (Autumn Olive) are flourishing. We explored the interactions between invasive species and native tree species, especially *Quercus rubra* (Red Oak), Quercus alba (White Oak), *Acer rubrum* (Red Maple), and Prunus serotina (Black Cherry). We used both mapping and nearest-neighbor analysis to examine the effects of invasive species across three censuses, spanning 11 years (2003, 2008, and 2014). Our results suggest that invasive species have a strong impact on native tree growth, especially oaks. In the Michigan Big Woods, the oak population consisted of mostly larger individuals, with a distribution that overlapped heavily with invasive plants. In areas with many invasive plants, fewer oaks grew, likely because they struggle to compete. Red maples regenerate better, likely due to better competition. Both red maples and black cherries thrive in low light, allowing them to grow despite forest invasion. This suggests that red maples and black cherry may be more adaptable. These findings show how spatial studies help us understand ecological changes and how invasive species affect forest structure and composition over time.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Suann Yang

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

DATA ANALYTICS

250 • Student-Athlete Mentorship: An Analysis of First-Year Athlete Adjustment

Hannah Olejniczak

Abstract

This study examined the Student-Athlete Mentor (SAM) program's effect on first-year athletes at SUNY Geneseo. Before attending each mentoring session, participants completed an online survey to self-report their adjustment in four areas: academic, athletic, emotional, and social. Four waves of data were collected in fall from two cohorts: 2023-2024 (n = 143) and 2024-2025 (n = 142). The study addressed two research questions. First, the association between the number of mentoring sessions attended by mentees and their end-of-semester GPA. A bivariate correlation illustrated a statistically significant positive association between students' fall GPA and the number of mentoring sessions attended (r (285) = .170, p <.01). Further analysis of individual cohorts showed that this correlation has a stronger association with the 2024-2025 cohort (r (142) =.256, p < .01). Second, how a student athlete's season affects their adjustment during their first semester. A one-way ANOVA was calculated evaluating target week-specific composite scores, which revealed Target Week #1 (F(4, 263) = 2.523, p = 0.041,η p 2 = 0.037) and Week #3 (F(4, 210) = 3.205,p = 0.014,η p 2 = 0.058) had a significant difference in mean-level adjustment scores. Post hoc tests indicated mean differences between Fall and Spring athletes at the first (MD = .4119) and third (MD = .5734) target weeks. Results from this investigation offer evidence for the positive impact of a peer-mentoring program on first-year student-athlete adjustment. The practical implications of this research, as well as additional analyses, limitations and future research, will be discussed.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department

Data Analytics

Faculty Sponsor

Nicholas Palumbo

SCHOOL OF BUSINESS

278 • Student Loans Have Done More Harm than Good 🌿 💡

Henry Abrefa

Abstract

Student loans, originally designed to expand educational access, have increasingly become a source of financial hardship, outweighing their intended benefits. Since their introduction, loans have aimed to remove economic barriers, but sharp tuition hikes, exemplified by SUNY Geneseo's costs rising from approximately $8,287 in 1999-2000 to $24,961 in 2023-2024, have intensified dependence on debt. The U.S. student loan debt crisis, surpassing $1.77 trillion, parallels the 2008 housing crash, characterized by easy credit, speculative optimism, and inadequate assessments of borrowers' repayment capacities. Unlike secured mortgages, student loans are typically unsecured and nondischargeable, trapping borrowers in long-term debt. Ultimately, student loans now hinder young adults' financial milestones such as homeownership and retirement savings, highlighting the urgent need to reform educational financing policies to prevent continued economic instability and personal

Subject Category

School of Business Categories: Data Analytics

Special Topic Information

The environment and/or sustainability

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

School of Business

Faculty Sponsor

Ken Pan

240 • A Green Field Investment Approach 🌿

Ivy Tha Zin

Abstract

This presentation explores international business expansion through Foreign Direct Investment (FDI), focusing on the advantages and challenges of Greenfield investment. By analyzing economic, legal, and cultural factors, we explore how companies can establish a strong market presence in a new country while aligning with sustainability and market entry strategies. Additionally, we assess key business objectives such as increasing market share, driving sales revenue, and strengthening competitive positioning in the global marketplace. To illustrate this approach, our project focuses on expanding a U.S.-based shopping mall business to South Korea, a nation with a thriving retail industry and a strong demand for modern shopping experiences. The objective is to develop a large-scale shopping mall from the ground up, using a Greenfield FDI strategy ensuring complete control over design, branding, and operations. This expansion will integrate international and local brands, dining, and entertainment, creating a destination for South Korean consumers as well as for tourists. This research further explores the implications of the expansion of supply chain management, financial forecasting, and sustainability initiatives, incorporating Environmental, Social, and Governance (ESG) principles.

Subject Category

School of Business Categories: Business Administration

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

School of Business

Faculty Sponsor

Michael Tenalio

CHEMISTRY AND BIOCHEMISTRY

11 • Biodiesel Production from Algal Lipids 🌿 💡

Annabel Rupp, Hannah Klein, Colden Grossman, Theodore Hovling, Zoe Hanna, Justin Johnson

Abstract

Fossil fuels are the largest contributors to global climate change, accounting for nearly 75% of total greenhouse gas emissions. A green energy solution can be found in autotrophs, which both sequester carbon in their growth and can be made into biodiesel. *Chlorella vulgaris* has been studied for lipid extraction and biodiesel production, both of which were made more efficient through means of culturing the algae in different growing conditions and by evaluating the biodiesel produced via IR spectroscopies. Growth of Chlorella vulgaris was observed in a variety of growing conditions with BG-11 and it was determined that oxygenating the water through means of a bubbler provided the most prolific growth of *Chlorella vulgaris*. Chlorella vulgaris phospholipids were then extracted from dead cells and successfully converted into biodiesel using a transesterification process. Finally, we compared our results from *Chlorella vulgaris* to the time tables of past Chlorella vulgaris experiments to find out the efficiency of the experiment and make it more sustainable and efficient for future experiments. With a decreased time needed to complete the experiment, the process is made more sustainable and paves the way for a greener future.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Ideas that Matter: AI (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor
Barnabas Gikonyo
This presentation will also be presented at:
American Chemical Society Spring 2025 conference, San Diego
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

12 • Second-Generation Biofuel Production from Rice Husks: Quantification of Glucose Utilizing Dinitrosalicylic Acid Analysis 🌿

Omar Mohamed, Dylan Herstek, Marshall Mclure
Abstract
For decades, dependence on fossil fuels has led to excessive greenhouse gas emissions, significantly advancing global warming. Greenhouse gases trap heat within Earth's atmosphere, ultimately preventing its escape into space and intensifying climate change. As concerns over climate change grow, the search for renewable energy alternatives has become increasingly more urgent. Biomass energy presents a promising and sustainable resolution. First-generation biofuels, derived from carb-rich crops (rice and potatoes), pose challenges due to their competition with food supplies, increasing prices globally. To address this issue, researchers have turned to second-generation biofuels, which utilize lignocellulosic materials-inedible structural parts of plants-as a renewable source of ethanol. Our study focuses on rice husks, one of the most abundant agricultural byproducts, to evaluate its potential as an efficient biofuel source. The biomass is pretreated with 1-butyl-3-methylimidazolium chloride to drive glucose extraction. The resulting glucose concentration is then measured using dinitrosalicylic acid analysis and glucose refractometry. The quantified glucose levels serve as an indicator of potential ethanol yield through fermentation, offering a viable and sustainable energy alternative.
Subject Category
Science and Mathematics Categories: Chemistry
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Chemistry and Biochemistry
Faculty Sponsor
Barnabas Gikonyo
This presentation will also be presented at:
SUNY Undergraduate Research Conference at Binghamton
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

46 • Synthesis and Analysis of a Ytterbium- and Thulium-Codoped Upconverting Dicalcium Phosphate Cement for Potential Use as a Bone Defect Filler

Milo Miller, Trinity Trojanowski
Abstract
We synthesized and characterized a ytterbium- and thulium-codoped dicalcium phosphate cement with potential therapeutic applications. Critical bone fractures pose a significant challenge to healthcare, often requiring invasive autografting due to a lack of effective alternatives. Calcium phosphate cements have arisen as a possible alternative, as they mimic the chemical composition of bones and promote healing. Among calcium phosphate cements, dicalcium phosphate cements, particularly monetite, are advantaged in resorption rate and osteoinductivity. The mechanical properties of monetite, however, pose an issue for its implementation as a bone replacement material. Recent research explores rare earth metal doping as a means to enhance the performance of calcium phosphate cements. To test this, we manufactured a ytterbium- and thulium-codoped dicalcium phosphate cement by preparing codoped β-tricalcium

phosphate and reacting it with monocalcium phosphate monohydrate in the presence of water. The synthesized codoped dicalcium phosphate cement was then characterized with fourier-transform infrared spectroscopy, x-ray diffraction, and scanning electron microscopy. The cement's final setting time was determined using a Vicat needle apparatus, while photoluminescence spectrometry was used to monitor upconversion luminescent emissions caused by ytterbium/thulium codoping. The optimization of lanthanide doped dicalcium phosphate cements may allow for a resorbable, injectable, and theragnosticly useful cement to enhance the fracture healing process.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Barnabas Gikonyo

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

112 • Pretreatment and Fiber Content Analysis of *Cannabis sativa L.* 🌿

Ariella Yonaty, Kaden Wheeler, Elizabeth Moriarity, Luke Genewick, Drew Allocco, Julia Geyer, Mackenzie Clute, Gannon Kelly, Michael DeVita, Elise Skirmont

Abstract

Hemp and marijuana, both subspecies of *Cannabis sativa L*. are often generalized into one group but are very different in chemical constituent levels of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). Hemp contains only 0.3% THC, compared to marijuana which contains 17.1% THC. This makes hemp a useful and safe consumer crop differing from its co-species, which is harvested for psychoactive and pharmaceutical reasons. Comparing hemp to other crops (corn, beets, etc.), this is one of the fastest growing plants and its refined products have incredible commercial value, including biofuels, biodegradable plastics, textiles, dietary supplements, paper, clothing, and much more. Additionally, Construction and manufacturing applications have been seen to include hemp to strengthen their composite products. Its status as a high yielding, sustainable, and environmentally friendly crop due to its various qualities gives it the potential to yield valuable raw materials for a large number of applications. The research evaluates the pretreatment of hemp along with the comparative analysis of the fiber content with the goal of determining the suitability and the potential use of ionic liquid-based pretreatment (1-Butyl-3-methylimidazolium chloride) for the breakdown of hemp lignocellulosic biomass as presented and discussed in the following sections.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Barnabas Gikonyo

This presentation will also be presented at:

State University of New York Undergraduate Research Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Student Research Assistantship

154 • Pretreatment and Fiber Content Analysis of *Cannabis sativa L.*

Julia Geyer, Drew Allocco, Elise Skermont, Kaden Wheeler

Abstract

Hemp and marijuana, both subspecies of *Cannabis sativa L.*, are often categorized into one group, but vary greatly in chemical constituent levels of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). Hemp consists of 0.3% THC, while marijuana contains 17.1% THC. As a result, hemp is a useful and safe consumer crop differing from its co-species, which is harvested for pharmaceutical and psychoactive purposes. Compared to other crops (corn, beets, etc.), hemp is one of the fastest-growing plants. Hemp's refined products have extensive commercial value, including biofuels, biodegradable plastics, textiles, dietary supplements, paper, clothing, and much more. Moreover, construction and manufacturing practices have been seen to include hemp to strengthen their composite products. Its status as a high-yielding, sustainable, and environmentally friendly crop gives it the potential to yield valuable raw materials for a large number of applications. This research evaluates the pretreatment of hemp along with the comparative analysis of the fiber content to investigate the suitability and the potential use of ionic liquid-based pretreatment (1-Ethyl-3-methylimidazolium chloride) for the breakdown of hemp lignocellulosic biomass as presented and discussed in the following sections.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Barnabas Gikonyo

103 • Targeting G-Quadruplex DNA using Groove Binding Compounds as an Anticancer Study

AnaSophia Lee, Gadeer Al-Abdely

Abstract

This research project investigates the effectiveness of groove binding compounds in binding to G-quadruplex DNA. Previous work by researchers within the field have shown that G-quadruplex (G4) DNA is a viable anticancer therapeutic target. Compounds that stabilize G4 have shown promising antitumor effects in preclinical cancer models. This project seeks to study drug-G4 interactions using fluorescence displacement assays and circular dichroism (CD) spectroscopy. Thioflavin-T (ThT) fluorescence displacement data have shown significant displacement of ThT bound to G4 DNA with certain groove binders, indicating G4 binding and stabilization. Circular dichroism spectroscopy displays the differential absorption of circular polarized light in the presence of chiral carbons such as those that exist in a sample of DNA. Each molecule will have a unique spectra, so when a drug is incrementally added to it, each sample generates a new spectra. We have observed noticeable shifts in the CD spectra when the groove binders of this study were added to G4 DNA. This indicates a change in structure and potential stability of the G4 DNA. Our research lab is currently interested in the drugs/groove binders: DAPI, Hoescht33258, distamycin, and berenil. Upon comparison of the results of CD spectroscopy and fluorescence displacement between telomeric and c-MYC G4 DNA, we have seen a difference in binding affinity and structural change that will be studied further. We plan to add other groove binders (e.g., rapamycin) to our toolbox for future comparisons and evaluations.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Ruel McKnight

This presentation will also be presented at:

Binghamton SUNY Undergraduate Research Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

175 • Investigating G Quadruplex Interactions in Oncogenes using Benzothiazoles, Benzoquinone, and Benzoxazoles

Hope Mirabito, Christopher Bulan

Abstract

G-quadruplex (G4) DNA has become of increasing interest to the scientific community as anticancer therapies. This intrigue is due mainly to the fact that G4 DNA represents viable targets to inhibit the telomerase enzyme and to block the expression of cancer promoting oncogenes such as c-MYC, RAS and BCL-2. This makes G4 DNA a viable target for anticancer therapeutics to treat previously "undruggable" genes targets. Inspired by natural products, researchers have synthesized benzothiazoles and benzoxazoles, heterocyclic compounds that have been shown to exhibit a broad range of anti-cancer, anti-pathogenic, anti-convulsant, anti-inflammatory, and anti-tubercular bioactivity. The benzothiazole core represents a versatile scaffold that has been found to be a useful framework for creating many stable derivatives. Recent advances in therapeutic screening have identified the benzothiazoles as viable candidates for a novel direction in chemotherapeutic treatment with potentially high selectivity and thus reduced deleterious side effects. In the current study, we have investigated the binding of several benzoquinone-benzothiazole derivatives to a c-MYC G4 DNA sequence. This study was accomplished using a combination of circular dichroism spectroscopy and fluorescence displacement assays. Our data suggests that the identity/nature of the substituent attached directly to the benzoquinone ring component determines the degree to which our compounds bind to the G4 DNA. We have observed that both the addition of an amino group, as well as the location of the amino group influence this interaction. Our findings have implications in the SAR (structure-activity-relationship) when exploring viable drug candidates that targets and inhibits the c-MYC oncogene.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Ruel McKnight

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

239 • CBD and THC Quantification within Cannabis Based Gummies

Mason Seipel, Nicole Gretzinger

Abstract

Liquid chromatography-mass spectrometry, a method in which solutions are separated into their individual components and identified through the mass-to-charge ratios, were used to analyze the CBD contents of two commercially available cannabis-containing gummies. Standards of cannabidiol (CBD), cannabinol (CBN), and tetrahydrocannabinol (THC) were used as a comparative measure to the gummies. These three chemicals are active ingredients within cannabis-based products. CBD is a chemical that soothes pain, CBN is used as an antioxidant, and THC is the psychoactive ingredient that causes the "high" sensation. Both gummies showed a far lower concentrations of CBD (some concentrations are diluted by a factor of 1000) when compared to the stated CBD content. The experiment used an improved standards method from previous years that provided an effective way of testing these types of quantification questions.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Jeffrey Peterson

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

260 • Synthesis of Cadmium Selenide Nanoplatelets and Characterization of their Optical Properties

Logan Sargent, Tim Atkins, Lincoln Katleski, Giana Cammisa

Abstract
Nanoplatelets (NPLs) are a type of semiconductor nanoparticle (NP) that exhibit unique electronic and optical properties compared to other types of NPs because of their two-dimensional nature. In this project, the synthesis of colloidal cadmium selenide NPLs was explored to controllably produce NPLs with variable thicknesses between 3-5 monolayers (MLs) and lateral dimensions between 10-50 nm. Varying both the reaction temperature and reagent concentrations were determined to be effective means to control the physical sizes of the NPLS. Their optical properties were analyzed using UV-Vis absorption, emission, and fluorescence lifetime spectroscopies. These methods allow for a level of control in NPL sizes and monolayer count and, by controlling these dimensions, we can make highly efficient laser dyes to provide easy-to-access and cheap laser dyes for research or commercial purposes.

Subject Category
Science and Mathematics Categories: Chemistry

Faculty Sponsor Department
Chemistry and Biochemistry

Faculty Sponsor
Jeffrey Peterson

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

122 • Developing a Portable System of Environmental DNA (eDNA) Surveillance to Monitor Fish Population Dynamics and Detect Invasive Species in Conesus Lake and The Philippine Seas 🌿

Brianna Westlake, Micah Ford, Seth Schoenthal, Anastasia Dejesus

Abstract
Climate change is an increasing threat to many ecosystems worldwide. Due to global warming, many species are under threat of extinction while others are forced into unusual patterns of migration. For example, the 'Round Scad' fish in the Philippines, which is a cheap source of protein in the diet of common citizens, is rapidly declining in both population and body size. In this project, we aim to develop a cheap, rapid, and sensitive method of monitoring the population dynamics of this fish and other marine species in the wild. Recently, a new method called environmental DNA (eDNA) metabarcoding has been developed as a cost-effective way to monitor species richness and the presence of invasive species in marine ecosystems simply by detecting DNA released by dead tissues shed from organisms in the environment. Combined with the recent development of Nanopore MinION, a portable and cheap 3rd generation DNA sequencing technology, we hope to build a portable system of eDNA surveillance that can be used in the field to monitor 'Round Scad' population dynamics, marine biodiversity, and invasive species in the Philippine Seas. As a 'proof of principle' study, we present our first attempt at examining the potential of the MinION technology to identify fish biodiversity in our local Conesus Lake. The technology holds promise of deployment in the Philippines for rapid, simple and cheaper means of monitoring marine biodiversity and informing sustainable management and conservation strategies of marine species facing global climate change stress.

