Wednesday, April 24

Welcome to SUNY Geneseo's Eighteenth 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 2024, which will be held on Wednesday, April 24, 2024.

The keynote address by Renée Cummings will be held on Wednesday, April 24, 2024, 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 2024 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 that promote sustainability are designated by a leaf symbol - 🍃 - in this program.

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ABOUT THE VIRTUAL GREAT DAY PROGRAM:

- GREAT Day 2024 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 2024 Schedule at a Glance

KICK-OFF COFFEE HOUR HONORING 1-, 10- AND 15-YEAR SPONSORS AND PRESENTATION OF THE 2023 PROCEEDINGS OF GREAT DAY	9:00 AM - 9:45 AM	Fraser Library
MEET MICHELE, OUR GREAT DAY THERAPY DOG!	9:45 AM - 11:00 AM	Fraser Library
CONCURRENT SESSION 1	10:00 AM - 11:15 AM	
1A: Interrogating Historical Narratives of Power, Gender, and Sexuality	10:00 AM - 11:15 AM	Bailey 101
1B: Philosophy Changing the World Today	10:00 AM - 11:15 AM	Bailey 102
1D: Sociology of Emotions and Human Flourishing	10:00 AM - 11:15 AM	Bailey 104
1E: Women's and Gender Studies Capstone Panel 1	10:00 AM - 11:15 AM	Bailey 105
1F: Edgar Fellows Capstones Panel 1	10:00 AM - 11:15 AM	Bailey 201
1G: Edgar Fellows Capstones Panel 2	10:00 AM - 11:15 AM	Bailey 202
1H: Applying Mathematics	10:00 AM - 11:15 AM	Bailey 203
1I: Business Impact	10:00 AM - 11:15 AM	Bailey 204
1J: Chemistry Honors Research Panel	10:00 AM - 11:15 AM	Welles 115
1K: Medieval Intersections	10:00 AM - 11:15 AM	Welles 117
1L: Communicating Through Silent Narrative Film	10:00 AM - 11:15 AM	Welles 119
1M: The World Through Dance	10:00 AM - 11:15 AM	Welles 128
1N: New Perspectives in Sociomedical Sciences	10:00 AM - 11:15 AM	Welles 131
1O: Warping Through L.I.V.E.S.	10:00 AM - 11:15 AM	Newton 202
POSTER PRESENTATION VIEWING OPENS (Authors will be present during the 2:30 - 4:30 PM Poster Presentation Session)	10:00 AM - 04:30 PM	
GREAT DAY STUDIO ARTS SHOWCASE (Artists will be present during the 4:15 - 5:00 PM Meet the Artists Session)	10:00 AM - 06:00 PM	Lederer Gallery
JAZZ ENSEMBLE	11:00 AM - 11:30 AM	Wadsworth Auditorium
CONCURRENT SESSION 2	11:30 AM - 12:45 PM	
2A: Mock Trial Exhibition	11:30 AM - 12:45 PM	Bailey 101
2B: 2024 Student Ambassadors	11:30 AM - 12:45 PM	Bailey 102
2C: From Tourist to Scholar in Tuscany	11:30 AM - 12:45 PM	Bailey 103
2D: Sociology of Love and Emotional Energy	11:30 AM - 12:45 PM	Bailey 104
2E: Women's and Gender Studies Capstone Panel 2	11:30 AM - 12:45 PM	Bailey 105
2F: Edgar Fellows Capstones Panel 3	11:30 AM - 12:45 PM	Bailey 201
2G: Edgar Fellows Capstones Panel 4	11:30 AM - 12:45 PM	Bailey 202
2H: Edgar Fellows Capstones Panel 5	11:30 AM - 12:45 PM	Bailey 203
2I: Narratives of Self-Representation as Exposure and Celebration of Black/African Resilience, Strength, and Art	11:30 AM - 12:45 PM	Bailey 204
2J: Fugitives, Free Labor, and Fortifications: Rethinking the Civil War Era	11:30 AM - 12:45 PM	Welles 115
2K: Economics Matters	11:30 AM - 12:45 PM	Welles 117
2L: The Roles of Data and HR in Business	11:30 AM - 12:45 PM	Welles 119
2M: Applications of Science	11:30 AM - 12:45 PM	Welles 128
2N: Understanding the World Around Us	11:30 AM - 12:45 PM	Welles 131
2O: Learning in and from the World Around Us	11:30 AM - 12:45 PM	Welles 132

2P: Genre, Generation, Media	11:30 AM - 12:45 PM	Welles 133
LOW BRASS ENSEMBLE	11:30 AM - 12:00 PM	Multicultural Center Blake Hall
LET'S SING AND DANCE	12:45 PM - 1:00 PM	Multicultural Center Blake Hall
KEYNOTE: RENÉE CUMMINGS - JACK '76 AND CAROL '76 KRAMER ENDOWED LECTURESHIP	1:00 PM - 2:15 PM	Wadsworth Auditorium
MUSICAL THEATRE & MODERN DANCE SHOWCASE: PROCESS UNFOLDING	2:30 PM - 3:30 PM	Brodie Austin
POSTER PRESENTATION SESSION	2:30 PM - 4:30 PM	MacVittie College Union Ballroom
STRING BAND PERFORMANCE	3:45 PM - 4:15 PM	MacVittie College Union Lobby
MEET THE GREAT DAY ARTISTS	4:15 PM - 5:00 PM	Lederer Gallery
CONCURRENT SESSION 3	4:30 PM - 5:45 PM	
3A: Learning Literacy Through Play	4:30 PM - 5:45 PM	Bailey 101
3B: Internships for English Majors: A Round Table	4:30 PM - 5:45 PM	Bailey 102
3C: Recent Research in Chemistry	4:30 PM - 5:45 PM	Bailey 103
3D: Who's the Boss? Presidents, the Fed, Inflation, and the Economy	4:30 PM - 5:45 PM	Bailey 104
3E: Women's and Gender Studies Capstone Panel 3	4:30 PM - 5:45 PM	Bailey 105
3F: Edgar Fellows Capstones Panel 6	4:30 PM - 5:45 PM	Bailey 201
3G: Edgar Fellows Capstones Panel 7	4:30 PM - 5:45 PM	Bailey 202
3H: The 2024 ECA Conference Presenters	4:30 PM - 5:45 PM	Bailey 203
3I: Discoveries in Anthropology	4:30 PM - 5:45 PM	Bailey 204
3J: Flash Presentations: Breaking New Ground	4:30 PM - 5:45 PM	Welles 115
3K: Where Did That Word Come From: Reports from the History of the English Language	4:30 PM - 5:45 PM	Welles 117
3L: Black Humanities: The 1619 Project	4:30 PM - 5:45 PM	Welles 119
3M: New Dynamics in Biology and Biochemistry	4:30 PM - 5:45 PM	Welles 128
3N: History of Mathematics	4:30 PM - 5:45 PM	Welles 131
A CAPELLA HOUR	4:30 PM – 5:30 PM	Multicultural Center Blake Hall
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 AND PRESENTATION OF THE 2023 PROCEEDINGS OF GREAT DAY

Wednesday, April 24th, 9:00-9:45 AM, Fraser 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 18th 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

Avan Jassawalla, School of Business
Jeff Johannes, Mathematics
Andrzej Kedzierawski, Mathematics

Darrell Norris, Geography and Sustainability Studies
Paul Pacheco, Anthropology
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10-YEAR SPONSORS

Travis Bailey, Biology
Elizabeth Hutchison, Biology
Weston Kennison, English
David Levy, Philosophy

Vincent Markowski, Psychology
Jeffrey Peterson, Chemistry
Stephen Tulowiecki, Geography

FIRST-TIME SPONSORS

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

Byeong-Hak Choe, School of Business
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Anthony LaLena, Music and Musical Theater

Li Lu, School of Business
Michael Tenalio, School of Business
Allison Thomashefski, Theatre and Dance
Cassie van Stolk-Cooke, Psychology
Nickolas Viele, Art History

PROCEEDINGS OF GREAT DAY 2023

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 2023* is now available!

Featuring:

- An interview with Dr. Steve Derne, Professor of Sociology, and Kate O'Neil, student author of Wonder at Overcoming Anxiety
- An interview with Brooke Muñoz-Halm, creator of Pawsibilities

STAFF: ALLISON BROWN, MAX SPARKMAN, AND DANIEL ROSS
STUDENT EDITORS: **SARA WILKINS** AND **HAILEY BERNET**

Students and Faculty Mentors Published in the Proceedings of GREAT Day 2023

CREATING A PODCAST: RESEARCH ABOUT REPRODUCTIVE JUSTICE ACCESSIBLE TO THE PUBLIC
TAYLOR HANSEN
SPONSORED BY JENNIFER GUZMÁN, PHD

THE SILENT, SPOKEN STRESS: HOW A LACK OF DIALOGUE PERPETUATES VOCAL ISSUES AND LOWERED QUALITY OF LIFE IN EDUCATORS
PEIGHTON CERVONI
SPONSORED BY JESSE BIA, PHD

WONDER AT OVERCOMING ANXIETY: FEELINGS OF SELF, NEGATIVE EMOTIONS, AND ENCOUNTERS WITH THE UGLY IN WONDER EXPERIENCES
KATE O'NEIL
SPONSORED BY STEVE DERNE, PHD

PUNK AND PERESTROIKA: VOICING RESISTANCE AT THE END OF THE USSR
NATHAN KLAITS
SPONSORED BY JOVANA BABOVIĆ, PHD

GERTRUDE BLANCH'S HUMAN COMPUTERS
CELIA HENRY
SPONSORED BY JEFF JOHANNES, PHD

LABORERS AND LAUNDRYMEN: GENDERED SINOPHOBIA AND SUB-MASCULINITY IN THE AMERICAS
ADAM COMSTOCK
SPONSORED BY LING MA, PHD

DAVID BOWIE: FACE THE STRANGE
ALANNAH EGAN
SPONSORED BY MONICA HERSHBERGER, PHD

HPV VACCINE HESITANCY IN THE UNITED STATES AMONG BLACK AMERICANS AND CHRISTIAN NATIONALISTS
BRIDGET MOYER
SPONSORED BY JENNIFER KATZ, PHD

AN INTERVIEW WITH THE CREATOR OF PAWSIBILITIES
BROOKE MUÑOZ-HALM
SPONSORED BY MARK RIDER, MBA

A GENERAL MORTALITY ANALYSIS IN 19TH AND EARLY 20TH CENTURY ROCHESTER, NEW YORK: EXPLORING SEX-BASED DIFFERENCES IN CHILDHOOD AND ADOLESCENCE MORTALITY RATES ACROSS AGE GROUPS
CHIZOBA OKORIE
SPONSORED BY KRISTI KRUMRINE, PHD

HOW DOES CHANGE IN LAND USE IMPACT THE WATER CHEMISTRY PARAMETERS IN THE STREAMS OF OSWEGO COUNTY, NEW YORK?
MADISON STEATES AND THOMAS BACK
SPONSORED BY SUANN YANG, PHD

HUNGRY FOR CHANGE: FOOD POLITICS AND THE 18TH CENTURY HISTORY OF JAMAICAN MAROONS
JACK KIRBY
SPONSORED BY JUSTIN BEHREND, PHD

MUSIC THAT FUELS A FAMILY
BROOKE WOODARD
SPONSORED BY JAMES KIMBALL, MA

Meet Michele, our GREAT Day Therapy Dog!

Wednesday, 24th April, 2024, 9:45 - 11:00am, Fraser Library

THE JACK '76 AND CAROL '76 KRAMER ENDOWED LECTURESHIP

Justice, Equity, Diversity, and Inclusion in AI

RENÉE CUMMINGS, UNIVERSITY OF VIRGINIA

Wednesday, April 24th, 1:00-2:15 pm, Wadsworth Auditorium

About Renée Cummings

Professor Renée Cummings, a 2023 VentureBeat AI Innovator Award winner, is an artificial intelligence (AI), data, and tech ethicist, and the first Data Activist-in-Residence at the University of Virginia's School of Data Science, where she was named Professor of Practice in Data Science. She also serves as co-director of the Public Interest Technology University Network (PIT-UN) at UVA. She is also a nonresident senior fellow at The Brookings Institution and the inaugural Senior Fellow, AI, Data and Public Policy at All Tech Is Human, a leading think tank. She's also a distinguished member of the World Economic Forum's Data Equity Council and the World Economic Forum's AI Governance Alliance, an advisory council member for the AI & Equality Initiative at Carnegie Council for Ethics in International Affairs, and a member of the Global Academic Network at the Center for AI and Digital Policy. Professor Cummings is also a criminologist, criminal psychologist, therapeutic jurisprudence specialist, and a community scholar at Columbia University.

Committed to stretching the imagination of data science, reimagining the relationship between data and society, and redefining the data power structure, she works at the intersection of technology, power, and society. She examines the ethical implications of data on society, exploring the impact of AI on duty of care and due process, expanding our understanding of the ethical risks of AI and how to build ethically resilient, rewarding, responsible, sustainable, justice-oriented, and trauma-informed AI for the benefit of all. At the School of Data Science, her research focuses on data justice, data trauma, algorithmic policing, surveillance technology, and AI for criminal justice reform by using data to enhance police accountability and transparency and to improve police practices, fairness, and decision-making accuracy through community engagement and public interest technology. Justice, equity, diversity, and inclusion are critical aspects of her work as she promotes inclusive innovation and ethical, responsible, and trustworthy AI.

Her work extends to include data, democracy, representation, identity, and governance, critically examining data rights, algorithmic justice, social justice, and design justice through a criminal justice lens. She specializes in AI leadership, AI policy development, AI governance, public sector AI, AI risk management, AI crisis communication, building ethical AI, and using AI to save lives. She is committed to using AI to empower and transform, helping governments and organizations navigate the AI landscape and develop future AI leaders. Justice, equality, empowerment, and democracy are critical to her work as a champion for the voices of the historically underrepresented in STEM.

Through her activism and research, she is creating space for people without traditional power to participate meaningfully in the process of designing, developing, deploying, and adopting AI. Through rigorous thinking, meaningful participation, and scholarship, Professor Cummings advocates for AI we can trust. She is on the frontline of ethical AI, generating real time justice-oriented solutions to the consequences of AI and the impacts of data and technology on society. A thought leader, motivational speaker, and mentor, she has given a multitude of talks to conferences, groups, and policymakers, and is a recognized expert who lectures, nationally and internationally, on ethical data science and ethical AI. She has mastered the art of creative storytelling, science communication, and deconstructing complex topics into critical everyday conversations that inform and inspire.