Subject Category
Interdisciplinary and Other Categories: Other

Special Topic Information
The environment and/or sustainability

Faculty Sponsor Department
Chemistry and Biochemistry

Faculty Sponsor
Salvador Tarun

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

144 • Assessing the Use of Next Generation MinION Nanopore DNA Sequencing in Obtaining High Quality Data from Zebrafish to Inform Round Scad Fish Epigenetics under Global Climate Stress

Mark Moroz, Bryan DiLeo, Grace Carlucci, Berfin Gul

Abstract
The issue of climate change has been gaining increased awareness and attention globally in recent years. It is having various impacts on ecosystems all over the world, causing many species to become environmentally stressed. Epigenetics is a concept that is being studied more prevalently regarding climate changes. Due to the changing environment, stress-induced heritable traits may appear without changes to the genomic code, known as epigenetic alterations. One such epigenetic alteration is DNA methylation, which occurs in cellular responses to environmental stress. One major source of affordable protein in the Philippines comes from the wild Round Scad fish, which has recently been facing rapid decline in both its population and body size. The purpose of our study is to explore the patterns of DNA methylation in wild Round Scad to determine whether these changes are associated with an epigenetic response to global climate stress. Samples of Round Scad DNA were collected and isolated from the Philippines. Using nanopore MinION, a portable third-generation DNA sequencing technology, we are able to obtain high quality DNA sequences required for detection of methylation sites. However, the DNA sequences are difficult to obtain and are short, needing improvement. To facilitate our analysis, we are sequencing the genome of the Zebrafish for comparison. Here, we shall report on the initial data collected and our process navigating this technology. We anticipate that long term findings from this project will provide critical information to manage wild Round Scad and other marine fish facing similar environmental stressors.

Subject Category
Science and Mathematics Categories: Chemistry

Special Topic Information
The environment and/or sustainability

Faculty Sponsor Department
Chemistry and Biochemistry

Faculty Sponsor
Salvador Tarun

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

249 • Developing a Portable DNA Surveillance System to Monitor Diet of Fish Species Impacted by Climate Change

Jackson Boslet, Sofiya Yurashova, Jillian Cynar, Katherine Buckley

Abstract
Recently, in the Sulu Sea region, surrounding the Palawan islands in the Philippines, climate change has tremendously impacted marine ecosystems resulting in record high temperatures and an increase in ocean acidity. Many of the species affected have been forced to adapt. We hypothesize that one of the critical ways might involve a change in diet, perhaps due to the impact of climate change on their food source. Hence, a change in fish diet could influence how a marine ecosystem's biodiversity can be sustained. An emerging method of researching marine biodiversity employs DNA nanopore metabarcoding, which uses short sequences of DNA to identify multiple species by PCR in a mixture of DNA samples extracted from the environment called eDNA surveillance. This study aims to find a more cost-effective approach to evaluating the abundance of marine life using a portable Nanopore MINion. This third-generation DNA sequencing technology can be brought into the field for almost immediate eDNA surveillance. Here, we conduct an initial 'proof of principle' study by feeding collected Zebrafish a specific diet consisting of a diverse range of typical food

such as bacteria, phytoplanktons, and zooplanktons. We are identifying a set of primers designed to broadly target species-specific DNA in the fish diet, performing PCR on the dissected intestinal DNA of our fish, and sequencing PCR products using MINion. Information gleaned will serve as a guide for what can be used when performing fish diet DNA surveillance in the Philippine Islands to monitor ecosystem resiliency of fish species.

Subject Category

Science and Mathematics Categories: Biochemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Salvador Tarun

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

227 • Synthesis and Evaluation of 2,2'-Bipyridine Ruthenium-Arene Complexes to Modulation the Aggregation of the Amyloid-β Peptide

Jacob Smith

Abstract

Agents that target the amyloid-β (Aβ) peptide associated with Alzheimer's disease have seen renewed interest following the clinical success of antibody therapeutics. Small molecules, specifically metal-based complexes, are excellent candidates for advancement, given their relative ease of preparation and modular scaffold. Herein, several ruthenium–arene complexes containing 2,2-bipyridine (bpy) ligands were prepared and evaluated for their respective ability to modulate the aggregation of Aβ. This was carried out using the three sequential methods of thioflavin T (ThT) fluorescence, dynamic ligand scattering (DLS), and transmission electron microscopy (TEM). Overall, it was observed that RuBA, the complex with a 4,4-diamino-2,2-bipyridine ligand, had the greatest impact on Aβ aggregation. Further evaluation of the complexes was performed to determine their relative affinity for serum albumin and biocompatibility towards two neuronal cell lines. Ultimately, RuBA outperformed the other Ru complexes, where the structure–activity relationship codified the importance of the amino groups on the bpy for anti-Aβ activity.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Michael Webb

This presentation will also be presented at:

ACS Spring 2025 in San Diego

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

233 • Synthesis and Evaluation of 1,10-Phenanthroline Ruthenium-Arene Complexes to Modulate the Aggregation of the Amyloid-β Peptide

Maria Loughlin, Emma Grabowski, Ryan Hacker, Jacob Smith

Abstract

Alzheimer's Disease (AD) is a neurological disorder characterized by a buildup of the amyloid beta (Aβ) peptide as aggregate species in the brain. Recent advances using antibody based treatments which target Aβ have seen clinical success, achieving FDA approval. However, they come at a significant cost, ranging from $20,000-40,000 a year. Ruthenium-based therapeutics are promising alternatives, as they have shown an ability to modulate the aggregation of

Aβ in solution and prevent its cytotoxicity. Despite their initial success, significant questions regarding the affinity of the complexes for Aβ relative to endogenous proteins remain unknown. Therefore, we have synthesized a series of phenanthroline ruthenium-based complexes and assessed their respective ability to modulate Aβ aggregation while also evaluating their association with the serum protein albumin (HSA). The impact on Aβ aggregation for the complexes was assessed using thioflavin T fluorescence, dynamic light scattering, and transmission electron microscopy. Alternatively, the affinity of the complexes for HSA was determined using fluorescence binding assays. The results of these experiments will be discussed, where structure-activity relationships will be established.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Michael Webb

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

230 • Examination of Gold Colloid Aggregate Formations within the Hippocampus of the Alzheimer's Disease Rat

Victoria Brzezinski, Kazushige Yokoyama

Abstract

An entire section of the hippocampus of the Long Evans Cohen's Alzheimer's disease, AD(+), rat model was examined utilizing the Surface Enhanced Raman Scattering (SERS) spectrum to study gold aggregates. An examination of normal rat, AD(-), tissues was also performed as a comparison and negative control. In the AD(+) rat hippocampal tissues, a limited quantity of larger gold colloid aggregates were identified. The SERS spectrum of each section in the hippocampus exhibited nearly identical spectral patterns in the region of Amide I, II, and III bands, as well as distinct spectral patterns in the 300 cm–1 and 1250 cm–1 region that previously could only be observed in AD(+) rat tissue. The amyloid fibril with a β-sheet conformation, formerly identified and reported in the AD mouse and human brain tissues, was observed to form with gold colloid aggregates. Gold colloid aggregates were found in the hippocampus brain section of AD(+) rats, with unique morphological characteristics when compared to hippocampus tissues from AD(-) rats. While there were no clear differences in spectral patterns to distinguish between sections of the hippocampus, the current study provided a definitive characterization to differentiate the hippocampal tissues in AD(+) and AD(-) rats.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

American Chemical Society Conference

Funding Sources

Other External Grant, TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin '58 Research Award, and National Science Foundation award 2117780

231 • Investigation of ACE 2 on SARS-CoV-2 Spike Protein Coated Gold Colloids

Mitsuki Tabei, Nathan Boboeski

Abstract

The RBD (Receptor Binding Domain) of spike protein (s-protein) in SARS-CoV-2 virus is highly associated with priming the viral infection, where N-terminal helices and its adjacent loop of ACE2 (Angiotensin Converting Enzyme 2) is bound to s-

protein. We investigated a protein corona formation of s-protein over gold nano-colloids and reversible aggregation process as a function of pH change between acidic condition (i.e., pH ~3) and basic condition (i.e., pH ~11). The s-protein exhibited signs of aggregation through the unfolded conformation of RBD segments at the acidic condition. As the pH was repeatedly cycled between acidic and basic conditions, the aggregation was found to be quasi-reversible. The addition of ACE2 to the s-protein coated gold colloids showed two time-dependent reversible aggregation phenomena. The SERS (Surface Enhanced Raman Scattering) imaging was attempted to study s-protein adsorbed over nano-gold colloids under the presence of ACE2, and clear gold aggregates formations were observed. A significant number of those aggregates exhibited the sections which possessed repetitive localized motion at pH ~3. A preliminary study indicated there are three major Raman shifts: (1) ~1531 cm –1 : CH 2 deformation and COO – stretching of Tryptophan,(2) ~1585 cm –1 : C=C bending of phenylalanine , aromatic ring vibration, NH deformation, and (3) 2130 cm –1 : -C≡C-stretching of alkyne. The more detailed investigation of and aggregation process of s-protein coated gold and the role of ACE2 is in progress.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

2025 Rochester ACS Collegiate Research Symposium

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), and National Science Foundation Award Number 2117780

236 • Characterization of Reversible Aggregation of Amyloid beta 1-40 Coated Gold Nano-Particles

Christopher Kolilias, Victoria Brzezinski

Abstract

The gold colloid coated with $A\beta_{1\text{-}40}$ was characterized by using the Raman imaging technique. Through the observed pH-dependent shift of the SPR (Surface Plasmon Radiance) band, it was determined that gold colloid aggregates were formed under acidic conditions.. Remarkably, $A\beta_{1\text{-}40}$ coated 20 nm gold supported quasi-reversible self-assembly of the aggregates as the pH was alternated between pH 4 and pH 10. The morphology was distinctly observable between two different conditions. Nevertheless, the SERS (Surface Enhanced Raman Scattering) spectrum presented minor differences. An additional analysis displayed the contrast in spectral density in the regions of 250 cm^{-1} and 1750 cm^{-1}. The mode analysis distinguished in the reversible aggregation, the formation of aggregates with the important influence of the benzene ring components of Tyrosine and Phenylalanine. The disassembling of the aggregates, however, was intensified through the participation of Histidine, Glutamine, Methionine, and Aspartic acid.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

(1) American Chemical Society National Meeting, Spring 2025 at San Diego (2) 2025 Rochester American Chemical Society Collegiate Research Symposium

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award, National Science Foundation Award Number 2117780, and SUNY Geneseo Chemistry Department Alumni Summer Research Fellowship (Gerry Rhodes and Kenneth Lipkowitz Fellowship)

237 • Investigation of Cytoskeletal Protein Reconstruction of Vulvar Cancer with Surface-Enhanced Raman Spectroscopy

Nicole Mathewson

Abstract

The A431 vulvar cancer cell line undergoes a defined cellular transformation when treated with the corticosteroid clobetasol, marked by changes in cytoskeletal protein biomarkers indicative of epithelial-mesenchymal transition (EMT). Replicated experiments demonstrate that this transformation provides a valuable model for studying protein interactions from a chemical perspective. To quantify these interactions, we employed surface-enhanced Raman spectroscopy (SERS) combined with gold nanoparticles, enhancing the detection sensitivity of cytoskeletal protein changes. By tracking protein dynamics and surface composition throughout the cellular transformation, we aim to elucidate the mechanisms underlying EMT. We have completed the data collection of A431 and A431D cells. Spectral analysis provided insights into the sequence of protein gains and losses, and comparison with established data revealed structural information related to protein folding, binding, and interactions. In addition, a three-dimensional SERS imaging technique was used to characterize alterations in the cytoskeletal proteins of individual cells. We conclude that a subtle differences were found in spectral features in the region between 250 cm – 1 and 1250 cm – 1 , reflecting the presence or absence of vimentin or cytokeratins.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

American Chemical Society Spring 2025

Funding Sources

Other External Grant, TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award, and National Science Foundation Award Number 2117780

246 • Simulation of Metal–Air Surface Plasmon Polariton Propagation

Mitsuki Tabei

Abstract

Electromagnetic waves that are confined to propagate along a surface, such as surface plasmon polaritons (SPPs), are of great research interest due to their potential applications in nano-scale manipulation of light. The term plasmon refers to the collective oscillation of charges in a metal, whereas the term polariton generally refers to a quasi-particle that is the result of the coupling between a photon with a polar excitation in a material. Thus, it can be said that SPPs are the result of coupling of surface plasmons and light. By utilizing the COMSOL-Multiphysics program, we attempt to visualize the propagation of SPP. Here, we aim to characterize electromagnetic waves confined to a planar surface, propagating tangentially to the surface with exponentially decaying fields in the perpendicular direction. Its wavelength is often smaller than the free space wavelength at the same frequency. Thus, this type of wave provides promise for nano-scale control and manipulation of photons, which is desirable in many applications, ranging from optical communication and information processing to solar energy harvesting and digital displays.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry and Biochemistry

Faculty Sponsor

Kazushige Yokoyama

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

247 • Characterization of Localized Surface Plasmon

Mitsuki Tabei

Abstract
Localized surface plasmon (LSP) are non-propagating excitations of the conduction electrons of metallic nano-structures coupled to the electromagnetic field. The physics of localized surface plasmon is characterized by first considering the interaction of metal nano-particles with an electromagnetic wave in order to arrive at the resonance condition. The damping process, studies of plasmon resonances in particles of a variety of different shapes and sizes, and the effects of interactions between particles in ensembles are analyzed. In addition, other important nano-structures apart from solid particles that support localized plasmons are dielectric inclusions in metal bodies or surfaces, and nano-shells. Here, we attempt to characterize the LSP by mainly adopting the Mie Theory approach.

Subject Category
Science and Mathematics Categories: Chemistry

Faculty Sponsor Department
Chemistry and Biochemistry

Faculty Sponsor
Kazushige Yokoyama

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

OFFICE OF DIVERSITY AND EQUITY

257 • Diversity and Inclusion Community Education (DICE) Program: A Look into Geneseo's DEI Involvement and Recent Work

Cleopatra Fay

Abstract
The DICE program has conducted numerous facilitated dialogues with campus organizations about topics such as Race, Class, Gender, and Intersectionality. Each dialogue has been student run, and between students in each organization. Here I will present the impact and results of these facilitations, this internship, and show the potential future of this program on the Geneseo Campus.

Subject Category
Social Science Categories: Communication

Faculty Sponsor Department
Office of Diversity and Equity

Faculty Sponsor
Ashley Watson

Funding Sources
The Anti-Hate and Bias Sector of the Empire State Service Corps Student Intern Grant

SCHOOL OF EDUCATION

52 • The Benefits of High Quality and Diverse Media in the Classroom

Chloe Hirt

Abstract
Over the past few years, especially thanks to the covid-19 pandemic and distance learning, many people are starting to question the media that their children should be allowed to consume as they now had a better sense of what was going on in their child’s classrooms. Many parents have made statements about how they are against various forms of media

being used in classes, including some that focus on diversity. As parents push for this type of media to be pulled, it is important to take a look at the benefits of not just high quality media, but also diverse media in early childhood education. This presentation will focus on the value and importance of high quality media for young children, including the results of a media based preschool program in the Middle East, some examples of the potential benefits, and ways for teachers to properly implement this kind of media in the classroom. There will also be a focus on the importance of diverse media for young children, with special attention regarding racial, disability, and LGBTQIA+ representation in children's programming and books, and how this representation can greatly impact young children.

Subject Category

School of Education Categories: Early Childhood/Childhood Education

Faculty Sponsor Department

School of Education

Faculty Sponsor

Nicole Morrissey

GEOGRAPHY AND SUSTAINABILITY STUDIES

51 • Good Food Buffalo Coalition: Key findings within Community Action Planning

Annika Hurley

Abstract

The Good Food Buffalo Coalition is dedicated to bringing the Good Food Purchasing Program to Western New York. The coalition aims to shift food procurement practices in Buffalo Public Schools by focusing on sustainability, community values, and nutritional equity. By moving away from the lowest bidder system, the coalition seeks to prioritize nutrition, workers' rights, sustainability, animal welfare, and local economies. We want Buffalo Public Schools to provide food in a way that supports these values and goals. The coalition hosts listening sessions to gather opinions and ideas to develop an action plan guiding the coalition's work moving forward. To synthesize key components brought forth by participants, we analyze and transcribe the audio recordings, pictures, and the physical data gathered from the sessions. Community members can directly support the implementation of their own key concerns, ideas, and potential solutions into the school food system through this process. Key findings from this research show community members' emphasis on the nutritional quality of school food and knowing what is being fed to their children. Community members also support the implementation of kitchens in schools, greater staff training, and the involvement of parents, teachers, and nutritionists in food-related decisions. All of these findings help to show us where to direct our work and support. Through these initiatives, the coalition aims to create lasting, community-driven change in how food is provided, ensuring that it supports the broader goals of health, sustainability, and community well-being.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jessica Gilbert-Overland

54 • Language and Disability Justice Action Plan for the Good Food Buffalo Coalition

Daniel Moore

Abstract

In governments and social justice work alike, the need for accessibility for those who speak other languages and those with differing abilities is abundantly clear. Even though there is no official language in the United States, English has dominated the dialogue. Currently, moreover, meetings show little regard to those with differing abilities then the

general populace. How best can social justice organizations better accommodate everyone to help limit if not outright eliminate language and ability barriers? In my inquiry, I helped the Good Food Buffalo Coalition, an organization that is seeking to implement a values-based food purchasing program for public schools in Buffalo, tackle these barriers. Through a mix of scholarly research of case studies, dissertations, and government and social movement action plans, I have created a plan for the Coalition to combat language and disability injustices so that everyone within the organization can equitably participate.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jessica Gilbert-Overland

163 • New York State Agriculture and Dairy Policy

Delaney Livermore

Abstract

Due to barriers set in place by various state agriculture policies, small dairy farmers in New York have a hard time making a profit, and staying afloat in the industry. As a result, it can be difficult to make dairy farming a career as a smaller dairy farmer, as the labor intensive work doesn't have as many benefits as other careers do in today's society. However, the dairy industry isn't growing, it's just becoming more capitalized. With the rise of corporate farming, and the decrease in small/local farming, there is less diversity in the industry. This leads to a multitude of issues within the dairy policy realm, like a lack of competition in the industry and price gouging, which leads to structural issues and unfair advantages in some instances. Researching these policies and identifying issues helps promote changes in the industry to help farmers. My research aims to answer the question "what are dairy policies that create barriers within the dairy industry?" I have analyzed the intentions behind dairy policies in our state, emphasizing issues within the policy that may be unintentionally harming the industry and markets as a result; specifically price gouging, labor laws, grants for "small farms", sustainability practices, and dairy industry promotion/advertisement, as these are most harmful today. Looking forward, I am sending out surveys and conducting interviews with small scale dairy farmers throughout the state, trying to grasp farmers opinions on these policies, and highlight what changes can be made to help them thrive.

Subject Category

Social Science Categories: Sustainability Studies

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jessica Gilbert-Overland

Funding Sources

Student Ambassador Award

166 • Building a Youth Fellows Research Program for the Good Food Buffalo Coalition 🌿

EmmaGrace Humbert

Abstract

What might the Good Food Buffalo Coalition's (GFCB) key components of a youth fellows program look like? The GFCB has firmly grounded their work in their principles of prioritizing people's access to "healthy food and food that values workers, animals, and the environment, while lifting local communities out of poverty". GFCB is currently working to build out a youth research fellows' program to secure the inclusion of the most impacted communities in the research processes so that there isn't a need for outside folk to come and do it. Youth fellows' programs have several benefits to the community, those involved, and the quality of research conducted. I have conducted a cross examination and

analysis of existing programs and their processes in order to better understand the inner workings of such programs, as well as, starting to establish a foundation for the GFCB youth fellows. Several organizations were found throughout my research with successful youth fellows' programs. The Massachusetts Project (MAP) and Hope for Youth (HYPE) are both great examples of organizations that have successfully run school-based programs for over a decade now. These programs have provided necessary insight on structure and key components of a youth fellows program. A program like this would benefit the GFCB greatly, by not only providing a chance to engage with students and create opportunities for development but by further grounding their foundation and research on the insight, analysis, and leadership of those most impacted.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jessica Gilbert-Overland

7 • Heritage Lost: Geographies of National Register Property Delisting and Vulnerability (1970-2024)

Claire Rahuba, David Robertson

Abstract

The National Parks Service's National Register of Historic Places (NRHP) program supports public and private efforts to identify, evaluate, and protect America's historic and archaeological resources. Containing approximately 100,000 properties, the NRHP is comprised of properties deemed worthy of preservation. Although the National Register has significantly protected the nation's cultural heritage, listing to the NRHP does not guarantee property protection in perpetuity. In fact, since 1970, more than 2400 properties have been delisted from the NRHP. These properties have been removed from the National Register for a variety of reasons ranging from property destruction due to natural hazards such as fire, to human modifications destroying a property's historical integrity. Utilizing NRHP property data, GIS and statistical methods, this poster spatially analyzes the geography of delisted National Register properties. Revealed are spatial patterns of property delisting as well as trends in property types (e.g. buildings, structures, districts etc.) and historical significance (e.g. architecture, industry, social history etc.).

Subject Category

Social Science Categories: Geography

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

David Robertson

This presentation will also be presented at:

Annual Meeting of the American Association of Geographers

36 • The Bronx Bus Ride: Examining Bus Quality, Accessibility and Fare Evasion

Abigail Taveras

Abstract

New York City's public transportation system, vital for the mobility and livelihood of its residents, may contribute to social and economic inequities through disparities in service quality, accessibility, and fare enforcement. In the Bronx, disparities in transit experience may heighten existing social inequalities. The relationship between public transit and social equity is well-established, with research highlighting that access to efficient and reliable public transportation is essential for social mobility, economic opportunity, and overall quality of life. Transit inequities, as urban theorists like Edward Soja and scholars of spatial justice have argued, reinforce existing social and economic inequalities by limiting

residents' access to critical resources such as employment, education, and healthcare. Theoretical perspectives from criminology, such as labeling theory, have examined how increased policing of fare evasion disproportionately targets low-income individuals, framing fare evasion as a criminal offense rather than addressing underlying economic hardship. This study aims to fill gaps in knowledge by analyzing the correlation between socioeconomic status and the quality and accessibility of public transit services across Bronx neighborhoods. Research methods include participant observation to examine fare evasion, and commuters anonymous surveys regarding bus transit/bus stop quality/accessibility and fare evasion. I argue that lower-income neighborhoods in NYC, specifically the Bronx, experience poorer transit service quality (e.g., more frequent delays, older buses, fewer accessibility features) and higher fare evasion rates than higher-income communities, likely due to economic hardship rather than disregard for transit rules. I will also explore solutions to these inequities.

Subject Category

Interdisciplinary and Other Categories: Urban Studies

Special Topic Information

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jennifer Rogalsky

This presentation will also be presented at:

2025 American Association of Geographers Annual Meeting

Funding Sources

McNair Scholars Program Support, TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

222 • A Land Use History of the Hemlock-Canadice State Forest through GIS

Meghan Murphy

Abstract

This project is a comprehensive land-use history of the Hemlock-Canadice State Forest through a series of maps and information compiled with GIS technology. The use of LiDAR-derived digital elevation models was central, enabling the mapping of historical features through visible differences in elevation. When combined with the use of georeferenced historical maps, the location and shape of still-present features indicating historical activity were identified and mapped. These include the foundations of cottages, old roads, skid trails from logging, and plow lines, which remain even after over 100 years.

Subject Category

Interdisciplinary and Other Categories: Environmental Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Stephen Tulowiecki

GEOLOGICAL, ENVIRONMENTAL, AND PLANETARY SCIENCES

27 • Mineralogical and Chemical Analysis of Slag from Port Leyden, NY

Kaylee Rains

Abstract

From 1864 to 1883, the Gere Iron and Mining Company smelted iron ore in the village of Port Leyden, NY. Today, all that is left at the site are the remains of an ore shaft, furnaces, and slag (a byproduct of the smelting process). Multiple

slag samples were collected in 2022 and studied to determine their mineral makeup and variation across samples. One sample of particular interest was a dark gray, vesicular, and glassy piece of slag. The sample's cut face revealed the percentage of glass varied across the sample, ranging from 100% in glass-dominant regions to 49.2% in more crystalline areas. X-Ray Diffraction (XRD) identified wollastonite and pseudowollastonite ($CaSiO_3$) as the slag's dominant minerals along with glass. Scanning electron microscopy (SEM) analysis revealed the sample's overall chemistry was dominated by Si and Ca with smaller amounts of Al, Mg, Fe, K, and Mn. An analysis of the sample's chemistry in ~1mm increments across the sample showed that the 100% glassy region had a uniform chemistry. The crystalline portion's chemistry was more varied. In the glassy region, the Ca/Si ratio ranged from 0.619-0.738 whereas this ratio ranged from 0.569-0.804 in the crystalline portion. The reason for this lack of chemical uniformity in the crystalline region was because each analysis in this region measured variable amounts of wollastonite and glass, while the glassy region contained only glass. On average, the crystalline region contained 49.2% glass, 49.2% crystal, and 1.6% iron prill (droplet).

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Dori Farthing

28 • Chemistry of Colored Glass in Slag from Ironville, NY

Sierra Madison

Abstract

In Ironville, New York, smelting for iron was performed from 1828 to 1886 and left behind piles of waste called slag. Ironville is located in the Adirondack Mountains, west of the High Peaks Wilderness. Slag is the leftover byproduct of smelting for a specific ore, and the slag in Ironville is predominantly glassy and sometimes vesicular. Ironville slag comes in a variety of blues, purples, white, and greens, and some are swirled with two or more distinct colors. Five slag samples were selected because of their singular color, and one was selected due to its pattern of dark and light blue bands. Small fragments of these samples were broken, embedded into epoxy, and polished to a smooth surface for study with the Scanning Electron Microscope (SEM). Chemical data for each sample was obtained using energy dispersive spectrometry (EDS). All samples, regardless of color, contained O, Si, Ca, Mg, Al, Fe, Na, and K (listed from high concentration to low). There were no significant differences in the chemistry of all the samples, suggesting that color differences are more due to trace elements rather than major elements. In the banded sample, small changes between Ca and Si content do seem to be at play.

Subject Category

Science and Mathematics Categories: Geochemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Dori Farthing

60 • Mineralogical Analysis of Crystals in Malaysian Tin Slag and Buffalo Region Slag

Florence Denz

Abstract

Two slag samples, one from Malaysia and one from Buffalo, NY have been studied to better understand their mineralogy and chemistry. Slag is a waste produced when natural ores are smelted to make a pure metal. Slag sample #1 is a Malaysian tin slag. The particular sample of slag has been pelletized, which means that when it was in its molten state, it was steamed into water which turned the slag into small 5 mm-sized particles . Slag #1 is a shiny medium grey and most of the pellets contain between 80-100% glass. XRD of particles indicate that the dominant material is glass, use of the

SEM will help look at the sample in more detail. Slag #2 comes from the Buffalo, NY region. When collected, its smelting origin was uncertain. The Buffalo area was home to a major iron smelter, but other metals such as Tantalum have also been produced in the region. Slag #2 was collected within 10 miles of the former Bethlehem Steel Company, which was once the largest steel producer in the world. Slag #2 is not a pelletized slag, and was poured onto a waste pile after smelting. It is a mix of rusty weather material and metallic chunks no larger than a centimeter. It is more crystalline compared to slag #1. XRD of the more crystalline samples indicate that the dominant minerals are Magnesium Ferrite, Goethite, and Quarts.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Dori Farthing

39 • Designing an Educational Lab: Using Dry Ice to Demonstrate Carbon Dioxide as a Greenhouse Gas

Sean McGuire

Abstract

This project aimed to create a laboratory experiment for educational use to show that carbon dioxide in an atmosphere acts as a greenhouse gas. An experiment of this kind was first done in 1856 by Eunice Foote providing evidence that Carbon Dioxide could cause warming in the atmosphere. Initially, four tubes had increasing amounts of Dry Ice placed in them with a fifth tube left with no dry ice as a control. The hypothesis was that as the amount of dry ice in each tube increased, the temperature should increase faster based on there being higher concentrations of CO2 released in the tubes. A second attempt was made in which two had dark colored minerals were added to help with the absorption of energy from the sun. A third iteration of the experiment was attempted using two Tupperware containers with the bottoms blacked out, one of which had dry ice placed in warm water and the other was sealed with just the normal atmosphere, and both were placed under identical grow lights. The temperatures gathered in the three iterations were inconclusive on showing Carbon Dioxide is a greenhouse gas. Future attempts to reproduce the greenhouse gas effect should explore how to better seal the containers used to ensure none of the Carbon Dioxide concentration leaks out, making sure the conditions in each container have completely equal conditions, and exploring the effect of using a grow light versus actual sunlight.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Scott Giorgis

43 • Error Analysis of Depth to Bedrock Determinations from Gravity Surveys Across the Genesee Valley, Livingston County, New York

Griffin Merkling, Scott Giorgis

Abstract

Carved by glaciers and molded by modern fluvial forces, the Genesee Valley in Livingston County, New York offers a scenic environment for geophysical surveying to determine the elevation of Devonian aged bedrock below surficial

Quaternary deposits. Surveying and calculations were performed with a Worden Gravimeter, a Bad Elf Flex® Mini, and the software programs QGIS, Microsoft's Copilot and Excel, and Python v3.12. Portions of Fowlerville Road, U.S. Route 20A, and Mount Morris Geneseo Road were chosen because they are oriented nearly perpendicular to the Genesee Valley. Forward modeling methods to determine the bedrock elevation were conducted in Python as well as in Excel using the Solver add-in, and the results were referenced against publications from the New York State Museum for accuracy. Comparison of Python and Excel indicates that the Python based results are more precise. Additionally, Python provided the opportunity to conduct statistical tests to study uncertainties within the model. Initial positional variations in latitude, propagated from the Flex® Mini unit, and surface elevation, from Digital Elevation Models, were analyzed and the resulting 2σ standard deviations were calculated for all data points along each survey route. This analysis suggests propagation of uncertainties in the 3D location of the gravity measurements resulting in 2σ standard deviations for bedrock elevations of ±1.5 meters (Fowlerville Road), ±5.7 meters (Route 20A), and ±4.0 meters (Mount Morris Geneseo Road).

Subject Category

Science and Mathematics Categories: Geophysics

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Scott Giorgis

This presentation will also be presented at:

The Geological Society of America 2025 Joint Northeastern and North-Central Section Meeting

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

21 • Inquiry-Based Dinosaur Trackway Lab for Eighth-Grade Students Focused on Identification, Diet, and Speed

Ashley Smith, Renee DiLaura

Abstract

Imprinted dinosaur trackways from the Cretaceous provide insight into dinosaurs' movement, diet, and social behavior. This study develops a 40-minute lab for eighth-grade students to incorporate inquiry-based learning, promoting insight into the history of Earth. Using trackway data from Dinosaur Valley State Park, Texas, from Google Earth Pro, students examine footprints cut to scale to collect data on dinosaur diet, speed, and behavior. Based on the provided models and background information within the attached lesson plan, students will be asked to determine that theropods had narrow, three-toed prints, while sauropods had wider, rounded impressions. Students will count that bipedal dinosaurs left one set of tracks, whereas quadrupedal ones left two. Quadruped dinosaurs were larger to accommodate the long digestive tracts needed to process plant material. Herding behavior and parental care tendencies were inferred from trackway clustering. Students measure the size of rear footprints and calculate stride lengths by determining the distance between footprints. After conducting calculations involving both human and dinosaur dimensionless speed and relative stride lengths, students estimate the actual speed of both. By comparing this data to the movement of modern animals, students plotted a graph of relative stride length vs. dimensionless speed, revealing a linear relationship between the way that dinosaurs moved and modern species. The lab packet includes guided notes and scaffolding techniques to support student learning, encouraging inquiry-based exploration as they analyze trackway data and make evidence-based conclusions about dinosaur behavior and movement.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

D. Jeffrey Over

158 • Devonian Nowakia from the Genundewa Limestone, Upper Devonian, Western New York

Emma Johnson, Liam McAneney, Chloe Rayburn, Rory Salter, Colleen Strong, Kaitlyn Magerle, Allison Linne, Michael Civiletti, Naod Daniel, Ethan Gilfus, Jamie McCarthy, Carter Prinzi

Abstract

Nowakia are microscopic conical fossils of unknown affinities, possibly mollusks, characterized by an ornament of rings and ridges. Nowakiids have been found and studied in Devonian limestones from the Czech Republic and China, but not specifically from the Genudewa Limestone in western New York. Our goal was to quantify the abundance of nowakiids and other dacryoconarids from the upper and lower beds of the Genundewa limestone. Rock samples were collected at both Eighteen Mile Creek near North Evans, and Jones Bridge Road near Geneseo. Materials were collected using chisels and sledge hammers, then crushed, split, and scanned using optical microscopes and then imaged using a scanning electron microscope. Well preserved specimens were found at Eighteen Mile Creek upper and Jones Bridge Road lower. The Genundewa limestone is composed primarily of smooth Styliolina, a type of dacryoconarid. The nowakiid specimens are unlike other species that have been described.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

D. Jeffrey Over

This presentation will also be presented at:

Geological Society of America

223 • Color Alteration of Conodonts from the Upper Devonian to Lower Mississippian

Ethan Gilfus, Jamie McCarthy, Ryan Britt

Abstract

Three conodont bearing samples from Mount Morris, New York, San Saba, Texas, and Pi, Spain were processed using 10% formic acid buffered with calcium carbonate and calcium phosphate to compare age, preservation, and burial depth as indicated by the Color Alteration Index. The Shurtleff Concretion Horizon in the upper Cashaqua Formation of the Sonyea Group from Mount Morris, New York, yielded a fauna of exceptionally well preserved Frasnian conodonts that are CAI 2.5. Pi-01 limestone from Pi, Spain, within the Barousse Formation yielded poorly preserved Upper Famennian conodonts that are CAI 5. Type Chappel limestone from San Saba, Texas, yielded a mixed fauna of well preserved Famennian and Tournaisian/Visean conodonts that are CAI 1-2. The range of color for the Type Chappel sample indicates that the temperatures ranged from 50°-140° Celsius. This shows it was buried in the mid continent where it was not affected by Orogenic events. This sample was made up of eroded layers of conodonts causing a mix of layers from the accumulation of conodonts. While the Pi-01 reached temperatures of 300°-480° C which was buried the most with the highest heat and pressure due to being directly on the Alpine orogenic belt. The Shurtleff Concretion Horizon reached temperatures ranging from 60°-200° C indicating that the strata were buried at an intermediate depth. This sample would have been found along the border of the Appalachian Orogeny.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