FESTIVAL OF MUSIC, DANCE AND FILM

JAZZ ENSEMBLE

11:00 - 11:30am, Wednesday, 24th April, 2024, Wadsworth Auditorium
Session Chair
Bill Tiberio, Music

381 • Jazz Ensemble

Alannah Egan, Alexander Stoker, Alyssa Stafford, Brennan Borden Mcgory, Dante Dignitti, Jacob Everett, Jillian Orr, Joan Karron, Justin Cohen, Justin Ronzoni, Kayla Andersen, Kyle Brown, Lauren Braun, Liam Debono, Lucia Viola, Micah Mcculley, Shaun Fitzgerald, William Carmen, Dominic Rodriguez-Donohue
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

LOW BRASS ENSEMBLE

11:30am - 12:00pm, Wednesday, 24th April, 2024, Multicultural Center Blake Hall
Session Chair
Ben David Aronson, Music

382 • Low Brass

Jake Everett, Shaun Fitzgerald, Henry Kemblowski, Brennan Borden Mcgory, Ben David Aronson
Abstract
Ben David Aronson, Jake Everett and Shaun Fitzgerald, trombone; Brennan Borden Mcgory, euphonium; Henry Kemblowski, tuba.
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

LET'S SING AND DANCE

12:45 - 1:00pm, Wednesday, 24th April, 2024, Multicultural Center Blake Hall
Session Chair
Jasmine Tang, Global Languages and Cultures

181 • Let’s Sing and Dance!

Jocelyn Haines, Naomi Tsang, Jason Pun, Anthony Braden, Shanchu Chen, Kristen Heard, Matthew Hoch, Gloria Hodge, Aimee Maduro, Jemorie Nsiah
Abstract
Join members of the Chinese Culture Club at Geneseo (CCCG) and the Chinese 102 class for a joyful performance filled with Chinese dance and singing that celebrates friendship and companionship, even through hard times.

Subject Category
Arts and Humanities Categories: Dance
Faculty Sponsor Department
Global Languages and Cultures
Faculty Sponsor
Jasmine Tang
Funding Sources
None

MUSICAL THEATRE & MODERN DANCE SHOWCASE: PROCESS UNFOLDING

2:30 - 3:30pm, Wednesday, 24th April, 2024, Brodie Austin
Session Chair
Allison Thomashefski, Theatre and Dance

164 • Musical Theatre & Modern Dance Showcase: Process Unfolding

Natalie Barrows, Arielle Beckman, Robert Beirne, Evan Burmeister, Payton Clark, Jacqueline Conlon, Aviva Daniel, Joanna DeJesus, Sophia Hutchings Benny, Angelina Nelson, Sara Singer, Sarah Starr, Kaley Sumeriski, Lauren Tuck, Sophie Vanstrom, Marissa Weaver

Abstract
Performers enrolled in Musical Theatre Dance and Modern Dance 100 invite you to join us for a glimpse into our "works in progress" showcase this semester. So much of the performing arts involves buying tickets to wonderfully crafted and practiced shows. In these courses, we have been emphasizing the beauty and power found within the "process" of dance making and performance. These 16 dancers will bring the stage to life by sharing learned choreography from shows such as "Singing In The Rain," "Moulin Rouge," and "Newsies." Similarly, they will share improvisation-based explorations from the post-modern dance world, inspired by Trisha Brown's "Locus," solo with 27 points in space. We hope you can join us for a truly GREAT showcase of talent, innovation and creativity at Geneseo.

Subject Category
Arts and Humanities Categories: Dance
Faculty Sponsor Department
Theatre and Dance
Faculty Sponsor
Allison Thomashefski
Funding Sources
None

STRING BAND PERFORMANCE

3:45 - 4:15pm, Wednesday, 24th April, 2024, MacVittie College Union Lobby
Session Chair
James Kimball, Music

380 • String Band

Corrina Filek, Olivia Marra, Marisa Mazzacco, Katie Piscine, Audrey Ryan
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

A CAPELLA HOUR

4:30 – 5:30pm, Wednesday, 24th April, 2024, Multicultural Center Blake Hall
Session Chair
Kara Cornell, Music

377 • Hips n' Harmony

Alexis Bertrand, Becca San George, Cara Pfluke, Caroline Fruck, Chai Anderson, Ella Sosnowski, Emma Ward, Erin Schulz, Hannah Brewer, Hannah Slade, Jojo Meskos, Jules Ardito, Jules Franco, Kira Painter, Lauren Stevens, Lillian O'Donnell, Lona Tucci, London Pantane, Lucy San George, Megan Powers, Mina Klentos, Natalie Casey, Nina Suszysnki, Olivia Messina, Reydaliz Torres Lopez, Shayda Ramsammy
Funding Sources
None

376 • Southside Boys

Ethan Shaw, Robert Beirne, Aidan Nichols, Aidan Hellman, Max Worden, David Potter, Ian Suszynski, James Degnan, Bradley Adams, Justin Robinson, James Cortes, Andrew Bellotti, Evan Burmeister, Joey DiFulio, Sean Kuder, Xavier Canaple, Christian Tewksbury, Sam Parinello, Josh Hemmings
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

372 • Between the Lines

Kate Edwards, Aspen Griffing, Anna Hansen, Hannah Lieberman, Arielle Beckman, Cadence Butler, Corinne Albicker, Kaitlyn Samsel, Sarah Mertson, Aurelia Tice, Anna Arehart, Liv Rayburn, Catherine Huntley, Mckenna Oley, Sonia Horowitz, Courtney Duggan, Liz Orlep, Samuel Olson, Abigail Kennedy, Gwen Sherman
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

379 • Emmelodics

Lindsey O'Hern, Riley Martin, Lyonne Crawford, Jada Doss, Madison Butler, Lauren Murphy, Aidan Hellman, Grace McMillan, Caroline von Hof, Katie Morgan, Morgan Olsen, Kyra Drannbauer, Katie Lamberson, Jane Konieczny, Rylie Wallace, Sarah Dean, Amanda Louis, Emily Kline, Liv Rayburn, Xavier Canaple, Jacey Kleotzer
Subject Category
Arts and Humanities Categories: Music
Funding Sources
None

375 • Exit 8

Penelope Zernhausern, Clare Douglas, August Fountain, Danielle Scolton, Ellen Crowe, Elinore Voss, Regina Cucchiara, Olivia Tedford, Katelyn Adis, Riley Martin, Sophia Bobeck, Kathleen Lewis, Maya Tucci, Maeve Frost, Eve Angelo, Grace

McMillan, Aidan Nichols, Lucas Piatkowski, Robert Harrington, David Cross, William Carmen, Dominic Schneider, Christian Tewksbury

Subject Category

Arts and Humanities Categories: Music

Funding Sources

None

GIFF: GENESEO INSOMNIA FILM FESTIVAL & AWARDS CEREMONY

6:00 - 7:00pm, Wednesday, 24th April, 2024, Wadsworth Auditorium

Session Chair

Sarah Brookes, Communication

The long awaited, 10th annual Geneseo Insomnia Film Festival overnight event took place on March 22-23. Participants had 24 hours to write, film, and edit a three-minute video. Each team also needed to include at least three elements from a list of twenty. Teams competed for prizes against other students in an attempt to create the wittiest, most interesting, and creative video. This was a chance for students of all talents to demonstrate their skills as writers, actors, videographers, and/or editors. Submissions were judged by a panel of Geneseo faculty and staff. Now we're inviting you to come see the short films during this special GREAT Day screening and awards ceremony! This 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 2024 INSOMNIACS!

This year's Participating Teams are:

COMN Bomb (Faculty exhibition group): Sarah Brookes, Andrew Herman, Lee Pierce, Glenn Geiser-Getz, Atsushi Tajima, Ashley Watson

D6: Dylan Dariano, Camryn Marshall, Nathan Hubbard, Jenna Zon

Tortured Insomniacs Department: Gianna Algeri, Holly Michelsen, Olivia Bloise

MTC4LYFE: Aven Regan, Courtney Duggan, Jessie Mazzeo, Anna Hansen

***insert rat emoji*:** Abigail Kennedy, Aimee Maduro

The Fall Duo: Faith Manchester, Luke Lloyd

StudioLABS: Lauren Braun, Bailey Miller, Shaun Fitgerald, Anna Arehart

F'AKN: Nathaniel D'Amato, FP Zatlukal, Angela Totaro, Kendall Cruise

Movie Watchers: Ethan Moore, Michael McCarthy, Lee Malone

Levi-oh-so-Creative: Cadence Panol, Elizabeth Tooker, Hugo Prevot, Gianna Mantha

STUDIO ARTS SHOWCASE

10:00am-6:00pm Wednesday, 24 April, 2024, Lederer Gallery

The GREAT Day Studio Arts Showcase will be available for viewing from 10:00 am to 6:00 pm. Artists will be present during the “Meet the GREAT Day Artists” session from 4:15 to 5:00 PM.

MEET THE GREAT DAY ARTISTS

4:15 - 5:00pm, Wednesday, 24th April, 2024, Lederer Gallery

Session Chair

Nickolas Viele, Art History

10 • Light of Life

Makayla French

Abstract

This 3x9 inch acrylic on canvas explores the concept of prisms and light. Drawing on inspiration from Pink Floyd and interesting phenomena that are explained by physics I added a twist of individuality by incorporating the feeling of finding oneself in the music. The hair of the girl flows out of the prism as a projection of herself and the flowing rhythms of the music. A peaceful expression is on her face as she is incorporated into the light waves separated by the prism. This piece expresses a love for both art and science as I have found my identity through learning and exploring different branches of science and art.

Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

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

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

Funding Sources

None

9 • Wanderlust

Makayla French

Abstract

This 4x4 inch acrylic on canvas depicts a solo traveler over open water and blue skies in a hot air balloon conveying an image of wanderlust and travel. The stark contrast between the bright balloon and the muted vast unknown of the sky represents the unknowns in the world that science is trying to describe, understand, and enlighten for everyone. Often we hear about the results and discoveries of scientists and researchers, but rarely do we understand the immense undertaking of exploring unknown ideas that may have been considered myths or legends until proven otherwise.

Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

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

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

Funding Sources

None

56 • Sirena sin Espana

Torianna Robleto

Abstract

As an artist, it is important to create self portraits to document self discovery, growth, change, and experimentation. While showcasing myself through self portraits, I pay homage to my mermaid siren self Norinana who is always changing and can look many different ways depending on who they are interacting with. This mannequin head depicts a version of me had my ancestors not been colonized by Spain.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

65 • Wood Kitchen Spoon to Tree

Camden Falkner

Abstract

This was a simple thing that came from the idea that the things we use everyday come from nature. With a little work, the separate objects became one.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

66 • The Mini Retreat

Taylor Calus

Abstract

Using day-to-day objects, I created spa-like scenarios within four different pieces. Getting ready and looking well-groomed is an idea that resonates with me as my mom always taught me it's important not to look untidy when going places. Throughout each piece, I used several mediums such as colored pencils, micro pens, and paint. This was a project I thoroughly enjoyed as I felt like I got to express a more creative side of myself.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

67 • Pasta Heads: Spaghetti Girl

Victoria Coppola

Abstract

“Spaghetti Girl” is one of four 14 in. x 17 in. pieces in a series called “Pasta Heads.” This specific piece uses spaghetti to convey the reaction of shock or surprise. Compared to the other works in this series, “Spaghetti Girl” has a shadowed complexion to imply the idea of something existing over the girl. This object can be good, bad, or neither, it simply makes the girl shocked by what she sees. Materials used are markers, Micron pens, graphite pencils, and, of course, dry spaghetti noodles.

Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

68 • Beautiful Music

Piper Emo
Abstract
We have found objects in life which is then incorporated and plays a part in a drawing.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

69 • "Horseshoe" Crab

Piper Emo
Abstract
We found objects in life and incorporated them into drawings.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

70 • Hermit Crab

Piper Emo
Abstract
We found objects in life and incorporated them into drawings.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele

Funding Sources
None

71 • Tree Fungus

Piper Emo
Abstract
We found objects in life and incorporated them into drawings.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

100 • Maximized Boy with a Basket of Fruit

Jacob Fields
Abstract
This piece depicts Caravaggio's "Boy with a Basket of Fruit" re-imagined in the style of psychedelic artist Peter Max. Done on canvas using a combination of traditional acrylics, fluorescent acrylics and paint markers. Caravaggio's timeless depiction of youth and innocence is abstracted into a kaleidoscopic burst of vibrance, inviting the viewer examine the intersection of tradition and innovation.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

101 • Memories from Medication

Darren D'Arcy
Abstract
In this piece I wanted to capture the feelings and memories that come to mind when I take my anti-depressants every morning. My goal was to paint a realistic and genuine reflection on my personal struggles and progress in dealing with suicide and depression.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

102 • Untitled (Jupiter)

Darren D'Arcy

Abstract

An abstract expression of Jupiter in UV light, in the styling of Mark Rothko's famous color field paintings.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

105 • Jelly Jellyfish

Ava Bruce

Abstract

A jellyfish painting inspired by Van Gogh's "Starry Night" piece. The swirls and brushstrokes are influenced by it. Painted on canvas with neon paint.

Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

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

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

109 • Coelacanth Family

Rachel Sharpe

Abstract

This multimedia illustration depicts a group of watercolor and colored pencil coelacanths swimming toward the viewer against an acrylic background. A clay coelacanth completes the piece by filling a gap in the school.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

110 • Late Morning

Rachel Sharpe

Abstract

This watercolor and colored pencil scene depicts a mother pouring milk into her child's cereal. A pencil lead holder stands in for the milk carton.

Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

111 • Chomp

Rachel Sharpe
Abstract
This piece is a rectangular screwdriver head holder painted with acrylic paint to resemble gums with the heads mimicking teeth.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

162 • Siren

Nevaeh Tucker
Abstract
In one of our major projects, Professor Viele gave us a prompt from which we could pick three words at random, the ones I picked being "diamonds," "flowers," and "basket of snakes." From these words we then must make a super hero or villain type character. With the words I chose, I had the idea of creating a sirenesque Medusa character. Both hero and villain depending on the way you perceive the mythology behind Medusa and sirens. I personally interpret them as heroes, and imagine my character as a harbinger of women's justice. My work displayed here is the result of this idea.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

187 • Forgive Us Sinners

Michaela Lewis-Hardies
Abstract

Painted with Acrylic and Gouache, "Forgive Us Sinners" is a piece about the artists personal experience of "surviving" catholic school from a very young age, dealing with not having much of an identity afterward, as well as the focus on sin and shame these institutes force onto these children as young as 3 years old.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

201 • Cat Earring

Ellie Kushnir

Abstract

Jewelry, often more times than not, resides in dusty cases and boxes, or dangles in some corner. The more jewelry there is, the less they are actually utilized for its primary function-- visual beauty. This artwork lets them be displayed and appreciated instead of neglected.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

206 • Collecting

Catie Prospero McGuire

Abstract

This piece has been something I've wanted to create for years, but have never had the opportunity to until now. I've been collecting metal pieces, tabs and scraps that have been discarded. This piece is an amalgamation of the 'trash' that's been thrown away but still has potential.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

208 • Falling for the Sun

Mia Hendrickson

Abstract

Acrylic painting on canvas depicting the Greek myth of Icarus. In the original myth, Daedalus and his son are imprisoned by King Minos in the Labyrinth. To escape with his son, Daedalus crafted wings of wax and feathers so they could fly off

the island to safety. Despite his warnings, his son Icarus flew too high and close to the sun, melting the wax on his wings and causing him to crash into the sea below. Through the use of color, jewelry wire, and wax, the painting explores the desperation and longing the myth inspires as Icarus falls through the sky reaching for the sun.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

226 • Don't let them see you cry

Catie Prospero McGuire

Abstract

The style of this painting was inspired by the works of Alphonse Mucha, a famous art nouveau artist from the late 19th-early 20th century. The content of this piece is based on my experience as someone with PMDD (Pre-Menstrual Dysphoric Disorder). It's a "disorder" that infringes on a week of my life basically every month. An episode of PMDD can range from disruptive to debilitating. My experiences and episodes are something I don't share about with my friends and family. I have never met another person with PMDD or someone with prior knowledge about the "disorder" (except for some doctors). In this piece I wanted to capture the feelings of loneliness, the nature of hiding these experiences, and the attempt to simply, outlive 'PMDD hell-week.'