D. Jeffrey Over

38 • Digital Reconstruction of Mendon Ponds Mapping from 1963

Rob Pisacani

Abstract

Mendon Ponds are located in Monroe County, New York. Mendon Ponds Park consists of glacial landforms that were well preserved and shaped by stagnant ice. Former Geneseo Professor Dr. Young created a geomorphic map in 1963 using stereographic analysis, a technique that interprets three-dimensional landforms from overlapping aerial photos, along with publications by H.L. Fairchild. He mapped the park and surrounding area through hand-drawing methods. His map was a valuable asset at the time, but modern mapping techniques can help update and specify his data. This study looks to digitize Dr. Young's map by using Light Detection and Ranging (LiDAR) data. Dr. Young's map was overlain on ArcGis and digitized using digital reconstruction. The area has had some topographic and industrial changes which will be taken into account, and geologic contacts that went unnoticed to Dr. Young. The goal of the study is to improve upon his findings using modern data. This work will hopefully drive future studies by SUNY Geneseo students.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Science

Faculty Sponsor

Nicholas Warner

66 • Comparative 3D Morphometric Analysis of 100-m-scale Impact Craters on Mars

Nicholas Warner, Sarah Alfiero, Margaret Guilfoyle, Kevin Pereira, Liam Wilson

Abstract

The morphometry of small impact craters is sensitive to both target properties and surface processes. Two dimensional, diameter-dependent empirical relationships involving crater depth and rim height have long been used to assess the geologic history of terrains on Mars. Here, we improve on previous studies by evaluating the three dimensional morphometry of 100-m-scale craters. Cavity and ejecta volume data from nearly 200 craters on Mars have been compiled from historical landing sites where the surface geologic context is fairly well-understood. These areas have been imaged at extremely high resolution (25 cm/pixel) from orbit using the High Resolution Imaging Science Experiment (HiRISE) camera onboard the Mars Reconnaissance Orbiter. The crater morphometric data are extracted from 1 m HiRISE digital elevation models (DEMs). A new methodology was developed in ArcGIS Pro using Python scripting to more efficiently quantify the volumes of impact crater cavities and ejecta accounting for impact-induced terrain uplift. The data for basaltic-dominated, Amazonian-age landing sites (InSight, Viking, Spirit) reveal that variability in regional sand supply strongly influences cavity degradation. Ejecta degradation over time appears to be more controlled by target rock strength. Terrains at the Curiosity rover landing site indicate that even young craters that impacted into sedimentary rocks on Mars have highly degraded ejecta blankets and rims relative to craters impacted into igneous rocks, despite the extremely slow surface processes of modern Mars. This result may allow crater morphometry to be used to better understand the lithology and surficial geologic processes at less-studied areas on Mars.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Nicholas Warner

This presentation will also be presented at:

Lunar and Planetary Science Conference

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award

86 • Shongo Valley Creek Thin Skinned Slump Monitoring and Modeling

Jeffrey Herberger

Abstract

This study describes geomorphology, triggers, and monitoring of a slow, rotational slope failure at Shongo Valley Creek in Caneadea, NY. One- and two-dimensional (dry/wet) factor of safety (FS) models were produced using a 1-meter digital elevation model (DEM) in ArcGIS Pro. Fieldwork and drone imaging were also completed for active slide monitoring and informing FS analysis. The Factor of safety (FS) is a non-dimensional ratio relating resisting and driving forces for failure. FS values above 1.2 indicate slopes that are unconditionally stable, 1 stable, 0.8 unstable, and below 0.8 unconditionally unstable. The analysis revealed most of the region surrounding Shongo exhibited stability (FS 1 to 10), some small zones of instability were identified along the canyon walls of Shongo Creek (FS 0.2 to 1). One of the locations of low FS values corresponds to a steep-walled, east-facing cut-bank comprised of thick (10m), Pleistocene-age, lacustrine clay deposits (varves) overlain by a 1-meter-thick permeable gravel layer. These deposits were identified in areal and field data. We posit that the gravel layer serves as a conduit for surface water flow, applying pore pressure at the interface of the clay-rich deposits. However, the FS models indicate that this relationship alone may not be sufficient to trigger failure. Hillslope failure is ultimately triggered here by undermining Shongo Creek. Field reconnaissance further indicates that FS models runs had limitations by only considering single compositions, precipitation values, and deposit thickness, whereas the area comprises various surface geology type, thicknesses, contributing drainage areas, and specific external triggers.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Science

Faculty Sponsor

Nicholas Warner

23 • Tiny Pollutants, Big Impact: Investigating Microplastics in the Sediments of Conesus Lake, Livingston County, NY

Jordana Montuori

Abstract

Conesus Lake, one of the 11 Finger Lakes in Livingston County, New York, is a popular destination for recreational activities such as boating, swimming, and fishing. However, these activities contribute to the accumulation of microplastics—small plastic particles smaller than 5mm in the lake’s sediment. Microplastics have been detected in a wide range of environments, from the summit of Mount Everest to the depths of the Mariana Trench, as well as in human biological samples. They have also made their way into animals' lives. This study aims to quantify the concentration of microplastics in Conesus Lake. A 47 cm core sample was collected from the lake’s most populated area, with 2.4 grams of sediment analyzed at 5 cm intervals for microplastic content. The filter method was employed, in which the sediment was placed in a petri dish lined with white-gridded paper to enhance the visibility of plastic particles. Once isolated, the microplastics were categorized by shape and color. By analyzing this data, we can better identify the sources of these pollutants, assess their environmental impact, and advocate for stricter regulations to mitigate the growing challenges posed by microplastic contamination in aquatic ecosystems.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department
Geological, Environmental and Planetary Sciences
Faculty Sponsor
Jacalyn Wittmer Malinowski

31 • Measuring the Success of Remediation using Ostracodes in the Western Finger Lakes, NY

Emily Szczublewski, Jacey Balcarczyk, Zander Cole, Kurt Schirrmacher, Jacalyn Wittmer Malinowski, Andrew Michelson

Abstract
Conesus Lake, a mesoeutrophic lake located in the Finger Lakes, has experienced environmental disruptions over the past centuries. Conesus Lake contains six species of ostracods, *Cypridopisis vidua, Candona candida, Candona ohioensis, Candona ellipitica, Darwinula stevensoni,* and Limocythere verrucosa. These species reflect the lake's environmental conditions, including remediation efforts used to restore it. This study aims to show the effectiveness of remediation using the diversity and abundance of ostracodes found in the lake. Cores were collected from the south basin of Conesus Lake. Samples of sediment were collected at one-centimeter intervals from 3 cm to 154 cm. Subfossils were separated from the sediments, sorted, and identified to the lowest level. 1,363 ostracodes were found from 51 horizons in the core. *Cy. vidua* and Ca. candida were the most prevalent. *Cy. vidua* had the most overall abundance throughout the core whereas Ca. candida showed elevated abundance at both the top and base of the core. *Ca. ohioensis* displayed lower abundances near both core-bottom and core-top with peak abundance mid-core whereas Ca. elliptica displayed moderate abundances near core base with infrequent occurrences near core-top. We propose *Ca. candida* and Cy. vidua may be indicators of mesotrophic conditions, *Ca. ohioensis* may indicate eutrophic conditions and Ca. elliptica may be indicative of more oligotrophic conditions. The return of *Ca. candida* and Cy. vidua near the core-top reveals the positive impact of remediation on the ecosystem and monitoring live ostracodes can be used to indicate the lake's trophic state.

Subject Category
Science and Mathematics Categories: Geological Sciences
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Geological, Environmental, and Planetary Sciences
Faculty Sponsor
Jacalyn Wittmer Malinowski
This presentation will also be presented at:
Northeast- North central Geological Society of America Joint Section Meeting

203 • Investigating the Impact of Invasive Mussels on Ecosystem Dynamics in Conesus Lake

Jacey Balcarczyk, Zander Cole, Kurt Schirrmacher, Emily Szczublewski, Jacalyn Wittmer Malinowski, Andrew Michelson

Abstract
This study examines how invasive mussels influence ecosystem dynamics in Conesus Lake, the westernmost Finger Lake in New York. Conesus Lake has experienced cultural eutrophication, remediation efforts, and ongoing challenges such as hypoxia, harmful algal blooms, and invasive species such as Dreissena polymorpha and Dreissena bugensis. Using lake sediment archives, this study analyzes invasive mussel body size and morphology over time to assess their ecological impacts. Two 150 cm sediment cores from the south basin were analyzed using a Geotek multi-sensor core logger. Sub-fossilized mussel shells were identified to species level, and body size metrics—including length, height, and dorsal curvature—were measured. A total of 138 mussels from 12 stratigraphic horizons, spanning contemporary sediments to the first *Dreissena* appearance (mid-1990s), were assessed. D. polymorpha had a mean length of 5.2 mm, height of 2.7 mm, and L/H ratio of 1.8, while *D. bugensis* had a mean length of 1.9 mm, height of 1.2 mm, and L/H ratio of 1.6. Both species showed a strong correlation between valve length and height ($r^2 = 0.998$ and $r^2 = 0.9611$, respectively).

Stratigraphic trends indicate that zebra mussels initially exhibited a broader size range, while quagga mussels remained smaller and stable, possibly due to competition or environmental constraints. These findings improve our understanding of invasive mussel population dynamics and their effects on nutrient cycling, benthic habitats, and food webs. Future research will integrate molecular techniques to refine species identification and invasion timelines.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Jacalyn Wittmer Malinowski

This presentation will also be presented at:

Geological Society of America 2025 Joint Northeastern and North-Central Section Meeting

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

268 • A Fossil Bugs Life in Conesus Lake

Zander Cole

Abstract

This study aims to investigate the subfossil record, preservation, and environmental sensitivity of lake insects in Conesus Lake (Livingston County, NY). The Finger Lakes, especially Conesus Lake, are critical sites for aquatic insect diversity and life stages. Fossil insects are primarily found in ancient lake sediments and are useful indicators of insect diversity, evolution, and ecological change. Therefore, Conesus Lake is an ideal system for investigating the aquatic insect subfossil record to use as a tool for understanding lake ecosystem health and preservation. Piston and bolivia cores were collected from the south basin of Conesus Lake. The cores were collected at 1.8 meters in water depth, composing a composite core of 154 cm. These cores were split, imaged, and analyzed using a Geotek multi-sensor core logger at Syracuse University. Sediments were sub-sampled at one-centimeter increments, sieved at 250 and 125 microns, and subfossil material was separated from the sediment. Insect exoskeletons, larval encasements, and head capsules were picked from the sediment and identified based on morphology and taxonomic affinity. 95 insect components were collected from 30 sediment horizons. Chironomid head capsules, insect carapaces, caddis fly larval encasements, wings, mandibles, legs, and unknown insect parts were found in lake sediments. Most commonly found were caddisfly encasings (34 encasings) and chironomid head capsules (29 heads). Caddis fly encasings were composed of plants or grains of sediment. Based on the preservation of caddis fly encasings and chironomid heads, these can be used as environmental indicators and proxies of historical change in Conesus Lake.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological, Environmental, and Planetary Sciences

Faculty Sponsor

Jacalyn Wittmer Malinowski

GLOBAL LANGUAGES AND CULTURES

209 • Social Media Use and Well-Being of Austrian Youth: A Comprehensive Analysis and Review

Kaitlyn Britt, Mia Geiger, Ethan MacDonald

Abstract

This study compares the impact of social media usage on cognitive welfare, physical health, and overall wellbeing among adolescents in the United States and Austria. A comprehensive literature review of 20 sources from both countries was conducted to examine the effects of social media engagement, considering cultural and contextual differences. Our findings indicate that Austrian adolescents report significantly lower levels of social media usage compared to their U.S. counterparts, and this reduced engagement is associated with more favorable outcomes across all domains studied. Austrian youth exhibited fewer negative psychological effects, such as social comparison, anxiety, and diminished self-esteem, in contrast to U.S. adolescents who demonstrated higher levels of these issues. Regarding physical health, Austrian adolescents were less likely to experience sleep disturbances and were more physically active, whereas U.S. adolescents showed higher rates of sedentary behavior, which correlated with poorer physical health. In terms of cognitive welfare, U.S. adolescents experienced greater declines in attention span and memory as a result of higher social media engagement. These findings suggest that lower social media usage among Austrian adolescents is linked to better cognitive, physical, and psychological wellbeing. This study underscores the role of cultural factors in shaping the impact of social media on adolescent development and emphasizes the need for culturally tailored interventions to mitigate the negative effects of excessive social media usage, particularly in the U.S.

Subject Category

Interdisciplinary and Other Categories: Central & Eastern European Studies

Faculty Sponsor Department

Global Languages and Cultures

Faculty Sponsor

Cynthia Klima

This presentation will also be presented at:

Austrian Studies Association

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

HISTORY

205 • The Birth of a New National Identity: Pronatalism in the United States

Matthew McMullan, Mollie McMullan

Abstract

Our project, titled "The Birth of a New National Identity: Pronatalism in the United States" traces the roots of pronatalism in the United States from the 1940s and 50s all the way to now. Historically, pronatalism has been used to establish our country's national identity, and that same practice is being done today. Advocates of pronatalism often depend on nostalgic imagery, relying on the image of the nuclear family and traditional gender roles in order to advance their campaigns. As such, the culturally-salient image of the "trad wife" continues to emerge—especially now that President Trump's administration continues to promote such practices via rhetoric and proposed reforms. Through examining pronatalism in the 1940s and 50s, we are better able to understand the rise of pronatalist policies and rhetoric in the United States.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

History

Faculty Sponsor

Joe Cope

MILNE LIBRARY

302 • The Social Implications of Defunding Libraries 💡

Nia Jones

Abstract

Public libraries are the frontline of education, social issues, and opportunity. Library funding has been under attack by right-wing politicians for years. These individuals, along with other groups, have sought to limit access to library materials; some seek to ban materials altogether, or even to defund or dismantle the libraries that resist these challenges. There is an increasing number of state and local jurisdictions that have passed, or have attempted to pass, legislation that restricts or limits the public's access to certain materials. These attacks on intellectual freedom directed towards public libraries, school libraries, academic libraries, and even museums are becoming more frequent and more harmful. The attack on libraries is an attack on young readers exploring picture books and adults who continue pursuing education through a library's resources. The threat to libraries threatens intellectual freedom and the public's access to information.

Subject Category

Arts and Humanities Categories: Literary Arts

Special Topic Information

Ideas that Matter: AI

Faculty Sponsor Department

Library Research Instruction

Faculty Sponsor

Alan Witt

Funding Sources

McNair Scholars Program Support

NEUROSCIENCE

153 • The Role of Black Seed Oil (Thymoquinone) on Repetitive Behavior and Neuroinflammation in Spinning Mice

Ashley Biondi

Abstract

Repetitive behavior is characterized as repetitive actions with no purpose, which is a common feature in autism spectrum disorder (ASD). What we are trying to see is if environmental interventions can reduce repetitive behaviors in mice. In prior studies in mice, a ketogenic diet (KD) successfully decreased repetitive behaviors. One hypothesis is the reduced spinning is due to the KD being an anti-inflammatory. Neuroinflammation, which refers to inflammation in the central nervous system, may offer a link between diet and ASD, and other disorders. In a convergent approach, this study uses another known anti-inflammatory, Thymoquinone (TQ), to try and reduce repetitive behaviors. TQ is the main ingredient in black seed oil, and has traditionally been used as an anti-inflammatory, antimicrobial, antioxidant, and more (Farkhondeh et al., 2018). Prior literature indicated that TQ has positive effects on neurological problems such as epilepsy, Parkinsonism, anxiety, and improvements in learning and memory (Farkhondeh et al., 2018). If our hypothesis is correct and TQ reduces repetitive behaviors, it will provide insight into novel therapeutic remedies for conditions exaggerated by neuroinflammation, such as repetitive behaviors in ASD.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Neuroscience

Faculty Sponsor

Allison Bechard

This presentation will also be presented at:

SURC Binghamton

Funding Sources
Geneseo Foundation Undergraduate Summer Fellowship, Sorrell Chesin '58 Research Award, TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

168 • Can the Ketogenic Diet Reduce Drinking? An Experiment with Mice that Drink Alcohol.

Yovanka Nunez, Marissa Marsh, Allison Bechard

Abstract
Can the ketogenic diet reduce drinking in mice? The ketogenic diet is a high-fat, low-carbohydrate diet designed to shift the body's metabolism from using glucose as its primary energy source to burning ketone bodies from fat for fuel. The ketogenic diet has been used historically to treat epilepsy in children and more recently as a fad diet for weight-loss in healthy humans. We have used the ketogenic diet to reduce alcohol consumption and improve memory in mice. In this previous study, mice drank EtOH for 8 weeks, with half of the mice being fed the ketogenic diet (KD) for the last 3 weeks. Mice then underwent four days of the Barnes Maze testing to determine memory differences. The mice fed the ketogenic diet showed reduced drinking and better memory compared to control mice. This semester, we are repeating this work and adding in a battery of tests for anxiety behaviors with the hypothesis that KD will reduce drinking and anxiety. This work is ongoing and will help us to understand if KD is reducing drinking by reducing anxiety. Sixteen mice are currently being observed for EtOH consumption and will be fed 3 weeks of KD before undergoing the Elevated Plus Maze, Locomotor Test, and Barnes Maze to test their anxiety and memory performance.

Subject Category
Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department
Neuroscience

Faculty Sponsor
Allison Bechard

226 • Ketogenic Diet Effect on Anxiety Behaviors

Kayla Storie, Jana Kamal, Azan Ashcraft, Keylanise Rivera-Ortiz, Riley Connell, Mary Feck

Abstract
The ketogenic diet (KD), is a high-fat, low-carb diet that has been used to treat childhood epilepsy for over 100 years. This diet has proposed pathways for reducing mood disorders, for example, through the reduction of inflammation in the brain. An application explored in this study is the reduction of anxiety-like behavior following the switch to KD in a mouse model. Half the mice were fed KD for three weeks, while the other half ate standard chow. Tests to assess anxiety were conducted using the Locomotor Box, 3-chambered Social test, Light Dark Box, and Elevated Plus Maze, while memory was assessed using the Barnes Maze. Anxiety behavior was measured through the willingness to spend time in the open arms of the maze and the light side of the box. We hypothesized that anxiety behaviors would be reduced and social behaviors increased in mice on a KD. We found increased social abilities, better memory, and no differences in anxiety behavior. Next, we wanted to see if alcohol would influence anxiety behavior and interact with the effects of KD. Using male mice, we injected alcohol (1.0 g/kg, IP) for 7 days, fed them either KD or standard chow, and then similarly tested for anxiety and memory. Results are preliminary, but currently suggest that KD can reduce weight, improve social ability, and working memory in mice with or without alcohol use.

Subject Category
Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department
Neuroscience

Faculty Sponsor
Allison Bechard

228 • Investigating Metabolic and Hormonal Modulation in Female APOE4 Mice: Insights for Sex-Specific Alzheimer's Research

Annabelle Laibe, Allison Bechard

Abstract

Alzheimer's Disease (AD) disproportionately affects females, with estrogen loss after menopause contributing to cognitive decline and metabolic dysregulation. The APOE4 genotype is the strongest genetic risk factor for late-onset AD and may interact with hormone fluctuations to exacerbate neurodegeneration in females. I am starting a project to test the role of estrogen in AD-related behaviors using APOE4 knock-in mice, which carry the high-risk AD allele. This female-focused study uses a mouse model to explore ovarian hormones in the context of AD risk.

To begin, I assessed baseline estrous cycles in thirteen 8-month-old female APOE4 knock-in mice using a vaginal lavage technique, which allows for monitoring hormone-congruent cycle stages. To test if we could shift cyclicity, the mice were then placed on a ketogenic diet (KD)—a high-fat, low-carbohydrate diet that shifts brain metabolism from glucose to ketones. After this period, I reassessed their estrous cycles. In addition to monitoring weight, I tested memory using a working memory maze. This project is also developing a more quantitative and less invasive hormone tracking method. Currently, we are comparing traditional vaginal cytology with a digital hormone monitoring system using INITO fertility test strips, which measure estrogen, luteinizing hormone (LH), and progesterone through urine-based testing.

This foundational work informs future experiments using ethinyl estradiol (EE)—a synthetic estrogen found in many birth control pills—to investigate how hormone treatments interact with age and APOE4 genotype. Ultimately, this research supports female-specific approaches to understanding and preventing AD.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship

200 • Topographical Individualized Neuromarkers in Children With and Without Attention-Deficit/ Hyperactivity Disorder

Julia Massoni, Grant Edmondson, Natalie Riedy

Abstract

The Topographical Individualized Neuromarkers (TIN) project uses an innovative approach to analyze topographical patterns of brain function to discover biomarkers for mental health. In previous studies, neurotypically developing children show a distinct nonlinear connectivity pattern from the Anterior Cingulate Cortex (ACC) to the insula, with a maximum at the mid-dorsal ACC, compared to those at risk for anxiety who show a decreased, more linear pattern within these regions (Taber-Thomas et al., 2016). In the current study, we focus on the topographical functional connectivity patterns in children with attention-deficit/ hyperactivity disorder (ADHD) across the limbic system, a composition of different neural networks working together to process and control emotions, memory, and behavior (Catani et al., 2013). We analyzed a large, publicly available fMRI dataset (ADHD-200 Preprocessed; Bellec et al., 2017), with a total of 677 participants: 241 ADHD (gender: 189M/ 52F) and 436 typically developing (TD; gender: 232M / 204F). We also examined the topographical pattern in typically developing adults sourced from Neurosynth. We expect that the fMRI functional connectivity in participants with ADHD will show higher connectivity in the dorsal anterior cingulate, a network that regulates emotions, compared to typically developing participants. This approach is still very new and is an exploratory analysis that could help us further discover connectivity patterns along specific brain regions among other neurodivergent disorders. Our findings aim to enhance understanding of ADHD's neural mechanisms and encourage further biomarker research.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Neuroscience

Faculty Sponsor

Bradley Taber-Thomas

PHILOSOPHY

185 • Nonviolent Pedagogy: Reimagining Undergraduate Philosophy Education

Alexis Flint

Abstract

Traditional undergraduate philosophy education (UGPE) often prioritizes dominant historical viewpoints (DHVs) while marginalizing less commonly taught philosophies (LCTPs). This exclusion creates epistemic injustices, limiting student engagement, agency, and opportunities for meaningful contributions to philosophical discourse. My research explores how incorporating principled nonviolence into pedagogy can address these systemic limitations.

Nonviolent Pedagogy (NVP) is an approach that fosters dialogical learning, student agency, and epistemic justice by modifying traditional curricular structures and instructional methods. This framework draws on the Kingian model for nonviolent social change, ungrading methodologies, and inclusive epistemological frameworks to create a more participatory learning environment. Through intentional leadership and classroom design, NVP encourages students to engage in philosophical inquiry beyond rote memorization, promoting critical engagement with diverse perspectives. This poster presents key arguments for integrating NVP into UGPE, outlining the philosophical justification for such modifications, practical applications for curriculum design, and the broader implications for the discipline of philosophy. By fostering learning agency and reducing systemic epistemic barriers, NVP not only enhances student experience but also advances philosophy as an evolving, inclusive dialogue.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department

Philosophy

Faculty Sponsor

Brian Barnett

This presentation will also be presented at:

American Philosophical Association

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

34 • Female Philosophers During the Early Modern Period

Alexis Patrick, Brett Bower, Joseph Healy

Abstract

The Stanford Encyclopedia of Philosophy (SEP) is regarded as a reliable source for at least the beginning stages of philosophical research. However, there is a notable underrepresentation of female philosophers, specifically during the Early Modern Period (1600-1800). This is important as philosophy has historically been a primarily male dominated field, and the greater acknowledgement of female philosophers is important for not only historical accuracy, but also to make the field more welcoming to new scholars. To begin this project we investigated the SEP's practices regarding the female philosophers of the era. We found that there were discrepancies between the tagging of female and male philosophers including the lack of mention of female philosophers in articles not dedicated to them. Next, we worked to identify possible practices that lead to the SEP's problems. This included underrepresentation of female philosophers, and the absence of correspondence and relation to the better known male philosophers. This included failure to properly represent female philosophers, under male philosophers' pages, even when they are corresponding or share related work. Most notably the website lacked a system of mutual tagging which creates disparity between female philosophers

whose tags link to their male correspondents and contemporaries but not vice versa. Finally, we sent an email to the editorial board of the SEP regarding this issue to which they responded favorably and assured some positive changes would be made to their choice of tags.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department

Philosophy

Faculty Sponsor

David Levy

PHYSICS AND ASTRONOMY

152 • Ion Beam Analysis of Lithium Targets used to Measure Laser-Driven Nuclear Reaction Cross Sections

Shoshanna Hertz, Silas Richardson, Delvin Ramos, Liam Wilson, Michelle Woods, Charles Freeman, Stephen Padalino

Abstract

A project is underway to develop a platform for measuring light ion nuclear reaction cross sections at the Laboratory for Laser Energetics (LLE) using beams of particles produced by the target normal sheath acceleration (TNSA) mechanism. This technique could enable the measurement of nuclear reaction cross sections that are not accessible with conventional accelerators. One reaction currently under investigation to test the feasibility of this technique is the 7Li(d,p)8Li reaction. The deuteron beam, produced by TNSA, is incident on a lithium target producing the radioactive isotope 8Li with a half life of 840 ms. Counting the resulting activity of the 8Li produced in this process allows the reaction cross section to be determined. A set of lithium targets has been produced at Houghton University by depositing a thin film (~2 um) of lithium onto a stainless steel substrate. These targets have been studied using ion beam analysis (IBA) performed at the 1.7 MV Pelletron accelerator laboratory at SUNY Geneseo. A proton beam from the accelerator is incident on the target and the energy spectrum of the backscattered particles is measured using a silicon detector. We have used both Rutherford backscattering spectroscopy (RBS) and nuclear reaction analysis (NRA) to determine the thickness and composition of the lithium layer in these targets. The detection of energetic alpha particles produced via the 7Li(p,α) reaction is used to provide additional information regarding the thickness of the lithium layer on these targets.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Charles Freeman

This presentation will also be presented at:

American Physical Society Division of Plasma Physics Annual Meeting

Funding Sources

This material is based upon work supported by the Department of Energy [National Nuclear Security Administration] University of Rochester "National Inertial Confinement Fusion Program" under Award Number(s) DE-NA0004144, and by SUNY Geneseo and Houghton University.

4 • Accurate Gravitational Wave Calculations from the Regge-Wheeler Equation in the Time Domain

Zachary Boice

Abstract

We calculated the energy flux emitted by an extreme mass-ratio inspiral. To do this, we solved the Regge-Wheeler equation using the method of lines and numerically integrating; a fourth-order finite difference method was used to increase accuracy. We represented the source by enforcing a jump condition across an internal boundary. We also made use of a hyperboloidal slicing and compactification scheme, based on the work of Thornburg and Wardell (2017). With a fourth-order finite difference method and exact compactified boundary conditions, we hope to achieve results that are among the most accurate time domain calculations.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Thomas Osburn

This presentation will also be presented at:

American Physical Society April Meeting

Funding Sources

National Science Foundation Grant Number 2309020

67 • Extreme Mass-ratio Inspiral Metric Perturbations Through Elliptic PDEs

Erin Battaglia

Abstract

While you are reading this abstract, gravitational waves (GW) may be passing through you, generated millions of light years away from some of the most energetic astrophysical systems known in the universe. In succession to the ground-based GW detector LIGO, the space-based detector LISA will soon orbit around the Earth to further explore the GW background. To give a better understanding of what signals LISA should look for, computational modeling of the spacetime around GW producing systems such as Extreme Mass-Ratio Inspirals (EMRIs) can be used. Numerically solving the Einstein Field Equations with a metric perturbation used for a small body inspiraling into a large black hole has provided insightful graphs of waveforms an EMRI would produce, using Mathematica. The Schwarzschild metric has been used first to compare behaviors, such as GW waveforms approaching the Schwarzschild radius, to other research. The Kerr Metric then will be used to represent a more realistic astrophysical scenario of a small body inspiraling into a rotating black hole.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Thomas Osburn

This presentation will also be presented at:

APS Global Physics Summit 2025

Funding Sources

National Science Foundation Award Number 2309020

99 • Towards Extreme Mass-Ratio Inspiral Calculations in the Time Domain Using Hyperboloidal Slicing and Compactification

Jonathan McNamara, Zachary Boice, Thomas Osburn

Abstract

Our future goal is to accurately predict gravitational wave signals by solving the Regge-Wheeler equation in the time domain. We first built foundational understanding by solving a simpler case with a simpler method: an oscillating point source on an infinite string, solved by implementing a second-order finite difference approximation to solve the 1D wave equation. We simulated waves propagating to infinity by imposing an internal boundary condition consistent with a

Dirac delta source. This was solved and simulated in Mathematica. One important feature of our technique is the use of hyperboloidal slicing and compactification because it enhances accuracy for astrophysical applications. We used hyperboloidal slicing to transform the time coordinate so there are only a finite number of wavelengths within the infinite domain; this enables compactification while avoiding the infinite blue shift problem. We compared our numerical results to the exact solution, which agreed up to the numerical discretization error.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Thomas Osburn

This presentation will also be presented at:

American Physical Society Global Physics Summit

Funding Sources

National Science Foundation Grant Number 2309020 NASA New York Space Grant

155 • Monte Carlo Simulations of the Charged Particle Energy and Nuclear Reaction Spectra

Michelle Woods, Delvin Ramos, Shoshanna Hertz, Silas Richardson, Liam Wilson

Abstract

There are many exit channels for the natural lithium-deuteron nuclear reaction; several aren't possible due to the Q values at low bombarding energies, but many have positive Q values, quickly producing light particles such as protons, deuterons, tritons, and alphas over a broad energy range. The kinematics for each reaction dictates the energy of the particles at a specified detection angle for 2-body final states (2BFS), thus allowing for the identification of the ejectile in the detector energy spectrum. Using Monte Carlo programs TRIM and SIMNRA, a simulated predicted energy spectra of a Li(d,x)y for a 1.5 MeV deuteron beam on natural Lithium at 174.3° and d(d,x)y on a deuterated polyethylene target at 135° laboratory reference frames. The results of this calculation were then compared to the measured spectrum produced at the SUNY Geneseo Pelletron Accelerator Laboratory used to determine the reaction rate of the 7Li(d,p)8Li reaction and Low Energy Ionization Facility (LEIF) used to assess the thickness of an aluminum foil.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Stephen Padalino

This presentation will also be presented at:

66th Annual Meeting of the American Physics Society Division of Plasma Physics

Funding Sources

Funded in part by the United States Department of Energy (USDOE)

75 • WIYN 0.9m UBVRI Photometry of the Open Cluster NGC 6811

Caitlin Miller, Catherine Robb, Marisa Mazzacco

Abstract

We present photometry of 83 images of the Open Cluster NGC 6811 in five filters, U, B, V, R, and I, taken with the WIYN 0.9m telescope at Kitt Peak National Observatory. Stars in each image were automatically detected and brightnesses measured using a dynamically measured and spatially varying point spread function (psf). Light extending past the psf radius was measured and corrected for. A final catalog of averaged magnitudes in each filter was created and cluster parameters such as age, distance, reddening, and metallicity were derived.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department
Physics and Astronomy
Faculty Sponsor
Aaron Steinhauer

POLITICAL SCIENCE AND INTERNATIONAL RLEATIONS

279 • The Enlightenment of Passion: The Promises and Limitations of the Socratic Education in Plato's *Alcibiades I*

Alexander Gent
Abstract
In Plato's Theages, Socrates claims that he is knowledgeable in nothing but that which pertains to eros. Given such knowledge, one can understand why Plato's Socrates would take great interest in the character of Alcibiades who, according to Socrates, in aspiring to be "the only man ever worth existing", desires such a thing more than any human being has ever desired anything. With this understanding of the character of Alcibiades, along with his presumed knowledge of eros, Socrates approaches the ambitious youth and expresses his desire to "have the greatest power" over him – assuming he can prove his value to the would-be statesman. The intention of this paper is to make an original contribution to the understanding of Plato's Alcibiades I through a careful reading of the interaction between the two characters informed by the following questions: What does Socrates having the "greatest power" over Alcibiades entail and why does Socrates desire such a thing? To what end is it desirable for Socrates, a philosopher, to prove his value to an aspiring statesman and Alcibiades in particular? Alcibiades I, in addition to highlighting problems and possibilities concomitant with the existence of man, paints a picture of the Socratic education complete with its limitations, requirements, presuppositions, motivations and potential benefits for both student and teacher, and the consequences of its failure. My paper argues that Alcibiades, more than a mere interlocutor, is a pivotal foil to Plato's Socrates and, by extension, his vision of philosophy and the nature of politics.
Subject Category
Social Science Categories: Political Science
Faculty Sponsor Department
Political Science and International Relations
Faculty Sponsor
Aaron Herold

PSYCHOLOGY

59 • The Behavioral Characterization of a Genetic Mouse Model of Alzheimer's Disease

Madison Forcier, Riley Connell, Renee Spencer, Allison Bechard
Abstract
Alzheimer's disease (AD) is one of the most common types of dementia, characterized by progressive memory loss and cognitive decline. Despite its increasing prevalence, there are few treatments and no cure. APOE4 is a variant allele that has been found to contribute to Alzheimer's pathology. We have a knock-in mouse model with the human APOE4 gene that was used to test the cognitive impairment that emerges as a result of the increased APOE4 gene expression. To do this, APOE4 KI mice and wild-type C57BL6/J control mice were tested for activity, motor strength and working memory across development. Although older mice were slower to solve a maze task than younger mice, APOE4 mice were similar to B6 control mice. It may be that an environmental stressor interacts with the APOE4 allele to cause the memory loss characteristic of AD. For example, it is known that the consumption of alcohol exacerbates the onset and magnitude of AD, potentially by increasing neuroinflammation. To test this, we administered EtOH for several days by IP injection. I hypothesized that APOE4 genotype would exacerbate alcohol-induced cognitive impairments.
Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Allison Bechard

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship, Dr. Wendell and Barbara Rhodes Research Award, Sorrell Chesin '58 Research Award

105 • Attention Bias Differences During Stressful Interactions

Kaelin Faery, Destina Tas, Sophia Licausi, Molly Flanagan, Isabell Matthew, Natalie Riedy

Abstract

Attention bias (AB) is a characteristic seen in individuals with anxiety, in which they attend to threatening or negative stimuli more frequently than neutral stimuli (Bar-Haim et al., 2007). To our knowledge, prior research investigating AB has not conducted experiments in true real-world situations, making results difficult to generalize to the real world. The present study adapted the Trier Social Stress Test (TSST; Kirchbaum et al, 1993) to assess attention bias in a real-life stressful situation. The TSST involves completing a brief speaking task in front of a panel; here the panel consisted of two confederates, one of which presents as attentive and affirmative (positive) and the other disengaged (negative). For this study, participants will wear PupilCore mobile eye tracking glasses to monitor eye gaze during the TSST, as well as during pre- and post-stressor social interactions. Data will be analyzed to compare eye gaze between the positive and negative social stimuli across task conditions. It is hypothesized that in the pre-stress interaction participants will exhibit greater attention to the negative than positive stimulus, and that this attention bias will increase during the stressful situation. This hypothesis will be tested by analyzing the dwell time from the pretest, non-stressful interaction, as well as comparing it to the TSST, stressful, interaction.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Bradley Taber-Thomas

106 • Trait Anxiety Relationship to Attention Bias During Social Interaction

Molly Flanagan, Kaelin Faery, AJ Ludlam, Hannah Belosky

Abstract

Trait anxiety is an individual's tendency to appraise situations as threatening, avoid anxiety-provoking situations, and demonstrate high baseline physiological arousal (Elwood et al., 2012). Attention bias (AB) is a characteristic seen in individuals with anxiety, in which they attend to threatening or negative stimuli more frequently than neutral stimuli, but no studies have examined this relationship in a real-world social setting (Bar-Haim et al., 2007). Here, we test the hypothesis that more anxious individuals have an attention bias during a real-world social interaction. Trait anxiety is tested at the beginning using an STAI-T questionnaire, with higher scores indicating higher levels of anxiety. The present study adapted methods from Kirchbaum et al. (1993) Trier Social Stress Test (TSST) model and assessed participant attentiveness to positive and negative stimuli in a stressful situation. The TSST consists of participants completing a brief speaking task in front of a panel of two confederates. For this study, participants wore Pupil Neon mobile eye tracking glasses that monitored visual fixations throughout the experiment. A pretest activity was conducted to introduce participants to the two confederates. To test our hypothesis, data from STAI-T will be correlated with pre-test fixations between the two confederates, one of which presents as attentive and affirmative (positive) and, the other as disengaged (negative).