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

237 • Pasta Heads: Orzo Girl

Victoria Coppola

Abstract

"Orzo Girl" is one of four 14 in. x 17 in. pieces in a series called "Pasta Heads." This specific piece uses orzo to show short hair on a domineering model. Compared to the other works in this series, "Orzo Girl" uses warm tones and a strong red lip color to captivate the viewer as a starlet would. She is a diva and an ingenue. Materials used are markers, Micron pens, graphite pencils, colored pencils, and dry orzo pasta.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

240 • Pasta Heads: Penne Girl

Victoria Coppola

Abstract

“Penne Girl” is one of four 14 in. x 17 in. pieces in a series called “Pasta Heads.” This specific piece uses penne pasta to convey curls in a pony tail. This style was inspired by mid-16th century Parisian style, specifically the Rococo movement. The use of pink, the expression of the girl, and smooth complexion is also attributed to this style. Materials used are markers, graphite pencils, colored pencils, and dry penne pasta.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

244 • Pasta Heads: Fusilli Boy

Victoria Coppola

Abstract

“Fusilli Boy” is one of four 14 in. x 17 in. pieces in a series called “Pasta Heads.” The dry fusilli is used to resemble short curls of a young boy. The boy's scared expression is taken further using the choppy and unblended marker layering. Materials used are markers, Micron pens, graphite pencils, colored pencils, and dry fusilli pasta.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

271 • Stripped Identity

Hailey Brent

Abstract

For most, if not all, incoming college students, one of the larger expectations surrounding the college experience is the discovery of identity, a refined sense of self. One thing to note about this general expectation is that quite the opposite has been true for me so far. At the end of high school, I already had a strong sense of my identity, defined by what things make me who I am and was excited to pursue those things in college. But after arriving, I haven't felt that security since. My understanding of my identity entering college last year had been: An Athlete, An English Literature Major, and An "Artist". But since arriving, those crucial pieces of my identity have been stripped from me, and navigating a new sense of self without these things has been difficult. I wanted to demonstrate this in my piece, *Stripped Identity*, which consists of a cut-up Molten volleyball, and old scraps from my high school English class.

Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

Faculty Sponsor Department

Art History

Faculty Sponsor
Nickolas Viele
Funding Sources
None

282 • Mermaids of the World

Cadence Panol
Abstract
Each of the four pieces are based off of different depictions of mermaids across the globe. While many of the stories and myths about mermaids had similar elements, like the concept of female sirens and enchantresses, or the association with snakes or mirrors, each of the different mermaids had their own elements that set them apart. They were based off of mermaids from Senegal, Iran, Indonesia, and America.
Subject Category
Arts and Humanities Categories: Visual Arts
Special Topic Information
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

314 • Celebration in Sorrow

Mia Hendrickson
Abstract
Acrylic and UV reactive paints on canvas depicting the Greek myth, Hyacinthus. In the original myth, Hyacinthus is a Spartan prince well known for his beauty. He caught the eye of Apollo, the sun god, and became his lover, angering the god of the west wind, Zephyrus as he wanted Hyacinthus for himself. While Apollo was teaching Hyacinthus to play discus, Zephyrus blew the discus into Hyacinthus' head, killing him. Mourning the loss of his lover, Apollo turned Hyacinthus into a flower, claiming that wherever his blood was spilled, the flowers would grow. In the painting, the symbolism of Hyacinthus' pose, colors, and the composition of flowers behind him explore the emotions of loss and love the myth inspires. The use of UV paints on the flowers and his wound explore the idea of spirituality, death, and rebirth.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

325 • The Wilderness Chose

Michaela Lewis-Hardies
Abstract
Painted with Acrylic, Gouache, and Glow in the Dark paint, "The Wilderness Chose" is a depiction of "The Antler Queen" from Showtime's TV series, "Yellowjackets".
Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

339 • Winged Messengers

Julia Golden

Abstract

When I grew up, I was always told that cardinals were loved ones that had passed away coming to visit you from beyond. The cardinals on the gravestones are meant to represent the spirits of people who have passed lingering around, showing that connection between the cardinals and the afterlife.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

352 • Pink Piggy

Rachel Ash

Abstract

For this project I was told to recreate something that I hold dear to me. I immediately thought of my childhood stuffed animal that I still have today. For the project I used colored pencils which helped me give the texture that is shown in this piece. I followed the real color of “piggy” and tried to give a child-like feel to it by giving the pink color in the back.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

355 • Pomegranate Stains

Torianna Robleto

Abstract

Eating pomegranates can be messy, they can stain your teeth, they crack open like hearts and expose blood red seeds. In this triptych piece, I will choose to not wash away the stains left by my pomegranate.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

356 • Dangling Earrings

Ellie Kushnir

Abstract

Jewelry, often more times than not, resides in dusty cases and boxes, or dangles in some corner. The more jewelry there is, the less they are actually utilized for its primary function-- visual beauty. This artwork lets them be displayed and appreciated instead of neglected.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

357 • Ferrero Ballerinas

Ellie Kushnir

Abstract

A Ferrero Rocher wrapper has primarily two parts-- its foil and its paper liner. While eating one, I focused on the paper liner and its texture and couldn't stop myself comparing it to a ballerina's tutu. After playing around with the composition, I decided on three dancers going in the motion of one spin.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

358 • A Bubbly Bath

Charlotte Alexander

Abstract

This is for a found objects prompt for my drawing class here at Geneseo. I chose to do a bubble bath that had clear hair-ties as the bubbles.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

359 • The Queen Venus

Charlotte Alexander

Abstract

This is a Venus fly trap which has become a full blown villain. This includes breathing fire and having octo-gripping vine limbs.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

360 • Snoopy

Eden Junz

Abstract

This artwork presents Snoopy, the beloved Peanuts character, recreated in the whimsical style of Dr. Seuss, combining two iconic worlds into one delightful portrayal.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

361 • Runway Rocher

Ellie Kushnir

Abstract

A Ferrero Rocher foil usually has one purpose; to incase the chocolate Ferrero. As I stared at the gold foil, about to be thrown out, I felt a need to keep it. After saving a few of them, I drew a runway model, and gave her a gold dress.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

362 • In the Clouds

Nevaeh Tucker

Abstract

In this piece I turned an empty orange juice bottle into a hot air balloon. I made the basket of the balloon from an old candle. I used acrylic paint on the bottle and candle. I attached the “balloon” on top of a sky I made using both marker and paint on art paper. Additionally, I utilized cotton balls to act as clouds through the piece.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

363 • Jewelry Hand

Bryan Martinez Hernandez

Abstract

A hand drawn with all pencils on a canvas, this art involved using real objects that were placed on top of the drawing to complete the artwork.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

364 • Kuki Sanban in a Different Style

Emily Eschborn

Abstract

I drew Kuki Sanban AKA Numbah 3 from Codename: Kids Nextdoor, in the style that the show Phineas and Ferb is drawn in. Her personality is described as clueless so that is why the background color does not touch her but she is also described as cheerful so I made the background colorful.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

365 • Color

Cadence Panol

Abstract

This is a series of pieces which seeks to explore moments of emotion or thought across the spectrum of color. They are mixed media pieces utilizing watercolor, acrylic, and pen in order to create a feeling and sense of motion. Life is something that is constantly moving and shifting, and the colors are a look into the ways moments are colored. Certain

colors are linked with emotions, so I experimented with matching and subverting these associations. Each piece is subjective to the viewer, but they all convey this notion that to be human is to live a life filled with art and color.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

366 • Caricature Characters

Cadence Panol

Abstract

For one of our class projects, we were assigned three words that we had to create a character out of it. As a result, I created several different characters with different words. Additionally, I experimented with new materials and pushed my skills on these pieces to create more composition.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

None

369 • Rise

Nickolas Viele

Abstract

The purpose of this installation is to empower the arts. Students had something taken away from them without any opportunity to say otherwise. Through these works, they made the decisions when it came to final presentations. I gave no direction. Through art, they held the power, not me.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Art History

Faculty Sponsor

Nickolas Viele

Funding Sources

I provided canvases and body casting materials for the students. My wife, Angela Viele and I provided the casting service free of charge to inspire innovation & creativity first hand.

370 • The Cowboy Elephant Villain

Bryan Martinez Hernandez

Abstract

Drawing done with pencil on paper, the assignment was to choose three random words. The words to make the artwork were: Cowboy Hat, Elephant Ears, and Fangs.

Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

373 • Galaga

Goossen Lauren
Abstract
At first glance, Galaga, like the old 8-bit video game; reflects the feeling of nostalgia one might link to their childhood. However, on a deeper level, this piece symbolizes the turbulent relationship between father and daughter. This piece represents the simplicity and innocence of childhood while simultaneously addressing the overwhelmingness and anxiety experienced during a relationship strain. It is an homage to relationships that once were and are no longer. For added nostalgia, the spaceships and alien creatures were created using Perler beads, which were a common craft or activity for many during childhood.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

351 • Boot

Valeria Espinosa
Abstract
Inspired by Wall-E, I decided to recreate the boot for its symbolism that it has not only in the movie but to our current world. I'm aware that this can all mean something different depending on the person, and I intended for that openness to be taken as well.
Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

353 • Krazy Kats

Morgan Salsbury
Abstract
Inspired by artwork from Laurel Burch
Subject Category

Arts and Humanities Categories: Visual Arts

Special Topic Information

Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

73 • Mickey Mouse Cartoon

Payton Clark

Abstract
For this sketchbook assignment, we were told to draw a cartoon character we like in a different artists style. I chose to draw Mickey and Minnie Mouse in a style similar to Keith Haring.

Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art History
Faculty Sponsor
Nickolas Viele
Funding Sources
None

378 • The Hanging House

Kiara Barney

Abstract
The Hanging House ultimately depicts the idea of divorce and how it impacts children. It shares an ideology of how a child's perception of family can quickly spiral into a type of grieving, similar to death.

Subject Category
Arts and Humanities Categories: Visual Arts
Faculty Sponsor Department
Art
Faculty Sponsor
Nickolas Viele
Funding Sources
None

CONCURRENT SESSIONS

CONCURRENT SESSION 1

10:00-11:15am, Wednesday, 24 April 2024

1A: INTERROGATING HISTORICAL NARRATIVES OF POWER, GENDER, AND SEXUALITY

10:00-11:15am, Wednesday, 24 April 2024, Bailey 101
Session Chair
Jovana Babović, History

190 • The Study of the Kingdom of Sicily Then and Now: A Comparison of the Modern and Contemporaneous Narratives Surrounding the History of the Norman Kingdom of Sicily during the Early and High Middle Ages

Terrence LoPresti
Abstract
The study the island of Sicily is a relatively old, but also quite large field of study that covers a wide variety of subjects. From studying its geographic importance being in the center of the Mediterranean, to studying the economic differences to North Italy, or even just the general history of the island the history of the island is a massive topic. For this thesis I will be focusing on the Norman Period in Sicily from 999-1195 A.D. In particular I have researched the differences between the narratives surrounding the history of the Norman Period between modern and contemporaneous historians. Modern historians seem to build a narrative that focuses on the syncretism and conviviality between Christians, Jew, and Muslims during the period of Norman rule. While, contemporaneous historians seem to follow the more stereotypical narratives when writing histories of the Early and High Middle Ages. Primarily writing history to make their sponsors look good for posterity, or greatly exaggerate the importance or scale of events they witnessed. I will explain why, through my own research, I believe that these two groups of people differ so much in the narratives that they present. But also where they may also seem to agree with one other.
Subject Category
Interdisciplinary and Other Categories: Medieval Studies
Faculty Sponsor Department
History
Faculty Sponsor
Jovana Babović
Funding Sources
None

23 • A Comparative Study of Gender and Sexuality in Berlin: 1918-1945

Lauren Kimes
Abstract
This paper focuses on queer life in Berlin from the beginning of the Weimar period (1918-1933) to the end of the Nazi Period (1933-1945) and is divided into chronological sections: queer culture in Weimar Berlin: Late 1920s-1932, Hitler's Seizing of Power: 1933-1936, The Rise of the Third Reich: 1936-1939, and War Period: 1939-1945. I analyze the media and cabaret, Magnus Hirschfeld, the threat of Mannerbund, Nazi policy against homosexuality, closure of night clubs and arrests. My main sources are primary sources including photographs, newspaper articles, film, memoirs, police records and registries, German law and translated speeches. I argue that queer life in Berlin was not only surviving but

thriving in Weimar Berlin and that it continued to exist throughout the Nazi period despite its persecution from the public sphere. The purpose of my essay is to analyze how the Queer population navigated Hitler's Berlin in comparison to Weimar Berlin as well as how urban spaces allowed queer culture to survive in both time periods.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

History

Faculty Sponsor

Jovana Babović

Funding Sources

None

27 • An End to Kenyan Womanhood: The Medicalization of Sexuality, Reproduction, and Maternity in Colonial Kenya

Jordyn Grady

Abstract

In a new age of colonialism, the British Empire shaped policy to modernize the African continent. In 20th century colonial Kenya, health care development policy sought control of women's reproduction, sexuality, and maternity. Ultimately, under the guise of philanthropy and modernity, British development policy dismantled traditional womanhood and disempowered Kenyan women.

A critical analysis of the policy actors shaping Kenyan development sets the foundation for understanding the medicalization of women's sexual health. The negative effect of colonial healthcare policy on the gender and ethnic identity of Kenyan women is found through an evaluation of health care policies related to female genital mutilation, abortion, and childbirth.

This analysis fits within the larger body of historical research studying the clash between modernity and tradition found within colonial development. This research focuses on health care policy impacting the Central and Eastern provinces between 1918 and 1940. Primary source documents include district annual reports, correspondence between government officials, Christian mission reports, Kenyan National Assembly minutes, and anthropological reports.

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

Funding Sources

None

1B: PHILOSOPHY CHANGING THE WORLD TODAY

10:00-11:15am, Wednesday, 24 April 2024, Bailey 102
Session Chair
David Levy, Philosophy

17 • Philosophy Reach Out Program in Local High Schools

Aspen Griffing, Kendall Cruise, Alexis Patrick, Riley Bowersox, Samuel Olson, Victor Leon-Melendez, Alexis Flint, Amanda Louis

Abstract
Students from several different majors came together to revive the Philosophy Reach Out Program, which was a program that sent undergraduates to local schools to introduce them to philosophy and philosophical thinking. This semester, we took the problem of the experience machine and its relation to hedonism and taught it to local students.

Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Philosophy
Faculty Sponsor
David Levy
Funding Sources
None

280 • Beyond Autonomy: Alternative Approaches to Abortion Ethics

Sarah Schoeneman, Lillian O'Donnell, Emma Samberg

Abstract
Within the feminist philosophical field, there are a myriad of approaches when it comes to the ethics of abortion. In America, the liberal approach of bodily autonomy, better known as the “my body, my choice” approach, is dominant in the mainstream reproductive rights ideology. This, however, is only one of many approaches to abortion and reproductive rights in feminist ethics. In our presentation, we will break down the mainstream liberal/ pro-choice approach. We will introduce a sample of ethical views within feminist philosophy. Finally, we will explain the strengths and weaknesses of the introduced approaches, along with key thoughts from philosophers in the respective spheres of thought.

Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Philosophy
Faculty Sponsor
Amanda Roth
Funding Sources
None

1D: SOCIOLOGY OF EMOTIONS AND HUMAN FLOURISHING

10:00-11:15am, Wednesday, 24 April 2024, Bailey 104
Session Chair
Steve Derne, Sociology

51 • Religion as a Source of Acceptance and Connections: Not Automatic, But the Result of Action and Devotion

Megan Nedelkovski
Abstract
Being a part of a religious or cultural group is said to promote well-being in those who practice such acts of faith. With religion and well-being comes social support such as feeling connected to those in your religious group as well as feeling accepted by them. But is this always automatic? This presentation will explore my personal experience being involved in a religion and will give insight to my Macedonian nationality. I argue that I felt a lack of well-being due to not being knowledgable enough about my own culture, and possessing a lack of insight into the cultural customs that come with being Macedonian. As a result I felt as though I was not accepted by religious members close to me and therefore I didn't feel Macedonian enough. I felt like an imposter, which then led me to coin the term I call "Cultural Imposter Syndrome". This presentation will highlight the journey I endeavored on to become "More Macedonian" by learning more about my religion and I will share how I felt overall after having done so.
Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne
Funding Sources
None

48 • Voluntary vs. Paid EMT Work: Comparing the Emotional Feelings Produced by Edgework Activities

Sydney Saunders
Abstract
Stephen Lyng's, *Edgework: A Social Psychological Analysis of Voluntary Risk Taking,* defines the three essential components of edgework activities to be voluntary engagement that involve a risk and a skill. Lyng believes that edgework activities produce specific emotions of exhilaration and omnipotence. This study was employed to determine if non-voluntary edgework activities can produce the same emotions of exhilaration and omnipotence that voluntary edgework activities do. Ultimately, through the use of sociological self-introspection of both voluntary and paid emergency medical technician work, it was found that the types of emotions produced were the same, however, the level of emotional feelings produced was much greater for voluntary edgework activities compared to non-voluntary edgework activities. The findings have implications for expanding the definition of edgework beyond voluntary activities and understanding the essential components that lead to specific emotional feelings.
Subject Category
Social Science Categories: Sociology
Special Topic Information
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne

Funding Sources
None

45 • Emotional Energy without Interactions with Others: Power of Nature?

Megan Kim

Abstract
American sociologist Randall Collins, states that when a group of 2 or more people is put together and they focus attention on a common object, this generates group solidarity and emotional energy such as feelings of confidence and self-feeling. Despite this, I wondered if emotional energy can be generated in other ways besides group interactions. This study was conducted to determine if being in nature by oneself can create emotional energy and feelings of confidence as well as self-feeling. This study was created to better understand if one can receive emotional energy in different ways. Through the method of sociological introspection, it was determined that emotional energy can be a result of spending time in nature alone.

Subject Category
Social Science Categories: Sociology

Faculty Sponsor Department
Sociology

Faculty Sponsor
Steve Derne

Funding Sources
None

57 • Silent Conversations: The Role of Internal Dialogue in Emotional Energy

Madeline Kohn

Abstract
Sociologist Randall Collins proposes that emotional energy is gained through “interaction rituals” in which two or more people have a shared focus. Drawing on Collins' theory of interaction rituals, this research uses sociological introspection to investigate how reading in solitude and journaling the experience influences emotional energy. The research findings supplement Collins’ theory by demonstrating that emotional energy can be gained in solitude through one’s internal dialogue. Exploring how solitary activities may lead to emotional energy is important because it demonstrates new ways individuals may gain emotional energy by themselves. This research shows that internal dialogues may be an adequate alternative to face-to-face interactions, which opens the door to exploring other ways individuals can gain emotional energy.

Subject Category
Social Science Categories: Sociology

Faculty Sponsor Department
Sociology

Faculty Sponsor
Steve Derne

Funding Sources
None

1E: WOMEN'S AND GENDER STUDIES CAPSTONE PANEL 1

10:00-11:15am, Wednesday, 24 April 2024, Bailey 105
Session Chair
Olaocha Nwadiuto Nwabara, English

183 • Racial Barriers Inside of Golf

EJ Rouse
Abstract
I decided to focus my research on Tiger Woods and the impact he has on young African/Black children to play golf. Tiger Woods is an inspiration to many golfers including me and helped breakdown the racial barrier to the game. By Tiger Woods succeeding in a game that has been dominated by white males for many years it has led to a more diverse range of players. Throughout the research I will be incorporating many articles and interviews from throughout his career of inspiring children. He is a great role model for many and has even donated some of his career earnings and endorsements money to many charities and communities. There are also class barriers as many people cannot see as there are many diverse families that are not able to afford a set of clubs. Also, many people do not have a golf course near their homes or can even afford the fee to play on the course. Not only has Tiger Woods helped breakdown the barrier for the game but he has also changed many aspects of it as many teenagers are starting to go pro.
Subject Category
Interdisciplinary and Other Categories: Black Studies
Faculty Sponsor Department
English, Black Studies, Women's and Gender Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
Funding Sources
None

128 • Exploring the Representation and Media Portrayal of Black Women Athletes: Implications for Mental Health and Well-being

Katrina Clare
Abstract
The representation of Black women athletes in the media has been a topic of considerable interest and concern due to its potential impact on societal perceptions and individual well-being. Despite their remarkable achievements in sports, Black women athletes often face stereotypical portrayals and underrepresentation in mainstream media. This research aims to explore the relationship between media portrayal, representation, and the mental health of Black women athletes. This research is significant as it sheds light on the intersection of race, gender, media representation, and mental health within the context of sports. Findings from this study can inform media practitioners, policymakers, and sports organizations about the importance of equitable and respectful representation of Black women athletes. Additionally, it can contribute to efforts to promote mental health awareness and support within the sports community. The proposed research seeks to deepen our understanding of the complex relationship between media portrayal, representation, and mental health among Black women athletes. By highlighting the challenges, they face and the potential implications for their well-being, this study aims to contribute to efforts to promote more inclusive and supportive environments within sports and media industries.
Subject Category
Interdisciplinary and Other Categories: Women and Gender Studies
Faculty Sponsor Department
English, Black Studies, Women's and Gender Studies
Faculty Sponsor

Olaocha Nwadiuto Nwabara

Funding Sources

None

143 • Navigating Sex Education: Perspectives from Students, Teachers, and Society

Kailynn Corey

Abstract

Sex education has been a critical component in the development of adolescents and their influence on decision-making, social interactions, and health outcomes. The debate is whether sex education should teach the younger audience how to give consent and have safe sex or whether to emphasize the risks of getting involved in sexual acts, implying that all around kids are learning different meanings of sex. Data shows that students who lack effective sex education are at risk for future mental health challenges creating an everlasting impact in how a student develops mentally. While sex education has a lasting impact on younger students, teachers also find themselves struggling to face the challenges of teaching about sex and the discomfort and lack of training that comes with it. Outside of schools, with the rise of technology in the 21st century, adolescents are absorbed into a new world of perspectives on sex education and are accustomed to feelings of guilt, cyberbullying, and pressure to conform to unrealistic standards. Through evidence and data, there is an emphasis on the importance of effective sex education that promotes open communication between educators, parents, and adolescents creating a supportive environment. Highlighting on sex education and the multiple means of how it is taught, the purpose of this research is to gain insight into the impacts of sex education on students and teachers along with societies outside influences and perspectives.

Subject Category

School of Education Categories: Early Childhood/Childhood Education

Special Topic Information

Faculty Sponsor Department

English, Black Studies, Women's and Gender Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

Funding Sources

None

86 • Debility and Ableism: Justifying and Reifying Marginalization

Cameron O'Brien

Abstract

Using Jasbir Puar’s model of debility, capacity, and disability, I examine the ways that ableist ideology is and has been utilized in oppressive narratives of numerous marginalized peoples. Debility combined ableist sentiments of disposability creates a self-fulfilling cycle of marginalization that can easily be weaponized by oppressive powers, especially in times of disaster. I establish the connections between these concepts through a literature review of secondary sources, including Puar’s The Right to Maim, and then apply them to current topics of political tension. This involves looking at rhetoric surrounding transgender legislation, the pandemic, the upcoming presidential election, and the broader political landscape of incivility. For this I carry out a discourse analysis pulling examples primarily from Twitter (X) and TikTok.

This constructs my case of the prevalence of ableism in our often-dehumanizing rhetoric and why it is essential that we recognize it as such even in cases where it is not directed at people who are explicitly disabled. Leaving this ableism unchecked in progressive spaces opens the door to harmful ideologies that will continue to be capitalized upon by political opposition and will pollute the intentions of feminist, anti-capitalist, anti-racist, and anti-fascist initiatives.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

English, Black Studies, Women's and Gender Studies

Faculty Sponsor
Olaocha Nwadiuto Nwabara
Funding Sources
None

1F: EDGAR FELLOWS CAPSTONES PANEL 1

10:00-11:15am, Wednesday, 24 April 2024, Bailey 201
Session Chair
Michael Mills, National Scholarships and Fellowships

52 • Social Interaction Post-Retirement Study

Brooke Witherow
Abstract
Alzheimer's Disease (AD) is one of the mental disorders most likely to increase as the American population gets increasingly older. The majority of research concerning AD focuses on physiological, biological, or neurological sources to its origins. Newer and more current research examines social risk factors, such as isolation and loneliness, in understanding the development of AD. Through the use of surveys, interviews, and cognitive testing, recent studies have found relevant associations between social factors and cognitive functioning. However, these associations are not an accepted feature of the current medical model of AD, nor do they address how changes in social interests and activities as people age may affect their likelihood of developing AD. My Capstone research project addresses these limitations by examining how people's lives change post-retirement. I interviewed post-retirement participants about their previous work environment, the clubs or activities in which they participate, and their relationships with friends and family. The interview served to gain an understanding of the complexities of social interaction that cannot be answered by other methodologies. Additionally, a social interests and activities table was administered in which the participants indicated whether different interests and activities have become less important, as important, or more important to them since retiring. Interviews and completion of the table were conducted to gain a more comprehensive understanding of a potential relationship between changes in social interaction post-retirement and social interests and activities. This information can then lead to further research that explores whether such changes impact cognitive status in seniors.
Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Faculty Sponsor Department
Sociology
Faculty Sponsor
Anne Eisenberg
Funding Sources
None

124 • Ambient Identity Cues in On-Campus Study Spaces

Charlotte Sutphin
Abstract
Belonging is a basic human need that can have large impacts on health and general well-being (Baumeister & Leary, 1995). Ambient identity cues - socially symbolic objects that convey social stereotypes within a given environment (Cheryan et al., 2009) - can serve as an important signal of belonging. The current research focuses on these cues in academic buildings on SUNY Geneseo's campus. SUNY Geneseo provides several on-campus spaces in which students can study, converse, or simply spend their time. As students become acquainted with campus, there are spaces around campus, specifically in the academic buildings, that draw more use than others. Many students use these spaces for both academic work and social interactions. However, students' choices in which space they select may reflect (or inform) their feelings of belonging. These feelings of belonging may be dependent on major, gender, class year, or other

identity markers. Additionally, feelings of belonging have been shown to have long-term impacts on academic performance, specifically for college students (Baumeister & Leary, 1995). We additionally aim to assess the relationship between identity cues present in various spaces across campus on retention rates for specific majors; it is anticipated that lower retention may be a result of lower feelings of belonging due to designated academic/social spaces catered to certain majors.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Psychology

Faculty Sponsor

Claire Gravelin

Funding Sources

None

44 • Reducing Competitive Performance Anxiety in Division III Female Athletes: A Motivational Climate Approach

Grace Kanaley

Abstract

Past research into motivation in sport has highlighted the importance of motivational climate for athlete well-being, including athletes' management of competitive performance anxiety. When athletes perceive an ego-involved climate in which winning is valued above self-improvement, and when peer comparison is repeatedly used as a tool for motivation, athletes may develop a fixed mindset. They may become externally regulated and ego-oriented, leading to poor adaptivity to stress and increased susceptibility to competitive performance anxiety. An intervention based on the TARGET and CET models to increase task-involving coaching behaviors is proposed. The proposed intervention will help coaches by teaching activities and techniques that they can apply to their coaching which are designed to facilitate optimal motivational climate. The TARGET/CET intervention was designed with the aim of helping coaches support athletes experience increased internal regulation and task-orientation. In turn, these increases should lead to improved stress management, including reduced competitive performance anxiety.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jennifer Katz

Funding Sources

None

97 • The Van Tac Vu Program: Psychological Warfare in the Vietnam War

Lucas Schaffer

Abstract

During the Vietnam War, the United States ran an extensive program of psychological warfare in order to win the 'hearts and minds' of the Vietnamese people. The Van Tac Vu program was one of the many psychological operations conducted by the United States in South Vietnam. Utilizing traveling Vietnamese cultural-drama troupes and drawing from Vietnamese culture, this program sought to win the sympathies of rural Vietnamese whom the Viet Cong were also seeking to influence. The Van Tac Vu cultural-drama troupes had many roles as they worked on the frontlines of the psychological war for Vietnam. They performed propaganda-infused skits, magic shows, songs, and plays for rural audiences, they worked on civic action projects and helped in the construction of houses, bridges, and roads, and they attempted to indoctrinate children through a strategy known as 'cultural seed-planting.' Very little scholarship exists on

the Van Tac Vu program. For this reason, this thesis highlights this largely unexplored and under-researched aspect of the psychological war in Vietnam, and sheds light on the wider American failure in Vietnam.

Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Faculty Sponsor Department
History
Faculty Sponsor
Jordan Kleiman
Funding Sources
History Department Grant

1G: EDGAR FELLOWS CAPSTONES PANEL 2

10:00-11:15am, Wednesday, 24 April 2024, Bailey 202
Session Chair
Wendy Pogozelski, Chemistry

107 • The Rentier Effect in Reverse: Economic Diversification in Authoritarian Regimes

Jesse Larkin
Abstract
Does authoritarian regimes' economic diversification into green energy sectors away from a concentration in oil sectors undermine such regimes and advance democratization? As the world comes to rely less on petroleum and more on renewable energy sources, this shift will have implications for rentier states. Rentier states generate significant portions of their revenues through oil sales, and often, this practice facilitates political authoritarianism by leaders using these oil revenues as a substitution for tax revenue, which would otherwise generate demands for more political accountability. Additionally, authoritarian regimes can easily conceal the full scope of oil revenues and give the public the false impression that they are supplying them with many benefits using limited means, all while using the diverted funds to set up patronage networks and suppress dissent, further bolstering the regime's hold on power. My research tests whether economic diversification into green energy undermines the rentier effect and, in turn, authoritarian regimes utilizing standard political science statistical techniques. I consider various causal mechanisms. At the individual level of analysis, the expansion of labor-intensive sectors of the economy would increase economic participation, which, according to modernization theory, should facilitate democratization. As tax revenue comes to replace oil revenues, corruption, and clientelism should decrease, and demands for political accountability should increase. At the state level of analysis, an observable occurrence would be the total collapse of a regime or signs of decreased hold on power in the form of more stringent checks on the executive.
Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Special Topic Information
Faculty Sponsor Department
Political Science and International Relations
Faculty Sponsor
Andrew Hart
Funding Sources
None

222 • Social Coping among Geneseo Students across Gender

Jake Bancroft
Abstract

Human beings are social creatures. For centuries we have thrived in groups, and much of our daily interactions reflect differing social relationships. Humans as we know it cannot survive without social interaction. So when we find ourselves distressed or in times of need, how do we utilize our relationships? We sought out to collect information about Geneseo's undergraduate students, specifically comparing the differences in social help-seeking behavior between men and women. We distributed a survey containing two questionnaires and four short answer questions to collect quantitative data for statistical analysis, as well as anecdotal data from students' specific experiences. This study serves as a proof of concept for further research regarding social coping behavior and the differences between men and women's socialization.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Psychology

Faculty Sponsor

Christine Merrilees

Funding Sources

None

194 • The Role of Characteristics of Undergraduate Institutions' as Determinants of Starting Salary Post-Graduation: An Ordinary Least Squares Regression Analysis

Jacob Vogel

Abstract

With rising education costs and online certification and degree courses rising in popularity, the decision to attend college has been a larger investment than ever before. Students are taking out debt at higher rates than ever, making the decision of where to attend college of the utmost importance. However many students enter college with an undeclared major and are unsure of what they want to do after graduation. Because of these circumstances, this decision can be extremely overwhelming and difficult for families across the country. The objective of this study is to determine if certain factors at undergraduate institutions have an impact on the starting salary of a given institution's graduates. Collecting 15 variables across 681 observations, a linear regression analysis is used to determine which variables have the largest impact on a graduate's starting salary. While there is plenty of research on these individual variables in a vacuum, the way these variables interact within a college campus is the main purpose of this research. Using a literature review and the data collected, the final regression model contains a college's loan default rate, gender demographics, endowment size, school location, retention rate, and graduation rate. The regression results indicate there are certain variables of these institutions that have a statistically significant impact on starting salary post-graduation. This research provides families and prospective college students with guidance as to what characteristics have the greatest impact on success after graduation to make an informed decision on higher education.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Business

Faculty Sponsor

Farooq Sheikh

Funding Sources

None

159 • A Content Analysis of Gender Roles and Sexism in Romantic Movies Featuring LGBTQ+ and Straight Couples

Abigail Verhayden

Abstract

Historically, romance movies only featured heterosexual couples, a fact that is changing as homosexual couples and characters are gaining more representation in the romance genre. LGBTQ+ representation is important as it may educate viewers about the LGBTQ+ community, and give young LGBTQ+ viewers positive models in the media. However, often, these representations are not always positive and, at times, may reinforce negative stereotypes surrounding the LGBTQ+ community in terms of gender roles and sexist attitudes. Very few studies have investigated content differences between heterosexual and LGBTQ+ romantic movies. Thus, the current project explored the gender roles and sexist representations of main characters and supporting characters in 20 romance movies (10 featuring a homosexual couple and 10 featuring a heterosexual couple). It was hypothesized that movies featuring heterosexual couples would also include more instances of sexism and traditional gender roles than movies featuring homosexual couples.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

Faculty Sponsor Department

Psychology

Faculty Sponsor

Steven Kirsh

Funding Sources

None

1H: APPLYING MATHEMATICS

10:00-11:15am, Wednesday, 24 April 2024, Bailey 203

Session Chair

Ahmad Almomani, Mathematics

137 • Applications of Fractional Calculus in Econophysics

Atik Ahmad

Abstract

Fractional derivatives behave quite differently from integer-order derivatives and allow us to explore concepts that cannot be properly studied with conventional differentiation alone. Through the use of fractional calculus techniques such as the Riemann-Liouville Integral and Caputo Fractional Derivative, numerous applications of fractional calculus in the natural sciences and economics have been discovered. We will examine the properties of fractional derivatives and integrals, their geometric interpretation, and their applications in econophysics, a field that applies physics to economic models through the incorporation of probability and random processes.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani

Funding Sources

None

126 • Analyzing the History of Foreign Aid and Development in Africa Mathematically

Mercy Charway

Abstract

Do you ever wonder why the wealthiest continent in the world is developing at a much slower pace than its Western counterparts? In this talk, we will be diving into the history of Foreign Aid and development using an Ordinary Least

Squares Regression to explore the relationship between Foreign Aid and Development through a comprehensive analysis of historical data spanning over the decades.

Subject Category

Science and Mathematics Categories: Mathematics

Special Topic Information

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

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani

Funding Sources

None

316 • Inventory Management and Order Quantity Optimization: A Simulated Approach using Ant Colony Optimization

Benjamin DesJardins

Abstract

Large scale inventory tasks businesses with the challenge of balancing holding costs and the price of replenishing stock while still ensuring stability in operations. In nature, ants apply a type of decision making to find optimal foraging paths while still exploring alternative or new routes to find one more efficient. Ant Colony Optimization (ACO) is meta-heuristic algorithm that mimics this behavior and is applied to optimize these order quantities. Using simulated datasets consisting of demand, lead times, and other costs, ACO is applied to minimize total costs while still maintaining required performance one would expect from a business. By finding near optimal solutions using ACO, effective reduction of inventory costs and optimized order quantities are demonstrated. Ant Colony Optimization is one of the many algorithms that can be used to provide insights for businesses and improving inventory management.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani

Funding Sources

None

294 • Math's Involvement in Music

Nicholas Thompson

Abstract

Music and math have gone hand-in-hand since their beginnings. Pythagoras was the first to realize that whole number ratios can produce harmonious sounds that are pleasurable to the human ear in 600 B.C. From this point, music has advanced to what we know it as today. This paper will take a closer look at the history of the involvement of mathematics in music.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani

Funding Sources

None

191 • Dylan Rogers Collatz Conjecture

Dylan Rogers

Abstract

This presentation will start with a brief talk about the history of the Collatz Conjecture. Following the introduction will be the background of how it started. This will talk about the importance of the Collatz Conjecture, why it started, and why no one has solved it yet. I will then talk about the notable names and their progression with the Collatz Conjecture, followed by the total progression by everyone. Following this will be the current status that people have figured out. Lastly, I will end with the thoughts that I was able to come up with on the conjecture, and what I was able to find.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani

Funding Sources

None

1I: BUSINESS IMPACT

10:00-11:15am, Wednesday, 24 April 2024, Bailey 204

Session Chair

Avan Jassawalla, School of Business

4 • Impact of Increase in Remote Work on Women's Career Equality

Julia Kimmel, Dillon Zdrojewski, Jason Copella, Ryan Shannon, Ian Francis

Abstract

The trend towards remote work has seen a significant increase from 2009 to 2023 by 159%. Since 2020, the number of women working remotely has increased by 23%, compared to a 16% increase for men. This shift towards remote work has been more pronounced among women, with a higher percentage preferring this option even before the pandemic. This shift has brought about a more equitable pay structure, with the pay gap narrowing to just 3% in remote work settings, compared to 20-25% in traditional, on-site roles. However, the transition to remote work has not been without its challenges. Women often find themselves balancing professional responsibilities with household chores and childcare. The COVID-19 pandemic exacerbated this issue, with telecommuting mothers spending more time on housework and childcare than their male counterparts. This additional burden has led to a decrease in productivity and job satisfaction. These trends underscore the need for a more nuanced approach to addressing women's needs in the workplace, especially as it increasingly shifts to the home. This involves amplifying women's voices in organizational decision-making processes, particularly those concerning workplace policies and the future of work. Despite the challenges, remote work offers several advantages and presents an opportunity for policy changes that foster an environment conducive to women's career growth. However, it's important to remember that these changes need to be implemented thoughtfully to ensure they don't inadvertently reinforce existing inequalities. As remote work continues to rise, it's crucial to continue asking important questions and seeking solutions to these challenges.

Subject Category

School of Business Categories: Business Administration

Faculty Sponsor Department

School of Business

Faculty Sponsor

Avan Jassawalla

Funding Sources
None

247 • Impact of Managerial Communications with Remote/Hybrid Employees on Establishing and Maintaining a Strong Company Culture

Cordelia Bair, Robert Harrington, Jemorie Nsiah, Areena Schuldt

Abstract
Maintaining a strong company culture poses challenges in the dynamic landscape of remote and hybrid work. Research indicates that working remotely decreases employees' connection to their organization's culture. Managerial communication emerges as a crucial component in promoting collaboration and fostering alignment between remote employees and the company's values. Managers must intentionally communicate to emphasize values and purpose in ways that guide remote workers to assimilate. This exploration emphasizes flexibility and proactive strategies to navigate virtual communication that ensures remote and hybrid team members remain connected and aligned with organizational values and cultural foundations. In this presentation, we will share our research findings on the intricate relationship between remote workers and company culture with strategies and recommendations to increase managerial communication and organizational effectiveness.

Subject Category
School of Business Categories: Business Administration

Faculty Sponsor Department
School of Business

Faculty Sponsor
Avan Jassawalla

Funding Sources
None

21 • Heath Care Recruitment: Post Covid-19 Pandemic

Natalie Mandrycky, Tyler Steinberg

Abstract
Recruitment practices have undergone significant changes post-COVID-19, with lingering effects still impacting the workforce. The pandemic led to increased turnover, a focus on work-life balance, and decreased productivity, particularly in the healthcare industry where long hours and stress were prevalent. Women, who make up the majority of workers in this industry, were disproportionately affected and many left the workforce. HR managers now face the challenge of adapting strategies to the new virtual recruitment landscape to try and bring back these care workers. We will present our research findings on new strategies for which are vital for HR professionals to effectively recruit and retain employees in the healthcare sector, especially women.

Subject Category
School of Business Categories: Human Resource Management

Faculty Sponsor Department
School of Business

Faculty Sponsor
Avan Jassawalla

Funding Sources
None

1J: CHEMISTRY HONORS RESEARCH PANEL

10:00-11:15am, Wednesday, 24 April 2024, Welles 115
Session Chair
Jeffrey Peterson, Chemistry

166 • Synthesis of 1,3,4-Oxadiazoles and 1,3,4-Thiadiazoles and Biological Testing Against *Staphylococcus epidermidis*

Margaret Hintz

Abstract
Oxadiazoles are privileged scaffolds with known activity against bacterial strains. In this research, we attempted to synthesize a variety of semicarbazones and their corresponding 1,3,4- oxadiazoles and we tested the synthesized oxadiazoles to determine their biological activity against a Biosafety Level I strain of *Staphylococcus epidermidis*. To make the reactions green, the semicarbazones were synthesized using ethyl lactate as the solvent, as it has been designated as a green solvent by the American Chemical Society. Ultimately, we successfully synthesized benzaldehyde semicarbazone (**A1**), 4-bromobenzaldehyde semicarbazone (**A2**), 4- chlorobenzaldehyde semicarbazone (**A3**), and 4-isopropylbenzaldehyde semicarbazone (**A5**), standard benzaldehyde oxadiazole (**B1**), green benzaldehyde oxadiazole (**B1.1**), 4- bromobenzaldehyde oxadiazole (**B2**), 4-chlorobenzaldehyde oxadiazole (**B3**), and 4- isopropylbenzaldehyde oxadiazole (**B5**). All the oxadiazoles tested were determined to be ineffective against *Staphylococcus epidermidis*, although further testing may be pursued in the future with other oxadiazoles to see if we can identify compounds that have medicinal potential. We also synthesized thiadiazoles—as they are also known for their antibacterial activity—and tested those compounds against *Staph. epi* as well.

Subject Category
Science and Mathematics Categories: Chemistry
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Eric Helms
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award

34 • Synthesis, Optical Characterization and Size Determination of CdSe Nanoplatelets

Madalyn Hymowitz

Abstract
Cadmium selenide nanoplatelets (CdSe NPLs) were synthesized and their lateral size was determined by multiple methods. CdSe NPLs with a constant number of monolayers were synthesized with varying growth times to alter the lateral growth. The CdSe NPLs were found to be 3 monolayers (ML) thick by UV-Vis and fluorescence spectroscopic determinations and comparisons to literature values. Transmission electron microscopy (TEM) was used to determine the lateral size of the nanoplatelets, with this being the established method to be used as the standard for comparison. Dynamic light scattering (DLS) was then used as a potential new method to measure lateral growth. Following the determination of the lateral growth by both methods, a comparison of the measurements was performed to determine the validity of the DLS method. If DLS is proven as a successful method it would significantly expedite the lateral size determination of CdSe NPLs.