Subject Category

Social Science Categories: Psychology
Faculty Sponsor Department
Psychology
Faculty Sponsor
Bradley Taber-Thomas

148 • Perspective Taking and Dispositional Empathy with Nature: The Mediating Role of Connection to Nature 🌿

Anna Arehart, Joseph Healy
Abstract
Dispositional empathy for nature is an important predictor of pro environmental intentions. However, relatively little is known about the psychological precursors of dispositional empathy for nature. We predicted that connection to nature would mediate the relation between perspective taking and dispositional empathy for nature. Our reasoning is based on findings that link empathy to dispositional empathy for nature (perspective taking is a component of empathy for other humans), and our hypothesis that feeling connected to nature should increase empathy for nature. Undergraduate participants (n=117) at SUNY Geneseo completed an online survey that included measures of perspective taking of other humans, connection to nature, and dispositional empathy for nature, along with other measures. Results confirmed our hypothesis by showing that connection to nature fully mediated the relation between perspective taking and dispositional empathy for nature. Taken together with previous results, our results show that dispositional empathy for nature is an important variable that potentially links multiple components of empathy for other humans with pro environmental intentions.
Subject Category
Social Science Categories: Psychology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Psychology
Faculty Sponsor
Jim Allen

171 • Applying Batson's Model of Human Altruism to Environmental Concern 🌿

Anna Arehart, Alexandra Gaboury, Anthony Carvalho, Joseph Healy
Abstract
Batson found that empathy, defined as genuine concern for another, predicted altruistic motivation to help others, and that taking the perspective of another is a precursor of empathy. Researchers inspired by Baston find that empathy for other humans also predicts environmentally responsible behavior. This research also shows that dispositional empathy for nature and connection to nature also predict environmental concern. However, research has not fully tested whether Batson's model explains how empathy predicts environmentally responsible behavior. Therefore, we tested a model that fully integrates Batson's theory of human altruism into current research on environmentally responsible behaviors. Specifically, we tested whether perspective taking for other humans predicted environmental concern via the mediators (in this order) of empathy for humans, dispositional empathy for nature and connection to nature. Participants were 129 undergraduates (109 women) at a public college in western New York. We tested the predicted model using Hayes' (2024) PROCESS macro for SPSS, s using social desirability as a covariate. The direct effect between Perspective Taking and Environmental Concern was not significant [Effect = .10 (-.11, .31), t = .94, p = .35), but the total indirect effect was significant [Effect = .21 (.06, .36)]. Consistent with predictions, the only significant indirect path included all the proposed mediators (Effect = .03 (.002, .06)]. These results are in accordance with Batson's (2023) theory of human altruism, and integrate his theory more fully into current findings in environmental psychology.
Subject Category
Social Science Categories: Psychology

Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Psychology
Faculty Sponsor
Jim Allen
This presentation will also be presented at:
Association for Psychological Science

220 • Personal Distress and Environmental Concern Mediate the Relationship Between Connectedness to Nature and Environmentally Friendly Behavior

Alexandra Gaboury, Anthony Carvalho
Abstract
Previous research shows that connectedness to nature and empathy predict environmentally friendly behaviors and intentions. However, mediators within this relationship remain unclear. We suspect that the role of emotions and distress is important, specifically given today's environmental problems and their influence on individual's well-being and then on their environmental actions. This leads us to the hypothesis that connectedness to nature would predict environmentally friendly behaviors through sequential serial mediators of personal distress and empathetic concern. We tested this hypothesis using a sample of college students at a public liberal arts college who completed a lengthy questionnaire with various environmental questions and measures. Results confirmed the hypothesis and indicated that this was the only significant path involving these mediators in addition to the direct effect between connectedness to nature and environmentally friendly behaviors. These results suggest that emotional response to distress from environmental problems is an important mediator and deserves more attention. This provides important information on how affect can affect behaviors, specifically what may influence individuals pro-environmental behaviors.
Subject Category
Social Science Categories: Psychology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Psychology
Faculty Sponsor
Jim Allen

256 • The Pathway Between Life Satisfaction and Environmentally Friendly Behavior Mediated Through Personal Distress and Empathetic Concern

Alexandra Gaboury, Anthony Carvalho
Abstract
Previous studies show that life satisfaction predicts environmentally friendly behaviors. Mayer and Frantz view connectedness to nature as a potential component of life satisfaction, so in this way, we can view life satisfaction as a related component to environmentalism. But mediators and the relationship between this relationship are unclear. This led to the hypothesis that life satisfaction would predict environmentally friendly behaviors through personal distress and empathetic concern. This was tested with a sample of college students at a public liberal arts college who completed a questionnaire with various empathetic and environmental measures and scales. Results confirmed the hypothesis and indicated that this was the only significant pathway involving these mediators, with no direct effects between life satisfaction and environmentally friendly behaviors. Life satisfaction is negatively correlated with personal distress, however personal distress, empathetic concern and environmentally behaviors are in sequence, positively correlated to each other. This provides data in need of further study on how life satisfaction–which is usually correlated to environmentally friendly behavior–can be mediated by variables that change the effects of this relationship.

Subject Category
Social Science Categories: Psychology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Psychology
Faculty Sponsor
Jim Allen

20 • Aggression and Rough-and-Tumble Play During Sibling and Friend Interactions in Middle Childhood and Adolescence

Anna Shepard, Rachel Ntor, Phoebe Brenner, Avantika Jillella, Ava Franks, Ganie DeHart
Abstract
As part of a longitudinal study, we conducted an analysis of physical, verbal, and relational aggression and RTP during sibling and friend interactions in middle childhood and adolescence. Age, partner, and gender all made a difference in rate and type of both aggression and RTP.
Subject Category
Social Science Categories: Psychology
Faculty Sponsor Department
Psychology
Faculty Sponsor
Ganie DeHart
This presentation will also be presented at:
Association for Psychological Science

32 • Observed Verbal Irony and Mothers' Perceptions of Adolescent Sibling and Friend Relationships

Grant Edmondson, Ty DiPonzio, Jackson Kelly, Rileigh LeVan, Evan Powers, Ganie DeHart
Abstract
As part of a longitudinal study of sibling and friend relationships, we examined adolescents' use of verbal irony in their interactions and how it may be related to mothers' perceptions of their relationships. While verbal irony is a common feature of adolescent communication, little observational research has been done on its use or on how mothers perceive it. We anticipated that mothers' perceptions of adolescents' relationships would be related to the adolescents' use of verbal irony, perhaps more so for sibling relationships than for friendships, due to their somewhat limited access to their children's interactions with friends.
Subject Category
Social Science Categories: Psychology
Faculty Sponsor Department
Psychology
Faculty Sponsor
Ganie DeHart
This presentation will also be presented at:
Association for Psychological Science
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

110 • Conflict Issues and Associated Features in Sibling and Friend Interaction in Childhood and Adolescence

Sophia Bobeck, Maddie Sepcaru, Samantha Marriott, Olivia Biesinger, Ganie DeHart

Abstract

This longitudinal study explored the issues in child and adolescent sibling and friend conflicts, as well as their association with various conflict features. Twenty-seven target children from white middle-class families in western New York were visited in their homes at ages 4, 7, and 17. At each age, they were videotaped in separate interactions with a sibling and with a friend. We examined how time (developmental stage), gender, and partner (sibling vs. friend) were associated with conflict issues (object, behavior, plans for play, and ideas/facts), as well as with rate of conflict, conflict duration, and conflict intensity. Time, gender, and partner all made a difference in conflict issues, as well as in conflict rate, duration, and intensity. In turn, conflict rate, duration, and intensity varied across conflict issues. This suggests that the reasons for and features of conflicts evolve throughout development and are shaped by both individual and relational contexts.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

64 • Children's Onlooker Behavior with Siblings and with Friends at Ages 4 and 7

Alexis Bertrand, Alexa Morose, Emma Michalak-Brown, Jocelyn Pepe, Ganie DeHart

Abstract

As part of a longitudinal study of sibling and friend interactions, we examined children's onlooker behavior with siblings and with friends at ages 4 and 7. We analyzed the interactions of 65 white, middle-class American children with siblings and friends at ages 4 and 7. All sibling pairs were 15-30 months apart in age; half were same-gender, half mixed-gender. At both ages, dyads were videotaped at home in semi-structured situations during separate sibling and friend visits, playing with experimenter-provided toys selected to foster social interaction. The videotapes were transcribed and coded for social engagement at 10-second intervals. Our findings reveal that age, partner, and sibling status all had significant impacts on the frequency of onlooker behavior. As expected, at both ages siblings spent more time in onlooker behavior than friends did. At age 4, younger siblings exhibited more onlooker behavior than older siblings did, whereas at age 7, older siblings spent more time in onlooker behavior than younger siblings did. The amount of onlooker behavior with friends did not change from age 4 to age 7 and did not differ between the target child and the friend. In early childhood, younger siblings may be more interested in watching what their older siblings are doing, while older siblings, may be focused on their own play. By middle childhood, as the age gap between siblings becomes less significant, play may become more reciprocal, and older siblings may become more concerned with ensuring that their younger sibling is following their ideas for play.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

This presentation will also be presented at:

The Association for Psychological Science

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

117 • Observed Prosocial Behavior and Mothers' Assessments of 7-Year-Olds' Sibling and Friend Relationships

Megan Howard, Maddie Rolston, Tavian Bell, Adele Lanphear, Ganie DeHart

Abstract

Our research focuses on the correspondence between 7-year-olds' observed prosocial behavior toward siblings and friends and mothers' perceptions of their children's relationships. Sibling relationships provide early opportunities for children to develop social understanding and to display prosocial behavior. However, there has been little research systematically comparing positive social behaviors between siblings during middle childhood or examining how mothers' perceptions of their children's interactions relate to actual sibling behaviors. As part of a longitudinal study, we examined connections between observed prosocial behavior by siblings and mothers' perceptions of their children's relationships. Forty-eight white, middle-class families from western New York participated in our study. For the purpose of the current study, prosocial behavior was defined as any voluntary behavior intended to benefit the other party or the relationship. Each target child was videotaped at home in separate free-play and construction sessions with a sibling. The videotapes were transcribed and coded for various specific types of prosocial behavior (attempts to help, attempts to engage, provides entertainment, let's/we statement, gives/offers, imitates/models, teaches, and laughs at), social symmetry (complementary dominant, complementary subordinate, or reciprocal), affective intensity, and whether the behavior was a response to the partner or spontaneous. Mothers completed questionnaires regarding their children's sibling and friend relationships. The questionnaires included 24 items designed to assess four relationship dimensions: asymmetry, intimacy/closeness, harmony/prosocial behavior, and conflict. We found some agreement between mothers' perceptions and observed prosocial behavior in sibling relationships, but no concordance between observed behavior and mothers' perceptions of friendships.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

This presentation will also be presented at:

Association for Psychological Science

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

137 • Latinx and African Immigrant College Students' Concepts of Mental Health and Family

Lia Carswell, Genevieve Wright, Marissa Clarke, Alexandra Ayers, Georgia Ross, Anna Pacholczak, Suzy Valerio Vargas, Angelina Necroto

Abstract

Our project will qualitatively examine Latinx and African immigrant college students' concepts of mental health and familial relationships. This mixed-methods study, grounded in phenomenological methodology, will utilize two main forms of data collection methods: an online survey questionnaire and individual, semi-structured interviews. Specifically, this research project has three main purposes: (1) to better understand the nature of Latinx and African immigrant college students' concepts of mental health and familial relationships during the period of emerging adulthood; (2) to analyze and better understand the nuances surrounding emerging adults' discussions of mental health and mental illness; and (3) to examine and contextualize the nature and relevance of familial relationships of Latinx and African immigrant college students in emerging adulthood and how they may affect Latinx and African immigrant adolescents' perceptions of their mental health. Participants will include 20 emerging adult college students who self-identify as Latinx or African immigrants. Eligibility will consist of: (1) being an enrolled college student between the ages of 18 and 25; (2) self-identifying as Latinx or African Immigrant; (3) having at least one sibling, and for African Immigrant participants, the last criteria will be being a first or second-generation immigrant. Immigration status will not be

screened due to the sensitive nature of the topic. Length of time in the United States will not be an excluding factor for participants. To widen our participant pool, we will also accept students studying abroad at SUNY Geneseo.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

This presentation will also be presented at:

Association for Psychological Science

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

262 • Exploring Gender, Task, and Mitigation in 7-Year-Olds' Assertive and Affiliative Language with Siblings and Friends

Natalie Thurston, Maisie Slesak, Sadie Stadler, Natalie Casey, Ella Ross, Ganie DeHart

Abstract

As part of a longitudinal study, the use of assertive and affiliative language in interactions between 7-year-olds and their siblings and friends was examined. We define assertive language as the use of directives with the purpose of accomplishing a goal. Affiliative language is defined as a more passive form of communication with the intent to maintain or establish social interaction. In previous research, the use of assertive and affiliative language has had gender implications, with boys using more assertive language and girls using more affiliative language (Leaper & Ayres, 2007). Research from our lab suggests that context and interpersonal relationships may have a greater influence on language use than gender alone. To examine this 66 7-year-olds were recorded completing three age appropriate tasks: construction, freeplay, and game with both their sibling and same age friend. Our findings did not support the previous research of girls using more affiliative language and boys using more assertive language. Instead, we found that task, partner, and gender composition all made a difference in assertive and affiliative language use. All of our findings support the importance of contextual factors when examining language.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

264 • Chinese-American Adoptee College Students’ Concepts of Sibling Relationships

Lauren Martin, Hermei Herman, Yanzhi Luo, Elizabeth Tsang, Lyndon Lowenstein-Niu

Abstract

This project will qualitatively examine Chinese-American adoptee college students’ concepts of sibling relationships, through both individual interviews and focus group interviews. Specifically, this research project has three main purposes: (1) to better understand the nature and relevance of Chinese-American adoptee college students’ concepts of sibling relationships during the period of emerging adulthood; (2) to paint a qualitative picture of the unique sibling dynamics this population possesses; (3) to analyze and better understand the effects of early relationship quality on current relationships in emerging adulthood. Participants will include 13 emerging adult college students, ages 18 to 25, who are Chinese American adoptees. Eligibility will include: (1) being an enrolled college student between the ages of 18 and 25; (2) having been born in China; (3) having been adopted during childhood by American Citizens; and (4) having at least one sibling. Participants will be recruited through personal contacts through school-based organizations on the Geneseo campus and Geneseo students living in the greater Rochester area. Participants will be invited to do semi-structured individual interviews and focus group interviews. Interviews will be performed either in person or on a secure

video conferencing platform. Interviews will be transcribed verbatim, and thematic analysis will be employed to analyze the interviews (Braun & Clarke, 2006). Based on previous literature and research from this lab, we expect findings and themes to emerge in the study, such as sibling conflict and sibling dynamics, as well as themes unique to Chinese adoptees related to cultural disconnect, historical factors, and cultural identity.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

This presentation will also be presented at:

Association for Psychological Science

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

271 • Gender Composition and Closeness on Siblings in Young Adulthood

Natalie Thurston, Kira Reeves, Mason Luskoff, Ganie DeHart

Abstract

As part of a longitudinal study examining sibling and friend relationships, we have followed a number of families over the course of three decades. With data collection points initially at 4- , 7-, and 17-years-old, we have continued to survey participants about their sibling relationships into early adulthood. This study intends to measure sibling closeness as defined by characteristics of positive affect, emotional empathy, and affectionate interactions (Shortt & Gottman, 1997). Past research has suggested that gender is associated with sibling closeness in early adulthood (Stocker et al., 2020). Specifically, female-female compositions rating the closest, followed by female-male sibling dyads, and lastly male-male compositions. To explore this hypothesis, our Western NY sample of same-sex and mixed-sex siblings filled out surveys answering questions on their relationship, closeness, and social support interactions. Early results suggest that gender composition in siblings is associated with closeness in early adulthood; however, we are conducting further analysis to strengthen our findings.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

145 • The Effect of Boredom Proneness on Binge Drinking in College Students

Marissa Napolitano, Sabrina LaRosa, Emily Cortese

Abstract

Within a college student's life, excitement and opportunity contrast with feelings of boredom. Boredom proneness is one's susceptibility to experience boredom (Struk et al., 2016). When experiencing boredom, individuals seek external stimuli to engage in their environment. Binge drinking and other risky alcohol use are common environmental features of college life. Increasing students' awareness of their emotions, such as boredom, can help reduce harmful practices, such as binge drinking. Past research has found sexual-minority youth are more likely to report risky alcohol use. These drinking practices may vary throughout college. It was hypothesized that boredom proneness will be positively associated with binge drinking in college students. Boredom proneness was measured using The Short Boredom Proneness Scale (Struk et al., 2017) and binge drinking was measured using items selected from the PhenX ToolKit. Participants were Introductory Psychology students (*N*=153) who completed an online survey assessing emotion regulation and substance use. Participants were primarily white (90.2%) female (83.7%) college students, with over a quarter (30.1%) identifying as a sexual minority. Logistic regression revealed a significant relationship between boredom

proneness and binge drinking (OR = 1.08; 95% CI [1.02,1.15]; p=.006). Sexual minority status and class standing were non-significant related to boredom proneness. Future research should examine how boredom proneness predicts future binge drinking and other risky drinking practices (e.g., pregaming). Identifying risk factors for problematic alcohol use will improve the ability to reduce alcohol-related harms in vulnerable college students.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

This presentation will also be presented at:

Collaborative Perspectives on Addiction Annual Meeting

149 • Cannabis Use Attitudes, Frequency, and Emotion Regulation in College Students

Riley Kawola, Bridget Maddigan

Abstract

Emotion regulation is the process through which people influence the emotions they experience and express, including the timing of emotional expression and experience (Gross, 1998b). Emotion regulation difficulties are a well-documented risk factor for substance use and misuse. Attitudes have been shown to directly impact behavior, specifically when they relate directly to the goals driving behavior (Baumeister & Finkel, 2010). When experiencing difficult or intense emotions, one may shift their attitudes to align with emotion regulation goals. We hypothesize that cannabis attitudes mediate the relationship between emotion regulation abilities and cannabis frequency. Participants were students (N= 72) enrolled in a 100-level psychology course surveyed during the 2021-2022 academic year. Participants completed an online survey including the Difficulties in Emotion Regulation Scale-18 (Victor & Klonsky, 2016), the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (Cutler & Spradlin, 2017), and items assessing cannabis-related attitudes. Attitudes were assessed using 8 items, assessing affect (e.g. Cannabis makes me feel relaxed/angry). Preliminary findings suggest a positive correlation between cannabis use frequency and emotion regulation difficulties (r = 0.26, p < 0.01); emotion related difficulties and affective attitudes (r = -.21; p<0.005); and affective attitudes and cannabis use (r = -.59; p<0.001). Analyses use an indirect effects model to examine whether cannabis use attitudes explain the relationship between emotion regulation abilities and cannabis frequency. The findings of this research will contribute to knowledge about college students' emotion regulation abilities and attitudes, which inform cannabis-related behavior.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

This presentation will also be presented at:

Comparative Perspectives on Addiction

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

199 • The Role of Impulsivity in Alcohol Use, Hangovers, and Academics

Cameron LaRosa

Abstract

A prevailing model of impulsivity, the UPPS model (Whiteside & Lynam, 2001), links features of impulsivity with alcohol use (Coskunpinar et al., 2013). Even though impulsivity is linked with alcohol use, it has yet to be linked to hangover frequency. Alcohol use in college students disrupts academic performance and motivation. While there is an established

relationship between alcohol with decreased academic performance and motivation, it is unclear whether impulsivity might predict poor academic motivation. Understanding college students' academic motivation is important since low motivation can prompt learning burnout and reduced self-efficacy. The current study investigates whether the UPPS model of impulsivity will be positively correlated with alcohol use, hangovers, lower GPA, and decreased academic motivation. Participants were college students (N=55) who completed self-report scales on impulsivity, alcohol use, hangovers, and academics. Results found impulsivity was not significantly correlated with alcohol quantity/frequency scores (r = 0.10, p = 0.48). However, hangover frequency was positively correlated with UPPS-P negative urgency (r = 0.30, p ≤ 0.05) and positive urgency (r = 0.29, $p \leq$ 0.05). Academic amotivation was positively correlated with UPPS-P premeditation (r = 0.31, p ≤ 0.05), perseverance (r = 0.41, $p \leq$ 0.01), and positive urgency (r = 0.28, p ≤ 0.05). Lastly, UPPS-P perseverance was negatively correlated with GPA (r = -0.48, $p \leq$ 0.01). Results provided evidence that impulsivity is associated with academic motivation and hangovers. Future analyses will consider whether alcohol use mediates the relationship between urgency and hangovers.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

204 • Examining the Relationship Between Emotion Regulation Ability and Cannabis Use Frequency

Nicolette Faller

Abstract

Emotion regulation is known to play a role in substance use behavior (Weiss, et. al., 2022), but the relationships with cannabis are not yet widely studied. This analysis examines how emotion regulation (ER) ability, measured by the Difficulties in Emotion Regulation Scale (DERS) 18 (DERS-18; Victor & Klonsky, 2016) is related to cannabis use frequency, measured by the Drug and Alcohol Frequency Questionnaire - Cannabis Use (DFAQ-CU) (DFAQ-CU; Cutler & Spradlin 2017). The hypothesis stated lower ER ability is a predictor of higher cannabis use frequency. 153 participants completed an online questionnaire including these measures, and the data were analyzed using correlation and ANOVA tests. The correlation test showed a significant positive correlation between DERS-18 score and cannabis use frequency (r = 0.263), suggesting greater ER difficulties are associated with increased cannabis consumption. To analyze further, variables were split into groups based on past month cannabis use occurrences and ER ability. An ANOVA test showed no significant differences in ER ability across use levels (low, near daily, and daily use), r = 0.09, p < .05. Another ANOVA showed level of ER ability (DERS score separated by top, middle, and bottom third score) is a predictor of cannabis use frequency between the bottom and middle third score levels. These findings show an association between ER ability and cannabis use frequency, suggesting that ER ability could be an important factor in predicting cannabis use frequency. These findings should be further studied to increase knowledge and awareness on the relationship between ER and substance use behaviors.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

This presentation will also be presented at:

SUNY Undergraduate Research Conference

218 • Does Substance Use Frequency Predict Emotion Regulation?

Destiny Pichardo

Abstract

This study investigates the relationship between alcohol frequency and cannabis frequency on emotion regulation strategies. Previous studies suggest that higher substance use is associated with maladaptive emotion regulation, including expressive suppression. It was hypothesized that participants who report frequent substance use will also report expressive suppression. 153 SUNY Geneseo students completed a self-report survey from Geneseo's SONA system, assessing their emotion regulation strategies, substance use, cannabis use motives, attitudes, and demographics. The measures included the Emotion Regulation Questionnaire expressive suppression subscale (Gross & John, 2003), alcohol frequency using 1 item selected from the PhenX ToolKit (Hamilton et al., 2011), and the cannabis use frequency subscale of the the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (Cutler & Spradlin, 2017). A Pearson correlation found no significant correlation between suppressive and cannabis (*r = -0.05, p = 0.28*) or alcohol frequency (r = -0.03, p = 0.37). However, cannabis frequency and alcohol frequency were positively correlated (*r = 0.25, p = .002*), indicating a possible pattern of co-use. A multiple regression analysis showed that alcohol frequency (β= -0.02), 95% CI [-0.23, 0.19] and cannabis frequency (β= -0.05), 95% CI [-1.36, 0.79] were nonsignificant, p = .82, indicating that these variables did not significantly predict expressive suppression. These findings challenge prior research linking substance use and expressive suppression, highlighting the need for further investigation into the complex factors influencing emotion regulation in college-age students.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

Funding Sources

McNair Scholars Program Support

124 • Movie Preferences and Emotional Desensitization

Riley Bowersox, Ashley Ilarraza, Peyton Cartwright

Abstract

The purpose of this study was to assess the association between the enjoyment of different movie genres (i.e., thriller, horror, sports-themed, and romantic-comedy) and emotional desensitization to violent and gory stimuli. Ninety-three participants rated how much they liked the aforementioned movie genres. Next, they watched two video clips from two different horror movies (e.g., *Saw X, Talk To Me, Final Destination 2, Final Destination 5,* and *Evil Dead Rise*) for a total of seven minutes. Afterwards, participants reported their current positive and negative mood states. Results indicated that only participants who liked horror showed a reduction of fear and an increase in feelings of joy after watching violent and gory imagery. These results support the contention that viewing horror movies increases emotional desensitization.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Steven Kirsh

58 • Neural Efficiency from Resting State to Empathy Processing and Its Association with Internalizing Symptoms

Isabella Wong, Ariana D'Onofrio, Taryn DeFusco, Maxwell Mesi, Michelle Fitting, Michael Lynch

Abstract

Resting state neural activity has been associated with variations in trait empathy, as well as differences in internalizing symptomatology. The current study sought to examine the relationships among resting state activation, empathy, and symptoms of depression and anxiety. Resting state neural activity and activity during empathy processing tasks were measured by changes in oxygenation levels across the dorsolateral prefrontal cortex (DL-PFC) using functional near-infrared spectroscopy (fNIRS). Elevated resting state activation was associated with less efficient neural activity during two subsequent empathy processing tasks: the Frith Happé Animations task and an abbreviated form of EU Empathy Stimuli. The Frith Happé task measured Theory of Mind (ToM) capabilities as participants categorized the movement of animated triangles as reflecting either mental, physical, or no interaction. The EU measured emotional recognition as participants watched silent videos depicting emotionally salient social interactions between two people and identified the emotions of each person. Afterward, participants were disconnected from the fNIRS and completed the State-Trait Anxiety Scale and Beck's Depression Inventory to assess for internalized symptomatology. Patterns of resting state and task-related neural activation significantly interacted with each other in predicting internalizing symptoms. Cluster analysis identified a specific pattern of elevated activation during resting state, deactivation during ToM, and activation again during the EU emotion recognition task. This pattern correlated with increased internalizing symptoms. The findings suggest that less efficient neural activity is associated with internalizing symptomatology.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Michael Lynch

This presentation will also be presented at:

The 2025 Association for Psychological Science Annual Convention

229 • Power Dynamics in Close Peer Relationships: Associations with Adjustment

Lily Finnegan, Grace Morichelli, Elise Cleary

Abstract

Very little research has examined power in peer relationships, as they are assumed to be egalitarian (Blieszner & Adams, 1992). Although this is generally found to be true for college students (Furman & Buhrmester, 1992), this isn't always the case. In romantic relationships, having equal power or more power has been associated with higher self-esteem (Galliher et al., 1999; Hall & Knox, 2019). This presentation highlights preliminary analyses from an ongoing project examining associations between perceived power and adjustment among college students in their same-sex friendships, other-sex friendships, and romantic relationships. We used cluster analysis to group the students into four profiles based on their reports of the power dynamic in these three relationships. Students who felt that they had more power in all three relationships had the best self-esteem and the lowest levels of internalizing problems and externalizing problems. In the other clusters, the power dynamic in their romantic relationship seemed to have the strongest association with their self-esteem and adjustment outcomes.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Karen Mooney

187 • Exposure to THC Throughout Adolescence Produces Long-Term Deficits in an Object Recognition Task in Rats

Hermei Herman, Marianna Santabarbara, Sarah Gusefski, Charlie Wilson

Abstract

With the recent legalization of cannabis across various states, it is becoming more accessible for both medicinal and recreational usage. However, within the medical community, there has been a rise in the possible adverse health concerns of the recent emergence of its recreational use. Tetrahydrocannabinol (THC), is one of the 113 cannabinoid compounds that are more commonly used for its medicinal purposes to treat certain medical conditions, alleviating symptoms of nausea, lack of appetite, and bodily pain. Yet, THC is still largely used recreationally, and one of the primary users are adolescents. The long-term effects of THC exposure are still largely unknown, but with what is currently being discovered, we can acknowledge the potential negative effects that this drug can have on our youth's development. The present study uses Long Evans rats to show how THC exposure has affected memory in the long term. The sample of rats was divided into groups that had varying levels of THC exposure along with a control group. They were given an object recognition task over the course of 3 consecutive days to see how well they performed in recognizing familiar and unfamiliar objects.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Vincent Markowski

Funding Sources

McNair Scholars Program Support

280 • Perinatal Tetrahydrocannabinol Reduces Hippocampal Volume and GABA Neuron Density in Adult Rat Offspring

Sonya Lyalikov, Tahera Stevens, Zander Purcell

Abstract

Delta-9-Tetrahydrocannabinol (THC) is the primary psychoactive compound in marijuana. It is used during pregnancy as a perceived naturopathic treatment for nausea, pain, and as a sleep aid. THC interacts with the fetal endocannabinoid system, which plays a crucial role in neuronal differentiation and development, yet its impact on fetal brain development is understudied. The current project hypothesizes that THC exposure during development reduces GABAergic interneurons within critical brain regions, such as the hippocampus and nucleus accumbens. To test this, rats were orally administered a dose range of THC during pregnancy and lactation. After assessing the cognitive and motor functions of the exposed offspring, brains were sectioned, stained with immunohistochemical (IHC) techniques to label GABA neurons, and quantified using microscopy. Results are expected to demonstrate a reduction of hippocampal volume due to decreased GABAergic interneuron density, providing further insight into the neurobiological consequences of THC exposure on developing brains.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Vincent Markowski

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant) and National Institute on Drug Abuse Award Number 1R15DA042390-01A1

281 • Effects of Advancing Age on Motor and Somatosensory Functions in Rats Exposed to Tetrahydrocannabinol During the Perinatal or Juvenile Developmental Periods

Charlie Wilson

Abstract

Prior studies have suggested various physiological and behavioral impairments following adolescent exposure to tetrahydrocannabinol (THC) – the primary psychoactive compound in marijuana. As marijuana legalization continues to expand both for medical and recreational use, concerns have arisen over the long-term effects of consumer use of THC in teens. The present study aimed to identify potential psychomotor and somatosensory effects of THC in Long-Evans rats. Two exposure cohorts were created: a perinatal cohort (gestation until weaning) and a juvenile cohort (throughout the pubertal period). Motor function was assessed using a grip strength test, while somatosensory function was assessed using a tail-flick apparatus that elicited a somatosensory reflex. Both tests were administered at three age points: young adulthood, middle age, and senescence. Preliminary results suggest that there are differences in grip strength and somatosensory reflex latency time for the exposed rats compared to control groups, and that these effects persist over time. Our initial findings will be further interpreted to properly educate the public on the potential deleterious effects of marijuana use by pregnant women and teens.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Vincent Markowski

Funding Sources

National Institute on Drug Abuse Award Number 1R15DA042390-01A1

282 • Juvenile Exposure to Tetrahydrocannabinol Affects Anxiety in Adult Long-Evans Rats

Atoria Hamm, Anna Burdick-Biernbaum, Karla Colley, Eddie Galarza, Gabe Spanbauer

Abstract

Society's perception of cannabis has evolved significantly, and the laws that once prohibited it have changed as its popularity has grown. Many individuals have come to regard cannabis as a naturopathic treatment for anxiety although research has shown that acute administration of THC has biphasic effects on anxiety in both humans and rats. It is anxiolytic at low doses and anxiogenic at high doses. However, relatively little research has been done on the long-term effects following exposure throughout critical periods of brain development. The current study examined anxiety behaviors in adults that had been administered a daily oral dose of 0, 5, or 10mg/kg THC from postnatal day 22-40. To test this, we used the elevated plus maze (EPM), an X-maze apparatus that produces a conflict between the rat's natural tendency to explore and forage while avoiding bright, open spaces. Anxious rats spend a greater portion of the test time in the closed, darkened maze arms and perform fewer arm entries. Videos were later scored to determine the duration (sec) in the open and closed arms, number of entries into the open and closed arms, and the ratio of closed arm to open arm entries. Video analysis is ongoing for this work in progress to determine if THC disrupts emotional processing in rats.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Vincent Markowski

Funding Sources

McNair Scholars Program Support and National Institute on Drug Abuse Award Number 1R15DA042390-01A1

283 • A CB1 Receptor Antagonist Disrupts Rest/Activity Cycles in the Long-Evans Rat

Megan Jurain

Abstract

The current study used a noninvasive infrared activity-monitoring system and VitalView software to examine the effects of a cannabinoid 1 receptor (CB1) antagonist drug, AM251, on locomotor activity/rest cycles in the home cage. Daily injections of 0.0, 0.75, 1.5, and 3.0 mg/kg were administered in a counterbalanced order and circadian activity was

examined over a 5-day period. Animals were observed for undesirable effects immediately after injections such as altered posture or excessive grooming. The higher doses of AM251 appeared to produce heightened motor activity. Data analysis is ongoing to determine if disruption of the cannabinoid system produced persisting effects on the sleep/wake cycle.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology

Faculty Sponsor

Vincent Markowski

Funding Sources

Geneseo Foundation Undergraduate Summer Fellowship and National Institute on Drug Abuse Award Number 1R15DA042390-01A1

196 • Perfectionist Self-Presentation and Social Media Motives as Mediators of Narcissism and Problematic Social Media Use

Gabrielle Diverde, Nieve Mahood, Anna Arehart, Kaela Dimanlig

Abstract

According to the Compensatory Internet Use Theory (Kardefelt-Winther, 2014), individuals may use social media to compensate for challenges they may experience socially and/or to meet certain psychological or emotional needs. This compensation may increase the risk of problematic social media use, including addiction and stalking behavior. Researchers have linked both grandiose narcissism (exhibitionism, self-importance, and reflecting self-perceptions of grandiosity and dominance) and vulnerable narcissism (hypersensitivity to the opinions of others, defensiveness, and insecurity) to problematic social media behaviors. We examined both grandiose and vulnerable narcissism as predictors of social media stalking and addiction, with perfectionistic self-presentation and social media motives as mediators. Results indicated that perfectionistic self-presentation and fear of missing out fully mediated the relationship between vulnerable narcissism and addiction and stalking. In contrast, perfectionistic self-presentation and praise/popularity motives when using social media fully mediated the relationship between grandiose narcissism and addiction and stalking. In addition, using social media to hurt/punish others fully mediated the relationship between grandiose narcissism and stalking. Implications for interventions to reduce social media addiction and stalking are discussed.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Monica Schneider

This presentation will also be presented at:

Association for Psychological Science 2025

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

115 • Victim Blaming and Support Provision in Close Significant Others Posttrauma