Subject Category
Science and Mathematics Categories: Chemistry

Faculty Sponsor Department
Chemistry
Faculty Sponsor
Jeffrey Peterson
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

157 • Evaluating the Antibacterial Activity of Ru(II)-arene Complexes

Trevor Bollinger, Brian Murphy
Abstract
The inappropriate use of antibiotics has led to the pressing health issue of antibiotic resistance. Despite the rapid development of novel classes of antibiotics in the early and middle 20th century, recent development has slowed. Metal-based compounds represent an avenue of research for creating novel classes of antibiotics. Metal complexes have unique geometries and the metal center's positive charge aids in interactions with biomolecules like DNA and proteins. A recent ruthenium compound named C2 incorporated ferrocene into the scaffold and had a minimum inhibitory concentration of 16 µg/mL against methicillin-resistant S. aureus (MRSA). This research evaluates novel ruthenium(ii)-arene complexes modeled after C2. Two of the compounds studied contain ferrocene. Consistent with previous work done in the Webb lab, the presence of ferrocene improved antibacterial activity. The results also suggested a greater lipophilicity, measured by a LogD assay, led to greater activity. Compared to previous research, these compounds were less active against bacteria. These compounds exhibited biocompatibility as the highest percent lysis of red blood cells was 3.45%. For biocomptibility, the highest admissible percent lysis for biological materials is 5%. The data presented in this research is analyzed with previous work done by the Webb lab to examine the antibacterial activity of these novel Ru(ii)-arene complexes.
Subject Category
Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Michael Webb
Funding Sources
Research for the summer of 2023 was made possible by a Geneseo Chemistry Alumni Summer Research Fellowship

1K: MEDIEVAL INTERSECTIONS

10:00-11:15am, Wednesday, 24 April 2024, Welles 117
Session Chair
Nicole Kemmett

25 • At the Intersection of Medieval and LGBT Studies: An Archive at Geneseo

Katlin McNeil
Abstract
Queer Medievalist Archives (A Roundtable), which will be presented at the 59th International Congress in Medieval Studies. This archive was created through a directed study in the fall of 2023 with the help of a librarian (Elizabeth Argentieri), faculty (Dr. Graham Drake), and a student (Katlin McNeil). The archive covers the history of the International Congress itself and the foundation of the Queer Medievalist Studies within historical discourse. The archive was made and will be deposited at Milne Library at SUNY Geneseo once finished, where it will be in an open archive for students to access both online and in person. The archive has a dedicated website showing the formation of the archive itself and the students' work on an archive at the undergraduate level.
Subject Category

Arts and Humanities Categories: English

Special Topic Information

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

Faculty Sponsor Department

English

Faculty Sponsor

Graham Drake

This presentation will also be presented at:

The 59th International Congress on Medieval Studies in Kalamazoo

Funding Sources

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

35 • Liminality and Travel in Chaucer's General Prologue

Aurelia Tice

Abstract

Geoffrey Chaucer was a man surrounded by movement for much of his life, never belonging to any one class and constantly moving between them. It is no wonder that he eventually wrote *the Canterbury Tales*, a collection of stories linked in concept by travel and liminality. This essay takes a look into Chaucer's liminal life before exploring the theme of movement specifically in the General Prologue of the Canterbury Tales, examining the motif's pervasiveness in the Prologue's metrical structure, the characterization of several of its pilgrims, and the word play Chaucer creates.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English

Faculty Sponsor

Graham Drake

Funding Sources

None

5 • Elon Musk and Plato’s Philosophy

Makayla French

Abstract

This essay is a comparison between Plato’s Socratic dialogue The Republic, and billionaire Elon Musk’s mindset explored through a book review on Elon Musk by Walter Isaacson. Plato's ideas of the “ideal society” along with the roles people play in an ideal society, justice, sex, and censorship align with Elon Musk's lifestyle and business mindset, showing Plato's ideas are still relevant today. Isaacson’s shadowing experience shed light on Musk’s plans for future space exploration, the climate crisis, and how his mindset affects how he makes decisions for his company and the company's daily routines, which is then connected back to Plato's dialogue about the guardians of the ideal city.

Subject Category

Arts and Humanities Categories: Philosophy

Special Topic Information

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

Faculty Sponsor Department

English

Faculty Sponsor

Graham Drake

Funding Sources

None

1L: COMMUNICATING THROUGH SILENT NARRATIVE FILM

10:00-11:15am, Wednesday, 24 April 2024, Welles 119
Session Chair
Rick Ruiz

322 • Beyond Borders: A Look Into Resource Disparities and Life Shaping (Original Film Debut)

Kaelyn De La Cruz
Abstract
This original short documentary style film is a environmental and visual critique of space and the way it affects individuals, specifically when it comes to resources in underserved communities in comparison to communities where these resources are more prevalent. This film also explores how individuals who come from underserved communities use and view these resources once they are exposed to them as a result of a change in environment. This film explores resources with themes of therapy, health/movement, and community structure. This film attest to the fact that we are products of our environment, and that environment does shape us but that is not a conclusive endpoint of our destinies or potential.
Subject Category
Social Science Categories: Communication
Special Topic Information
Faculty Sponsor Department
Communication
Faculty Sponsor
Lee Pierce
Funding Sources
None

81 • Rejection (Original Film Debut)

Rick Ruiz
Abstract
This original 3 minute narrative film was created for a visual communication class and tells the story of a young college student protagonist who is going through a tough day feeling rejected and unheard at every turn. The film explores themes of alienation, rejection, and how suffering the slings and arrows of our fellow humans makes it difficult for us to connect genuinely.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Lee Pierce
Funding Sources
None

92 • The Long Journey to Inaccessibility

Samuel Healy, Kylie Touchette
Abstract

This original 3 minute silent narrative film was created for a visual communication class and tells the story of college student with a disability and their long walk through campus to get to their final destination, filled with mundane trials and tribulations of topography that able bodied students might not notice. The film offers a thoughtful take on the practicality and reality of Geneseo's branding as it follows a student with cerebral palsy on his walk to the Office of Accessibility.

Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Lee Pierce
Funding Sources
None

1M: THE WORLD THROUGH DANCE

10:00-11:15am, Wednesday, 24 April 2024, Welles 128
Session Chair
Jonette Lancos, Theatre & Dance

368 • Flamenco Dance: Origins and Contemporary Applications

Cadence Panol
Abstract
Flamenco is.a dance which originated in Spain, taking off in the mid 1800's in café cantantes. Its name, “flamenco,” is actually said to have been derived from the word “flama,” meaning flame. Flamenco is still an intense and electric dance, but it is more soulful and elegant. After having personally taken flamenco classes for two years, I decided to do further research into the origins of the style of dance. Flamenco dance is the dance of the Romani people, who were constantly persecuted as a non-Catholic group of people in a very Catholic Spain. The Romani people, who are also known as gitanos, or gypsies, were not actually even Spanish to begin with. It is said that the gitanos are actually from the Punjab region of India, and that they migrated through Iran and Turkey, singing and dancing about their stories of loss and tragedy. I interviewed my dance teacher, Marisa Guzman, who studied flamenco in Spain, and compared those contemporary experiences to historical applications of the dance. Furthermore, contemporary artists have taken elements of flamenco and fused them with other styles of music and dance in order to engage more mainstream audiences. These pioneers are in direct contention with traditional flamenco performers, who practice a more pure form of the art. Neither is the "correct" way of performing the dance, but both raise important questions of the future of stylized and ethnically-linked traditional dances in an increasingly globalized world.
Subject Category
Arts and Humanities Categories: Dance
Faculty Sponsor Department
Theatre and Dance
Faculty Sponsor
Jonette Lancos
Funding Sources
None

178 • Dance as Identity and Communication: Expression of Bharatanatyam

Shannon Ervay
Abstract

This paper describes the importance of understanding the intention imbued in genres of dance through cultural knowledge, specifically through Bharatanatyam. By investigating the origins of movement from around the world, dance can be understood as a form of language in addition to a source of release and celebrations. By honing empathy towards kinesthetic traditions, we can have a greater understanding of dance as a source of affirming identity and communication.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

Funding Sources

None

367 • The Intersectionality and Differentiation of Ethnic vs Folk Dance

Cadence Panol

Abstract

The line between ethnic dance and folk dance is a rather blurry one. It definitely exists, but there is more overlap than one would expect. The main difference between the two types of dances is the link to ethnologically-based religion and rituals. Ethnic dance emphasizes the importance of these two factors, whereas folk dance is primarily concerned with social customs and recreational events. While ethnic dances can be dedicated to the celebration of different phases of life–birth, puberty, pregnancy, etc–they are more rooted in the culture of that particular society and have a more ritualistic nature. Dances can also shift from being ethnic dances to more folk in nature with time, as is made apparent with Native American tribes across the United States. The intersection between folk and ethnic dance will continue to be observed, and only time will tell if a new classification will emerge for these hybrid dances, or if there will be increased efforts to delineate the two existing terms.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

Funding Sources

None

196 • A Research Exploration of Ethnic, Folk, and Modern Dance

Morgan Comstock

Abstract

Dance is an intricate component of society. Creative movement is often scrutinized, although it is the embodiment of both cultural knowledge and kinesthetic principles. Folk dance is known for its association with social customs and recreational events, whereas ethnic dance has a strong regional and cultural heritage interwoven into its foundation. Despite differences in historical upbringing, views by society, and choreographic qualities, it is important to appreciate both forms of dance as essential parts of global contribution. Folk dance has provided the public with an informal style of dance that fosters relationship-building and enjoyment. In contrast, ethnic dance has provided people with the opportunity to better understand the cultures of people, whom they likely would never have learned about elsewhere. Modern dance is significant in providing a historical story of rebellion from traditional ballet techniques. The popularity and attributes associated with modern dance can be correlated to two influential female trailblazers. Loïe Fuller and Isadora Duncan offered originality and innovation to dance. Fuller experimented with lighting and fabric, to create breathtaking images on stage, while simultaneously promoting the idea that a single performer could command an

audience. Dance was also affected by Duncan who broke away from rigid technique profiles. She indulged in self-expressive movement that shifted traditional mindsets to now prioritize the preference of dancers. Through the evaluation of modern dancers, the American Physical Culture Movement, Art Nouveau, and Japanese Woodcut Prints, a clear shift in ideology and art is depicted.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

Funding Sources

None

279 • Loïe Fuller & Isadora Duncan: Changing the Aesthetics of Dance

Shannon Altman

Abstract

Through research, passion, and the exploration of risk taking, Loïe Fuller and Isadora Duncan made unforgettable contributions to dance and theatre arts. Dance has historically changed forms throughout history to mirror society. As the world progressed in technology and innovations, Loïe Fuller and Isadora Duncan worked to create evolution in the arts that expanded upon dances capabilities. The typical dance you see on stage today or even on campus, has direct connections to the work of Loïe Fuller and Isadora Duncan. As a result of their geniuses, dance and the arts transformed from a mere source of entertainment to a full body and mind experience and expression. Not only are they pioneers of dance, they paved the way for generations of dancers and artists to come, and their nuances to art must continue to be celebrated in our society.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

Funding Sources

None

348 • Integrating Arts: Dance and Theatre in Childhood/Special Education Classrooms

Alexa Shulder

Abstract

This presentation will explore the intersection of dance and theatre as effective tools for enhancing learning experiences in Childhood and Special e=Education classrooms. Incorporating dance and theatre into educational settings will be discussed with a main focus on meeting the diverse needs of different types of students with varying abilities.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Jonette Lancos

Funding Sources

None

1N: NEW PERSPECTIVES IN SOCIOMEDICAL SCIENCES

10:00-11:15am, Wednesday, 24 April 2024, Welles 131
Session Chair
Jesse Bia, Anthropology

26 • Silent Struggles: Relative Energy Deficiency in Sport (REDs) in Female Athletes

Veronica Szygalowicz

Abstract
Relative Energy Deficiency in Sport (REDs) is a condition caused by prolonged periods of reduced energy intake relative to expenditure, specifically in the context of sport. The exact prevalence of this condition is unknown, but data suggests that most of the athletic population is affected by REDs. This interview-based project was designed to investigate the state of REDs knowledge, awareness, and practices in female athletes and those working with them. Female athletes were the primary focus given their relative absence from the research. Results suggest that most cases of REDs are caused by unintentional nutrient restriction, with parents, society, and social media spreading poor nutrition behaviors and information that athletes eventually adopt. Identifying and treating REDs is complicated by the need for willingness and cooperation from athletes, who may be unaware of their inadequate fueling practices or be intentionally hiding their restrictive behaviors. Obtaining an official diagnosis is often a complex and lengthy process, as many healthcare professionals must work together to exclude other potential medical conditions. Overall, the study suggests that at-large REDs education is necessary for athletes and those who work with them. Additionally, implementing REDs screening practices, employing dietitians, and making support and similar resources available at sports institutions may decrease the prevalence of REDs and expedite the identification and treatment process.

Subject Category
Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department
Anthropology

Faculty Sponsor
Jesse Bia

This presentation will also be presented at:
State University of New York Undergraduate Research Conference 2024

Funding Sources
None

342 • "More Alike Than Different": The Normalization of Parenting a Child with Special Needs and the Problems of Labeling in the Disability Community

Alexandra Galle

Abstract
Based on the findings of a semester-long Capstone Research Project, this study aimed to better understand the experience of caregiving for children with special needs from the perspective of parents and support professionals. Research was conducted through in-person and virtual individual and group interviews with six participants that had varying relationships to care work for individuals with special needs. Four of the interviews were with middle-class parents of individuals with special needs, one individual who worked as a care coordinator for a mental and behavioral health organization, and one former special education teacher and current special education administrator. Two major themes emerged from the research: parents wanted their own parenting experience to be seen as normal and more similar than foreign to the parenting experience of neurotypical children and there was an emerging dissonance of labeling usage in the disability community. Both of these findings provide a unique insight into how parents with special needs children navigate the experience of parenting not only for themselves, but also for their children. These findings may be of value for support professionals on how they can further assist both children and families through a better understanding of the perspective of parents that gain their trust. Understanding the impact of labeling on care for

individuals with special needs is vital to improving support services in the future that can better serve people with disabilities and their families.

Subject Category
Social Science Categories: Sociomedical Sciences
Faculty Sponsor Department
Sociomedical Sciences
Faculty Sponsor
Jesse Bia
Funding Sources
None

1O: WARPING THROUGH L.I.V.E.S.

10:00-11:15am, Wednesday, 24 April 2024, Newton 202
Session Chair
Jennifer Waddington, School of Education

3 • Warping Through L.I.V.E.S.

Sarah Quinlan, Bryanna Spaulding
Abstract
Our GREAT Day presentation will be looking at the past 15 years of the L.I.V.E.S. program being a part of the SUNY Geneseo Campus. Specifically we will be, exploring what the impact of this program been through the eyes of alumni, staff, educators, graduate assistants, and current students. The presentation will also be looking at how the program has changed throughout the years and how it has grown with Geneseo. Overall we will look at how L.I.V.E.S. has positively impacted the future of its graduates. Focusing on the purpose of the L.I.V.E.S. program and how Geneseo's relationship has fostered it's growth.
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
Funding Sources
None

CONCURRENT SESSION 2

11:30am-12:45pm, Wednesday, 24 April 2024

2A: MOCK TRIAL EXHIBITION

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 101
Session Chair
Pallavi Panda, School of Business

90 • Mock Trial Exhibition: The State of Midlands v. Berkley F. De la Porta & Poe Cameron

Abigail Helmes, Elliot Ford, Ethan Whitehead, Devyn Balfe, Aspen Griffing, Daniel Widing, Emily Trabulsi, Alexis Patrick, Sydney Tubin, Alexandra Messerklinger, Michael Matzek

Abstract
On October 31st, 2022, a group of four masked individuals broke into the high security vault at Miller Tower where the annual Sohi Children's Hospital Charity Gala was being hosted. The masked thieves managed to steal countless precious artifacts along with severely injuring Emory Sands, the security guard on duty the night of the heist. During the investigation into the heist, Poe Cameron is arrested as one of the four armed robbers, and their sibling Memphis Raynes is found deceased in the Midlands Marina. Poe Cameron is now on trial for the attempted murder of security guard Emory Sands. This is the 2023-2024 American Mock Trial Association case that Mock Trial at Geneseo participated in this year. Come watch us prosecute Poe Cameron, where you'll see serious lawyers and eccentric witnesses played by your very own classmates!

Subject Category
Interdisciplinary and Other Categories: Legal Studies
Faculty Sponsor Department
School of Business
Faculty Sponsor
Pallavi Panda
Funding Sources
None

2B: 2024 STUDENT AMBASSADORS

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 102
Session Chair
Brandon West, Fraser Library

46 • Women in Tattooing

Mia Ferraro

Abstract
Women in Tattooing's goal is to shine a light on the individuals from the past and present who have created a name for themselves in a historically male-dominated field. While tattooing in recent times has become more socially accepted it is still an overlooked art form by many traditional artists and art historians. It is important to showcase the creativity that tattoos hold and the unique self-expression they allow us to project through art. With this exhibition, we hope to discover why people enjoy self-expression through tattoos, educate the public about an often overlooked art form, and the empowerment this field of work can bring to all genders, but especially women. Women in Tattooing will showcase women from the past and present along with female artists who are currently working in the City of Rochester, their stories, their art, and how they have become empowered through tattooing.

Subject Category
Interdisciplinary and Other Categories: Art History
Faculty Sponsor Department
Library
Faculty Sponsor
Brandon West
Funding Sources
The Keith'11 and Joana'13 Walters Artist-in-Residence Ambassadorship

47 • Rewriting Monolithic Views

Torianna Robleto
Abstract
New York State teacher education programs require candidates to demonstrate an understanding and appreciation of culturally responsive teaching (CRT). CRT is a research-based approach to include and connect with students' cultures, life experiences, language, etc. to better apply the content learned within a classroom. While requiring a demonstration of these knowledges and practices, New York State (NYS) has yet to alter the curriculum standards to allow teachers the space and opportunity to utilize true CRT.
Through research in Senegal, I will challenge misconceptions and stereotypes presented in NYS social studies standards. The current standards surrounding Black and African studies do not go further than the transatlantic slave trade and the Jim Crow era; none of which is comprehensive in of itself because it fails to relate history to current events and treatment of Black and African people in the United States today. These standards are not only non-comprehensive in what they require students to know about history, they also paint a monolithic picture of the African continent.
To fight these embedded stereotypes, I am interviewing a variety of people in the West African nation of Senegal to determine how best to rewrite some of these biased standards presented in the K-12 social studies curriculum. After rewriting these standards, I will create a deliverable for schools to view and give feedback on its potential implementation. This deliverable will most likely come in the form of a professional development and model unit plan that teachers can choose to view and sample.
Subject Category
Interdisciplinary and Other Categories: Ambassador Program
Faculty Sponsor Department
Library
Faculty Sponsor
Brandon West
Funding Sources
Student Ambassador Award

148 • Building Community with Non-Patient Siblings

Alex Gaboury
Abstract
Relationships with siblings are crucial for development and long term outcomes. For siblings of individuals with disabilities or siblings of individuals with mental health concerns, (i.e., non-patient siblings), sibling relationships have especially salient developmental effects. This suggests the need for extra-familial support structures, such as peers in similar situations, to provide emotional validation and a place for authentic self-expression. The goal of this ambassadorship has been to provide that space for non-patient siblings that also works to disrupt these patterns of expectation, obligation, and responsibility and instead provide ways of considering self and personal goals alongside and within familial obligations. Through the Community Advocates Ambassadorship in Community Engagement, establishing a program to create this space has been made possible. Through activity based events, like crafts, movies, and outings, a sense of community will be fostered to allow participants to communicate outside, yet not despite, their family. This recognizes families of individuals with disabilities and mental health concerns as having different experiences than

families without, but as no less loving. Recognizing experiences that may not be similar to other classmates, yet familiar to peers in this program, gives room for participants to voice concerns and experiences without the fear of being judged–both for having a non-normative family experience, and/or for feeling a specific way concerning that family experience. This presentation will discuss the progress made thus far, the importance of this supportive space, and like the title of this ambassadorship suggests, how we can build community with non-patient siblings.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Library

Faculty Sponsor

Brandon West

Funding Sources

Student Ambassador Award

155 • Cultivating an Inclusive On-Campus Sexual Health Education Program

Victoria Stucchi, Emily Fitzpatrick

Abstract

Sexual health education is lacking on college campuses nationwide, especially for queer students, disabled students, and students of color (Aubrey et al., 2020). Additionally, data from the 2017 Youth Risk Behavior Surveillance System shows that LGBTQ+ young adults are more likely to engage in sexual risk behaviors, such as not using a condom or dental dam (Kann et al., 2018). Disabled people are typically infantilized and left out of sexual education conversations entirely (McDaniels et al., 2016). People of color are at much higher risk for sexual assault and STI's, and simultaneously receive less access to proper sexual education (Kuehnel, 2009). The purpose of our project is to expand on the work of Olivia Khangi ('23), who received the 2023 Ambassadorship in Innovation, to provide inclusive sexual health information that will improve the sexual health of the SUNY Geneseo community through the use of workshops, an updated website, and campus outreach.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Library

Faculty Sponsor

Brandon West

Funding Sources

Student Ambassador Award

198 • Transformative Travel: The Impact of Study Abroad on Underrepresented Students

Juslannie Rosso Brito

Abstract

My project, Transformative Travel: The Impact of Study Abroad on Underrepresented Students, will capture the narratives of first generation, BIPOC, and underrepresented students at SUNY Geneseo and their experiences abroad. Students will empower one another and discuss how they belong abroad, the resources available to them, and how to overcome challenges specific to their identities. I will work with the office of Access Opportunity Programs to create a brochure regarding the student perspective on study abroad. And work with the Office of Study Abroad to create a video presentation on the experience of underrepresented students on the SUNY Geneseo Summer 2024 faculty led Senegalese study abroad program, to publish online for the entire SUNY Geneseo community to view.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Library
Faculty Sponsor
Brandon West
Funding Sources
Student Ambassador Award

108 • High School Library Renovation in Haiti

Gaetan Jean Louis
Abstract
My country of origin, Haiti is unfortunately one of the most impoverished and unstable countries in the hemisphere and as a result, electricity is a rare commodity. The High School Library Renovation project consists of bettering the library's infrastructure, purchasing more literary and academic books, and rechargeable lamps that students will be able to borrow to study (and read) at home whenever they face frequent power shortages/blackouts. By providing students with those resources and tools, I hope that my project will maximize their academic performance both in school and in the French baccalaureate. I also hope to incentivize them to read and educate themselves more through that project as more books and academic resources will be provided. Literature broadened my horizons, sharpened my critical thinking and most importantly allowed me to travel in space and time when I was still living in Haiti. I want to share that passion with the generations to come as I firmly believe that they will also benefit from it through the realization of that project.
Subject Category
Interdisciplinary and Other Categories: Other
Faculty Sponsor Department
Library
Faculty Sponsor
Brandon West
Funding Sources
Student Ambassador Award

2C: FROM TOURIST TO SCHOLAR IN TUSCANY

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 103
Session Chair
Weston Kennison, English

288 • The Lifeblood of Culture: The Difference in the Arts Between Siena and Upstate New York

Xavier Canaple
Abstract
Living in such an interconnected world, often the main distinctions in looking at differing countries is found in the cultures themselves, how each place responds to the same experiences. As such, it stands that perhaps the one thing that every civilization shares is art. Art is the one thing that every civilization is guaranteed to have had throughout all of history, as long as we've seen colored pigments or had rocks and sticks to bang together, we have had painting and music. But as civilizations become countries, more in depth and governed, there comes a time where it is necessary to choose what is important, and what isn't. How does the most basic form of communication -- artistic expression -- change and substantiate the relationships between two places as fundamentally different, yet similar as Geneseo and Siena? That is what I hope to explore.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department

English
Faculty Sponsor
Weston Kennison
Funding Sources
None

276 • Onda's Perspective on the Friendship with Geneseo

Caelum Edris
Abstract
To have a longstanding relationship, there must be mutual benefit. We clearly benefit from our Geneseo/Onda connection through experience, programs, education, and more, but what do the Sienese gain from this? By examining their perspective, I believe we can learn more about both our relationship and ourselves through applying their viewpoint to our culture and norms.
Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Faculty Sponsor Department
Edgar Fellows
Faculty Sponsor
Weston Kennison
Funding Sources
None

287 • The Meaning of a Baptism

Megan Pecenco
Abstract
The seventeen contrade of Siena are a significant symbol of Siena's identity. Each contrada is more than just a neighborhood. It is a family and part of each person's character. In such a unique relationship, we wonder how one becomes a part of this. How we see someone becoming a contradiolo today through the process of a civil baptism is different from how it originated, but it still holds the same meaning and importance. By understanding the baptism into a contrada we can further understand what it means to become a member and consequently the duties and roles you must fulfill. As Geneseo and Onda have continued to develop their relationship, what does it mean for an American or non-Sienese to be baptized into the contrada? By understanding how this initiation has evolved I hope to learn how this has strengthened the relationship between Geneseo and Onda and strengthened an individual's relationship with the contrada.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English
Faculty Sponsor
Weston Kennison
Funding Sources
None

354 • Community Relationships in Siena

Mary Feck
Abstract

Specific dynamics exist between members of each contrada that are unique to Siena. For example, how the old and young interact, or how neighbors and friends come together to raise children. The friendships in the contrade are unlike other connections. The Sienese have redefined friendship. Being part of one of these communities provides a unifying force to everyone within. I would like to learn more about the relationships both within and between the contrade because I believe that Americans could learn from them and further enrich their own relationships.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Edgar Fellows

Faculty Sponsor

Weston Kennison

Funding Sources

None

301 • Italian Influence on Governing

Olympia Frisoni

Abstract

The relationship between Italy and the United States dates back to the founding of our country. The United States system of three branches of government is heavily influenced by Florence and Siena. I hope to unearth the connections to Italy that were formed when our founding fathers wrote our constitution. While investigating the relationships of the past, I will explore the type of governmental system in Siena today. The city government handles certain duties of governing but many of the responsibilities land with each contrade separate from the government. By learning about this unique style of government and what values lie underneath, I hope to learn about different ways one can be politically active in our time.

Subject Category

Social Science Categories: Political Science

Special Topic Information

Faculty Sponsor Department

English

Faculty Sponsor

Weston Kennison

Funding Sources

None

308 • Contrada Museums as Centers of Memory and Community Narrative

Nina Avallone-Serra

Abstract

A city with such a strong sense of historical memory, Siena is defined by its seventeen different contrade and their unique expressions of community and competition. Contrade take on identities of their own, physically capturing this powerful sense of community pride in contrada museums. As we explore the Geneseo-Onda relationship, my area of focus will be centered around the Onda museum: how do they organize their collections? What do they feel is most emblematic of their character as a contrada? What is the overarching narrative of Onda as expressed through their museum? My research will also seek to determine the primary audience of these museums and how portrayals of historical events may differ between rival contrade.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

English Dept

Faculty Sponsor

Weston Kennison

Funding Sources

None

311 • A Rite of Passage: When Do We Cease Being Tourists?

Anamaria Santos Mendez

Abstract

This study explores the complex relationship between tourism and the contradas of Siena, Italy. These neighborhoods are renowned for their rich cultural heritage centered around the Palio horse race. By exploring how the contradas perceive and engage with foreign visitors, the study aims to offer insights into the impact of the thriving tourist industry and lifelong relationships developed by some tourists on these communities and broader Siena. When does one cease to be a 'tourist' and become a genuine member of a contrada? What does this transformation mean for both communities, Geneseo and the Onda contrada? The research focuses on three key areas.

Firstly, it examines the extent to which contrade welcome and share their traditions with foreign visitors, drawing parallels between historical and contemporary perceptions towards tourists. Specifically, it investigates the relationship between a college study abroad program and the Onda contrada, exploring how this engagement shapes cultural exchange and perceptions. Second, the study assesses the positive and negative effects of the tourist industry on the contrade and the broader Siena community, including potential challenges related to gentrification. Lastly, the research delves into migration patterns and analyzes factors influencing migration from contrade or Siena and motivations for staying there despite economic challenges. Overall, this study seeks to unravel the complex interplay between tourism and tradition and offer insights to ensure the preservation and prosperity of Siena's contrade amidst global currents.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Honors

Faculty Sponsor

Weston Kennison

Funding Sources

None

265 • Cultural Expectations through the Lens of Horse Racing

Hailey Brent

Abstract

A common misconception about the Palio di Siena is that it’s just one big horse race. Like the ones we have in America, where the expectation is to place bets on what horse you think will win. But the horse race in Palio couldn’t be more different. How can we break down the walls of Americans comfortably set expectations? Through utilizing these expectations as a guide to build off of, dismantle, and then educate on the Palio horse race. There is a lot to gain from understanding cultures we are unfamiliar with, and the Palio di Siena is a wonderful place to start breaking down, and expanding these expectations.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

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

Faculty Sponsor Department

English

Faculty Sponsor

Weston Kennison

Funding Sources

None

347 • Defining Cross-Cultural Friendships

Ariel Guttman

Abstract

The contrade of Siena have a unique perspective on community and friendship. Belonging to a contrada is more than just being a citizen of a town. It is more like entering one large, extended family. Throughout the past 46 years, members of the Geneseo community have become integrated into the Onda contrada, exploring what it means to have a cross-cultural friendship. How is it that Americans participating in study abroad programs in Siena have become welcomed into such a tight knit community? Through interviewing Onda members on what distinguishes friendship in a contrada from other relationships, as well as Geneseo participants on the personal impacts of these trips and connections, I hope to discover what led to this lasting relationship between Geneseo-Onda.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

Faculty Sponsor Department

English

Faculty Sponsor

Weston Kennison

Funding Sources

None

343 • The Financial Impact in Siena of the Onda/Geneseo Relationship

Rinna Shingaki

Abstract

The financial influence is an important fact in the relationship between two different countries. If the economic statistics don't work well for both sides, the relationship between two different countries can easily become one-sided or start fading away. As visitors to Siena, what financial impact have we left on the city? By developing a model for calculating financial impact on the city of Siena with the data on the number of Americans who have traveled the path to Onda, I believe we can learn more about how Onda and Geneseo have evolved such a strong relationship over 46 years.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

HONR 202

Faculty Sponsor

Weston Kennison

Funding Sources

None

218 • Conflict and Resolution on a Microcosmic and Macrocosmic Scale

Alexis Flint

Abstract

The comune of Siena, Italy boasts a rich and dynamic history. Culturally marked by the vibrant event of the Palio, Siena hosts this interesting drama of conflict and resolution bi-annually during a competition between distinct communities known as contrade. These communities, bonded by way of history, art, competition, rivalry, and unity host the Palio, which features each of these aspects in real time. This deep connection has parallels elsewhere, as the macrocosmic themes of conflict and resolution that play out through the Palio are also highlighted in the microcosmic individual

dynamics between citizens and diplomatic relationships. By exploring the Geneseo-Onda relationship, I hope to discover the balance that allows their society to function in a more harmonious way.

Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Humanities
Faculty Sponsor
Weston Kennison
Funding Sources
None

2D: SOCIOLOGY OF LOVE AND EMOTIONAL ENERGY

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 104
Session Chair
Steve Derne, Sociology

104 • Emotional Energy: Imaginary Interactions through Reading

Kayleigh Kenney

Abstract
Randall Collins states that emotional energy can be heightened by face-to-face interactions between a group of people who are focusing on a common object or value. This study was performed in order to determine whether emotional energy can be increased by creating imaginary interactions in one's head when individually participating in reading. When using sociological introspection, this study concluded that individual experience can induce positive emotional energy by creating instances of make-believe interactions.

Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne
Funding Sources
None

177 • Social Structures: Affects Emotion More Than We Know

Thomas Bradley

Abstract
According to Steve Derne, there is a connection between the arrangement of social systems and the prevailing emotional atmosphere. Social institutions can influence the development of either a positive or harmful emotional culture. This study aimed to investigate the impact of social structures within families on the emotional culture of the family, particularly the emotional culture of children. By engaging in sociological introspection, it was discovered that the social structures of the family in which parents were raised might have an impact on the emotional culture of the family they form.