Jilana Bayley, Benjamin Sanchez, Natalie Thurston, Katherine van Stolk-Cooke

Abstract

Social support is a well-established protective factor for trauma recovery (Calhoun et al., 2022; Pinto el al., 2017, Sippel et. al, 2024), and close significant others (CSOs; i.e., family, romantic partners and friends), are often primary sources of post trauma social support (Davies et al., 2025). However, survivors frequently report victim blaming behaviors in their CSOs, wherein CSOs implicitly or explicitly communicate to survivors that they were responsible for the traumatic event (Bonnan-White et al., 2018). While victim blaming is associated with poorer survivor recovery and diminished

posttrauma support (Bonnan-White et al., 2018), there is limited literature on how CSOs perceive the relationship between blame and their experiences as support providers. In the present study, 351 CSOs of recent trauma survivors were recruited through online crowdsourcing and asked about their experiences as support providers. Blame was negatively associated with support provision frequency (β = -0.132, p = 0.004), suggesting that higher blame scores were associated with less supportive behavior in CSOs. Blame was positively associated with support provision difficulty (β = 0.269, p < .001), indicating that higher blame scores were associated with greater difficulty enacting support. Findings suggest that CSOs who blame trauma survivors for the traumatic event struggle to provide posttrauma social support compared to those who do not. In the future, longitudinal research should be conducted to examine the causal relationship between victim blaming and support provision from the CSO perspective.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

This presentation will also be presented at:

Association of Behavioral and Cognitive Therapies

116 • Examining Differences in Posttrauma Accommodation Behaviors Across Survivors' Family, Romantic Partners and Friends

Lydia Benjamin, Natalie Thurston, Ben Sanchez, Katherine van Stolk-Cooke

Abstract

Prior work has found that close significant others (CSOs; i.e., family, friends and romantic partners) providing social support to trauma survivors are at risk of engaging in accommodation (i.e., attempts to help survivors avoid distress), and therefore may unintentionally impede survivor recovery (Campbell et al., 2017). However, it is unknown whether accommodation behaviors vary by relationship type. The present study surveyed 351 CSOs via online crowdsourcing who had provided social support to a trauma survivor within the last year. Results revealed a significant effect of relationship type on accommodation, F(2, 327) = 5.58, p = .004, indicating accommodation differs significantly by relationship type. Post-hoc pairwise comparisons showed that there was no significant difference in accommodation between family members and romantic partners, t(327) = -0.27, p = .96. However, significant differences were found between friends and family, t(327) = 3.10, p = .006, and between friends and romantic partners, t(327) = 2.66, p = .022. Findings suggest that friends are significantly more likely to report engaging in posttraumatic accommodation than family or romantic partners. Future studies should explore how accommodation by each type of CSO influences trauma survivor recovery longitudinally.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

This presentation will also be presented at:

Association of Behavioral and Cognitive Therapies

118 • The Association Between Relationship Satisfaction and Social Support Provider Experiences After Trauma

Natalie Thurston, Ben Sanchez, Katherine van Stolk-Cooke

Abstract

Social support is widely considered a crucial protective factor after trauma exposure (Ozer et al. 2003). Although it is highly likely that the relational health of trauma survivors and their close significant others (CSOs; i.e., friends, family

members and romantic partners) shape social support quality and quantity, very little work has been done to examine these contextual factors, especially from the support provider perspective. The present study aimed to examine whether relationship satisfaction moderated the association between survivor posttraumatic stress symptoms (PTSS) and CSO social support provision experiences. CSOs (N=351) of recent trauma survivors were surveyed using online crowdsourcing. Results suggested a significant main effect of relationship satisfaction on support provision frequency (B = .38***) and difficulty (B = -.36***), while accounting for the effects of survivor PTSS. However, relationship satisfaction did not significantly moderate the association between survivor PTSS and CSO support provision experiences. The findings suggest that CSOs with greater relationship satisfaction provide more frequent posttrauma social support and experience less difficulty doing so. In the future, longitudinal studies should explore whether the relationship between these variables is causal.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

This presentation will also be presented at:

Association of Behavioral and Cognitive Therapies

Funding Sources

Geneseo Foundation Student Research Assistantship

119 • Posttrauma Accommodation and Social Support Provision Experiences in Close Significant Others

Hunter Phillips, Ben Sanchez, Natalie Thurston, Katherine van Stolk-Cooke

Abstract

While social support from close significant others (CSOs; i.e., family, romantic partners and friends) is a crucial factor in trauma recovery, CSO accommodation (i.e., altering one's behavior to avoid or alleviate trauma survivor distress) is associated with symptoms of nonrecovery such as posttraumatic stress symptoms. While it's likely that accommodation is related to support provision experiences of CSOs, there is limited research on this topic, particularly from the support provider perspective. The present study examined accommodation and social support experiences in a sample of 351 CSOs recruited via online crowdsourcing. Accommodation of anger in trauma survivors was negatively associated with support frequency, such that CSOs who felt that they had to accommodate anger offered less support to trauma survivors. By contrast, accommodation of anxiety in trauma survivors was positively associated with support frequency, such that CSOs who accommodated anxiety also offered more social support. Accommodation of anger was significantly associated with perceived difficulty enacting support, while accommodation of anxiety was not. The strength of the results suggests that CSO's accommodation of behavior is associated with the overall frequency and difficulty of the support provision experience; however, the strength and nature of this relationship differs depending on what types of emotion reactions the CSO is trying to avoid in trauma survivors. Future work should take a longitudinal and dyadic approach to examining these relationships among CSOs and trauma survivors to provide a better understanding of how accommodation may influence the quantity and quality of posttrauma social support survivors receive.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

This presentation will also be presented at:

Association of Behavioral and Cognitive Therapies

120 • Examining Support Provision Experiences After Traumatic Injury: A Replication Study

Benjamin Sanchez, Natalie Thurston, Katherine van Stolk-Cooke

Abstract

Social support from close significant others (CSOs; i.e., friends, family and romantic partners) is considered essential to trauma recovery (Ruzek et al., 2007). In a prior examination of romantic partners who had supported traumatic injury survivors, we observed that difficulty providing support was associated with perceptions of sustained functional impairment in survivors, while frequency of support provision was not associated with perceived improvements in impairment. This study was designed to replicate these findings in a broader sample of CSOs and across all DSM-5 criterion A trauma types. Friend, family, and romantic partner CSOs (N=351) who had provided social support to a trauma survivor within the last year were recruited online via crowdsourcing. Support provider experiences, relationship satisfaction, and collateral impressions of survivor posttraumatic stress symptoms and changes in functional impairment were assessed via a web survey. Results were consistent with hypotheses, suggesting a significant association between difficulty providing support and sustained survivor impairment (β = 0.27, p =.000), while there was no significant relationship between support frequency and survivor impairment (β = .03, p = .55). Findings replicate our previous finding in a broader CSO sample and across all forms of trauma exposure. Results add to a small but growing literature on CSO experiences providing posttrauma support and further emphasize the need to equip CSOs with adequate information and assistance as they strive to help loved ones recover from trauma.

Subject Category

Social Science Categories: Psychology

Special Topic Information

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

This presentation will also be presented at:

Association of Behavioral and Cognitive Therapies

Funding Sources

Jason and Diana Kyrwood '95 Student/Faculty Research Endowed Summer Fellowship

294 • Is Advice Actually Social Support? Examining Informational Support for Trauma Recovery from the Support Provider Perspective

Natalie Thurston, Ben Sanchez, Katherine van Stolk-Cooke

Abstract

While social support is an established protective factor for trauma recovery, not all social support types are equally effective. Common support types like informational support (i.e., advice, reframing), emotional support (i.e., sympathy, empathy, expressions of concern), and tangible support (i.e., offers of aid or intervention) could vary in trauma support recovery efficacy. Previous research has explored the negative connotations of unsolicited advice on trauma recovery, yet barely any research has examined the support provider perspective. We recruited 351 close significant others (CSOs; i.e., friends, family, romantic partners) of recent trauma survivors through online crowdsourcing and asked them to fill out surveys targeting their support provider experiences. Results showed CSOs offering emotional support more than informational and tangible support. Informational support was also reported as more difficult to provide than emotional and tangible support. A majority of the CSOs wrote their trauma survivor an informational message and fewer than a third of CSOs included emotional support in their message. After running regression analyses, informational support provision was associated with sustained survivor impairment (β =.14**), while emotional and tangible support frequencies were not. Difficulty providing emotional (β =.14**) and tangible support (β =.15**) was associated with sustained survivor impairment, but difficulty providing informational support was not. These results support previous findings of advice being associated with sustained survivor impairment and provide a new perspective on the support provision experience from the support provider. Further longitudinal and dyadic studies may better explore these links.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Katherine van Stolk-Cooke

Funding Sources

Geneseo Foundation Undergraduate Summer Fellowship

STUDENT VOLUNTEERISM AND COMMUNITY ENGAGEMENT

169 • Knights' Harvest Pantry: SUNY Geneseo's On-Campus Food Pantry

Matthew McGowan, Fiona Foley, Grace Sutherland, Talia Weidberg

Abstract

Knights' Harvest Pantry (previously known as The Pantry at Geneseo) is a recent addition to the SUNY Geneseo campus, beginning operation only as recently as 2021. On the Geneseo campus, students are finding that they are having issues securing food to sustain themselves on a weekly basis. Addressing this issue should be a top priority on campus, as student's who are food insecure tend to have a lower graduation rate and are less likely to obtain an undergraduate degree. Through funding provided through grants from the SUNY system, our team looked to increase the number of pantry users, increase the space available for Knights' Harvest and locate a reliable food source for an increasing number of users. Our poster aims to summarize how we as student coordinators achieved these goals and discuss our efforts in fighting food insecurity.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Student Volunteerism and Community Engagement

Faculty Sponsor

Cheyenne DeMarco

Funding Sources

Funding is provided through ongoing state-supported operating funds to provide sustainable financial assistance for SUNY campus food pantries. SUNY Article link: https://www.suny.edu/suny-news/press-releases/9-23/9-6-23/

VETERANS SERVICES (OFFICE OF ADVISING)

292 • Our Veteran and Military-Affiliated Students and What We Can Do for Them

Jaime Arena, Jackson Correia

Abstract

Veterans and military-affiliated students have made massive sacrifices in the name of service and deserve the best Geneseo has to offer. Services for veterans and military-affiliated students on campus are lacking or outright unavailable. Veterans and military-affiliated students are often unaware of each other's presence on campus, in addition, veterans undergo a significantly different college experience than most who attend directly following high school. We intend to bridge the gap between academia and veteran/military-affiliated students by connecting them to each other and providing new and improved resources to enhance their academic experience and push them to success.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Veterans Services (Office of Advising)

Faculty Sponsor

Jaime Arena

Funding Sources
Faculty Research Development Award

INDEX OF STUDENT, FACULTY, AND STAFF PARTICIPANTS

ACKNOWLEDGEMENTS

GREAT Day Advisory Council
Ganie DeHart, Psychology
Graham Drake, English
Corey Ha, Milne Library
Caroline Haddad, Mathematics
Susan Salmon, School of Education

Music Festival Chair
Kara Cornell, Music

GREAT Day Art Exhibit Coordinator
Dan DeZarn, Office of Sustainability

GREAT Day Technical Team
Laurie Fox, Computing & Information Technology
Tracy Paradis, Fraser Library

The Proceedings of GREAT Day Team
Allison Brown, Fraser Library
Max Sparkman, Fraser Library
Daniel Ross, Fraser Library
Nia Jones, Student Editor
Hailey Bernet, Student Editor

The GREAT Day Student Team
Sophia Imbriaco, GREAT Day Intern, Scheduling & Events
Kierstyn Hager, Sponsored Research

The GREAT Day Staff Team
Lytton Smith, GREAT Day Faculty Chair, English
Pallavi Panda, GREAT Day Faculty Vice Chair, Business
Andrea Klein, Scheduling & Events
Anne Baldwin, Sponsored Research
Alexis Clifton, Teaching & Learning Center
Betsy Colón, Grants Management
Paul Jackson, Computing & Information Technology
Sheila McCart, Grants Management

GRRRREAT Dogs Team
Michele the Therapy Dog
Marci Frutkoff, Michele's handler and campus companion
Myko the Therapy Dog
Karie Frisiras, Myko's owner and handler
Alana Nuth, Milne Library
Allison Brown, Milne Library

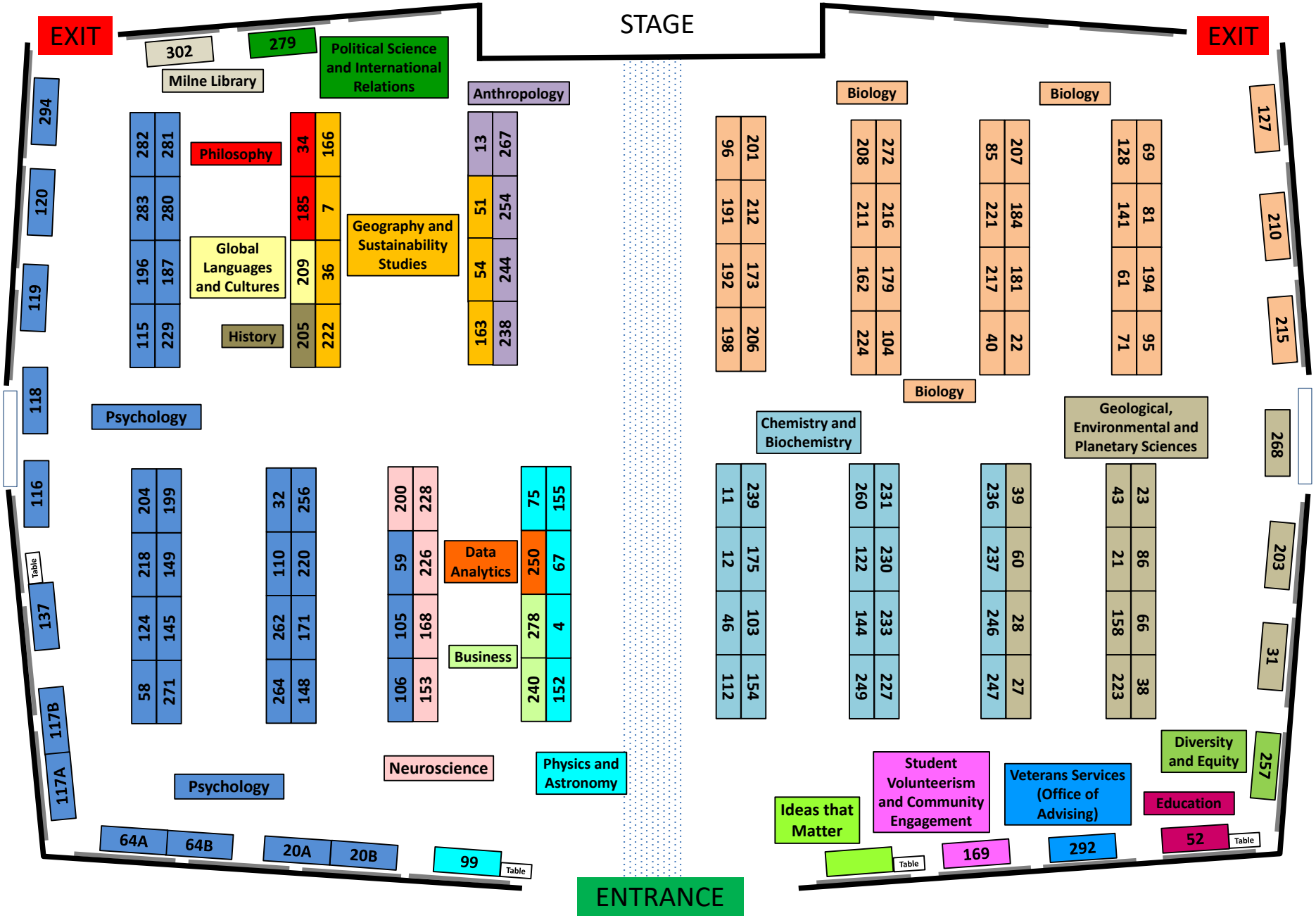
Other Individuals
Minhhang Huynh, Duplicating Center
Laura Canfield, Duplicating Center
Monique Patenaude, Communications and Marketing
Tonya Pritchard, SUNY Geneseo LIVES Program

GREAT Day Volunteers
Hillary Arinze
Kaleighanne Athens
Kristy Barkan
Lisa Bishop
Annelise Buck
Sherri Bush
Julia Candee
Benjamin Carlson
Ho Seong (Kevin) Chung
Kaitlyn Conway
Mae Cowles
Erin Crowell
Cheyenne DeMarco
Chitoo Ejinkonye
Samantha Ferretti
Corrina Filek
Kurt Fletcher
Morgan Gardner
Rachael Garvey
Oscar Gordon
Jamie Greene
Abigail Hildebrant
Eduardo Imbert
Madyson Itwaru
Avantika Jillella
Sophie Johnson
Olivia Kelsick
Jordan Lampack
Paravi Mandowara
Kayla Mang
Olivia Marra
Matthew Messina
Sofia Miner
Julianne Mora
Ujunwa Nnamonah
Julie Oas
Josephine Ogilvie
Heather Overholt
Jeffrey Petrie
Kya Primm
Christie Reed
Franklin Rivas
Alex Rouse
Emily Rowe
Roxana Sammons
Tary Santelises
Anamaria Santos Mendez
Mary Saporito
Anna Sereluca
Nina Sheely
Wilhemina Takyi
Fiona Taylor
Meghan Tiede
Aaron Weber
Julia Weber
Emma Wolfe
Ella Zaremski

Special Thank You:
President Denise Battles and Provost Mary Toale for their support of GREAT Day.
Jack and Carol Kramer for their support through the GREAT Day endowed lectureship.
The SUNY Geneseo Student Association for their support of meal gift cards.
All the students, faculty, and staff who are participating in GREAT Day.

GREAT Day is supported by:
Office of the President
Office of the Provost
Jack '76 and Carol '76 Kramer Endowed Lectureship
SUNY Geneseo Student Association
Campus Auxiliary Services

GREAT Day 2025 Poster Locations



Posters are grouped by department/program/office and are identified by **abstract submission number**