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

Funding Sources
None

147 • Peace and Love in Gandhian Communities: Exploring the Emotional Energy

Shauna Blochwitz

Abstract
Utilizing the work of Randall Collins, this essay explores the idea that charismatic leadership supports group cohesion and love for other group members, the group's message, and the group leader. This work studies accounts surrounding Gandhi's followers, referred to hereafter as Gandhians, to explore the validity of this assertion. By researching using documentary evidence, this research utilizes publicly published data to examine how love is demonstrated as a result of group leadership and how this love affects group members. The study finds that these accounts hold that love is present among followers for each other, the group leader, the group's goal, and even the organization's opponents. By studying love energy, sociologists can find ways to propagate love energy, understand the phenomenon, and understand organizations that will not support love energy in their followers but instead support hateful action among followers, particularly against the organization's enemies.

Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne
Funding Sources
None

55 • Friends: More Self-Development with Different Types of Friendships

Julia Wallace

Abstract
Francesca M. Cancian states that love relationships, such as friendships, contribute to self-development. This study was conducted in order to determine how different types of friendships, such as same-sex and opposite-sex friendships, contribute to self-development. Through sociological introspection, it was found that being involved in both same-sex and opposite-sex friendships leads to a more fully developed self.

Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
Sociology
Faculty Sponsor
Steve Derne
Funding Sources
None

2E: WOMEN'S AND GENDER STUDIES CAPSTONE PANEL 2

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 105

Session Chair

Alice Rutkowski, English

180 • The Ethics of Care, Traced Through Three Lives

Emma Seppeler

Abstract

What are the social landscapes that shape us? What does it mean to remember? If so much of our lives have been shaped by the influence of others, is it truly possible to locate ourselves as individuals? These are the questions that I find myself coming back to time and time again as I reflect on the parallels, connections, and tensions between my life, my mom's life, and my grandma's life. Using the framework of care-focused feminism in combination with anthropological research methods, I examine the cultural constructions and expectations of care present in my own family and experiences as I attempt to tackle the most challenging question of all: what does it mean to care and be cared for?

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Philosophy and Women's and Gender Studies

Faculty Sponsor

Bruno Renero-Hannan

Funding Sources

None

303 • Fostering Belonging within Educational Institutions

Megan Mueller

Abstract

My presentation will report on my internship by highlighting how the opportunities I have had with the Safe Zone program incorporate my two main passions: education and women's and gender studies. The first assignment I had in my internship, was collaborating with the career design center, where I helped make the website more inclusive of LGBTQ+ identities, and assured that potential students could feel comfortable knowing that Geneseo is an inclusive campus that prioritizes individual identities. Following a similar intention, I critically examined how the Safe Zone program may be made more accessible for students and adults with disabilities, using my knowledge as a special education major. This exercise encouraged me to research sexual education on a national scale in terms of how it includes, or more often excludes, people with disabilities. Another large assignment I had was crafting a condensed workshop for adolescent English teachers. Because the traditional Safe Zone workshop is targeted at Geneseo students and faculty and staff, I recognized that although LGBTQ+ education is essential for professionals regardless of their career path, each field needs an individualized approach to address the specific needs they have. The universality of the Safe Zone program is supported by the fact that virtually all professions include interpersonal relationships. Considering this, colleagues must remain culturally conscious to foster a safe and accepting work environment.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Philosophy and Women's and Gender Studies

Faculty Sponsor

Alice Rutkowski

Funding Sources

None

331 • The Disproportionate Impacts of the School-to-Prison Pipeline

Heather Ashton

Abstract

The School-to-Prison Pipeline is a pathway to repeated encounters with the criminal justice system that is encouraged by state and federal education policy. For many students encounters with harsh school disciplinary policies and procedures begin as early as preschool. This presentation will discuss the risk factors that contribute to the disproportionate affects of the School-to-Prison Pipeline on LGBTQ+, BIPOC, and student's with disabilities.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Philosophy and Women's and Gender Studies

Faculty Sponsor

Amanda Roth

Funding Sources

None

2F: EDGAR FELLOWS CAPSTONES PANEL 3

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 201

Session Chair

Lee Pierce, Communication

123 • The Internet and Biosociality in Disabled Communities

Grace Pearse

Abstract

The digital age presents a wealth of opportunity for disabled individuals to participate in society in ways that they have historically been unable to. Despite the abundance of possibilities in this area, research on the interactions between disabled individuals and modern resources such as the internet has been limited since the advent of advanced communication technologies. The vast majority of academic work on the matter concern the ways in which the internet and similar devices can be made more accessible to those with disabilities and how the communicative spaces such as chat rooms, social media groups, and similar web-based resources can be used to promote visibility and real-world advocacy for disabled groups. While these inquiries are productive, the vast majority of these advocacy efforts are biomedically oriented, often concerning efforts to find cures for the respective conditions. There is a large gap in the literature concerning how disabled individuals use online resources to form purely social groups that use the aspect of a shared disability status as a unifying factor, but are not oriented around cure seeking or research lobbying. This project aims to address this gap by drawing from Paul Rabinow's anthropological concept of biosociality, in order to demonstrate how individuals with motor disabilities use online forums for community building purposes. The research conducted in this project demonstrates that online disabled communities are not solely opportunities to share diagnoses, but also to forge interpersonal connections and foster understanding and empowerment, making these spaces akin to families to their participants.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Bruno Renero-Hannan

Funding Sources

None

274 • Water, Women, and the Notion of Sacrifice

Diana Morley

Abstract

This capstone interrogates the ways that women are pushed into positions that demand various forms of sacrifice as is illuminated by works that set those conditions within the context of climate disasters. The paper traces the development of fictional literary works from the end of the nineteenth century to now, such as Kate Chopin's The Awakening, Zora Neale Hurston's Their Eyes Were Watching God, and Jesmyn Ward's Salvage the Bones, as well as critical works examining each novel, centering relationships between feminist frameworks and climate activism. Elizabeth Rush's non-fiction work The Quickening: Creation and Community at the Ends of the Earth and the long-form lyric poetry of Claudia Rankine's Citizen: An American Lyric add further experiences of motherhood, perspectives on bringing a child into a dying world, and the impact of the disasters that epitomize the need for action against climate change. The project's examination of the social expectations that mothers endure personal sacrifice, as illustrated in a variety of stories, both fiction and non-fiction, shifts when placed against the backdrop of the holistic threat of climate crisis. This reveals how the expectation of sacrifice, in varying forms, contributes to the systemic failures within the realms of infrastructural preparation and post-disaster recovery, as well as the ever-looming patriarchal structure of our society, and demand to be placed under a microscope both as their own distinct, separate issues, but more importantly, in the ways that they intersect.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

English

Faculty Sponsor

Caroline Woidat

Funding Sources

None

320 • Synthesis and Evaluation of Ruthenium-Arene Complexes to Modulate the Aggregation of the Amyloid-β Peptide

Daniela Grimard

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 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 Aβ and HSA was determined using isothermal titration calorimetry and fluorescence binding assays. The results of these experiments will be discussed, where structure-activity relationships will be established.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

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

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Michael Webb

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

205 • "Dead, White Men": Discourse, Values, and Canon Formation in Western Music

Jack O'Loughlin

Abstract
The world of classical music is currently undergoing a self-evaluation. In a historical moment defined by issues of power and representation, academics, performers, and conductors have all been reaching beyond the standard music repertory to program works by underrepresented groups of composers, including works by people of color, women, and living composers, resulting in a dramatic expansion of the classical music canon. In this project, I consider the mutual reinforcement between several different canons in Western classical music and contemporary socio-political discourses surrounding music. I examine not only the creation of repertorial, pedagogical, and disciplinary canons, but also how and why they are created and negotiated by students, critics, and the general public. Ultimately, my goal for this project is to examine the effects and consequences of contemporary values as they relate to canon formation and redefinition.

Subject Category
Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department
Music and Musical Theatre

Faculty Sponsor
Michael Masci

Funding Sources
None

2G: EDGAR FELLOWS CAPSTONES PANEL 4

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 202

Session Chair
David Levy, Philosophy

154 • Differential Gene Expression in Clobetasol-Induced Quiescent Vulvar Cancer Cells

Gianna Minnuto

Abstract
Quiescence, the temporary exit from the cell cycle, presents therapeutic challenges to cancer management since it allows evasion of chemotherapy and radiation treatments. Essential to the study of quiescence in carcinogenesis is an established model system. Our studies have found that clobetasol treatment of the vulvar cancer cell line, UMSCV-4, causes these cells to enter a state of dormancy. Subsequent removal of the cells from clobetasol show a return to normal cell proliferation, even after dormancy for 3 months and these cells no longer enter quiescence with subsequent clobetasol treatment (UMSCV-4LT). Previous studies in our lab using RT-PCR suggest that a key marker for quiescence, p27Kip1 , is upregulated in the UMSCV-4 cells upon initial treatment with clobetasol. Furthermore, the decrease in cell viability is not due to an increase in cell death during this period. This establishes the UMSCV-4 cells as a good model system for the study of clobetasol induced quiescence in vulvar squamous epithelial cells. Here, we investigate differential gene expression between UMSCV-4NT and UMSCV-4LT cell populations through RNA sequencing using the MinION nanopore. The importance of this work is underscored by the observation that clobetasol is often used to treat a common inflammatory disease of the vulva known as vulvar lichen sclerosus (VLS) and, it is estimated that up to 65% of vulvar carcinomas arise in the background of VLS.

Subject Category
Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Biology

Faculty Sponsor

Jani Lewis

Funding Sources

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

277 • Characterization of FSD-1 DNA Binding Domain Mutants in Neurospora Crassa

Jessica Dawson

Abstract

Neurospora crassa is a filamentous fungus that can reproduce sexually or asexually and is used as a model organism for fungal reproduction. Deletion of the fsd-1 gene encoding the protein FSD-1 results in female sterility during sexual reproduction. FSD-1 is a predicted transcription factor as the fsd-1 gene encodes a predicted DNA binding domain (DNABD) sequence conserved among fungi, which may bind chromosomal DNA to activate genes responsible for female development. This project investigates the effect of FSD-1 DNA binding domain mutations on sexual development. Strains with the DNABD deleted show female sterility, similar to the fsd-1 deletion strains. Microscopy shows that FSD-1 also does not localize to the nucleus when the DNABD is deleted, likely because the nuclear localization sequence (NLS) is within the DNABD. To more effectively isolate the impacts of nuclear localization and DNA binding in the functional mechanism of FSD-1, a strain containing a point mutation in the DNA binding domain was developed using overlap PCR. This point mutation is at a conserved amino acid functionally important in related species. The point mutant strain was crossed to a wild-type strain to determine whether FSD-1 DNA binding is essential for N. crassa female sexual development. Further research can be done to determine how the expression of potential FSD-1 target genes varies between mutant and wild-type strains. FSD-1 target genes are likely responsible for key aspects of female sexual development in N. crassa, and their identification could provide targets for future fungal sexual reproduction research as well as fungal disease treatments.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Elizabeth Hutchison

Funding Sources

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

49 • *Two Sides of the Same Coin?*: LGBTQ+ Rights in the United States & Russia

Nicole Kemmett

Abstract

In the past few years, LGBTQ+ rights have regressed in both the United States and Russia to the point that it is being called into question whether or not Russia truly has a different stance on LGBTQ+ rights than the US. In this project, I assess LGBTQ+ rights in the United States and Russia by analyzing various headlines, official government statements, war propaganda, and first-hand accounts of citizens who identify as LGBTQ+ from both countries. Through this analysis, I seek to understand how different or similar the treatment of LGBTQ+ individuals truly is in each country. This project has implications for identifying whether or not Russia's ideological 'war on the West' and pride parades is grounded in reality as well as if the idea of 'the West' that the United States embodies is being erased from existence with recent anti-LGBTQ+ legislation. In order to draw conclusions, I will draw upon various primary and secondary sources regarding LGBTQ+ life in Russia, as well as rely on elements of my original dataset and research on pro and anti-LGBTQ+ legislation across the 50 US state legislatures from 2018 to 2021.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department
Political Science and International Relations
Faculty Sponsor
Hanna Brant
This presentation will also be presented at:
Southern Political Science Association Annual Conference & the Russian, East European, and Eurasian Studies Northeast Network Conference
Funding Sources
None

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

Veronica Szygalowicz
Abstract
Regeneration occurs as a biological response to tissue damage or loss and results in the restoration of cell structure and function, but the ability to do so is not present in all organisms or tissues. Cellular signals are required to activate specific regeneration pathways, and many such pathways are kept inactive to prevent unnecessary cell growth and division that may otherwise be detrimental. The Hippo (Hpo) pathway is one such regeneration signaling pathway, inhibiting cell growth, proliferation, and apoptosis to ultimately control organ size. Cellular contact inactivates members of this pathway, but when cells are damaged or removed, a signaling cascade is derepressed to upregulate the transcription of genes involved in cellular growth. This experiment looked at the levels of a specific protein called Yes-associated protein (YAP), along with its phosphorylated state pYAP, throughout the retinal regeneration process to expand on previous studies of the Hpo pathway. The retinas of zebrafish were used for experimentation because Müller glia are stimulated in damaged retinas to produce regenerative retinal progenitors which differentiate into lost cells such as photoreceptors. The phosphorylation of YAP has been indicated as a downstream effect of the activated Hpo pathway, and pYAP is responsible for activating gene expression of cell cycle stimulators. Immunolabeling was used to visualize protein levels at different time points after bright light exposure, which damaged the retinas, and it is expected that pYAP levels will first decrease to allow for regeneration and then increase throughout the regeneration process.
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)

2H: EDGAR FELLOWS CAPSTONES PANEL 5

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 203
Session Chair
Wendy Pogozelski, Chemistry

122 • Alternative Energy Sources: Bioethanol Extraction from Rice Husks and Quantification Using Dinitrosalicylic Acid

Gage Smith
Abstract
The Earth has endured years of damage caused by an overuse of fossil fuels. Companies are now combating the damage with alternative energy. Biofuels represent an economical and often overlooked alternative to fossil fuels. Although first

generation biofuels aid in curbing greenhouse gas emissions, they lead to increasing food prices which negatively impacts developing countries. This research focuses on the production and utilization of second-generation biofuels which rely on non-human food biomass, which are much more biologically appealing than first generation biofuels. This project specifically focuses on the use of one of the most abundant and readily available biomasses, rice husks as a biofuel feedstock. Rice husks are ideal as a biofuel feedstock because they're cheap if not free, and they have the power to curb greenhouse gas emissions. One of the greatest challenges in conversion of feedstock into biofuel is how to break the biomass down, a process termed pretreatment. For this project, a unique class of solvents, ionic liquids are employed in the pretreatment process. An ionic liquid (1-Butyl-3-methylimidazolium chloride) was used for the pretreatment of the rice husks to yield glucose. The amount of glucose obtained is then quantified. From this, it is then possible to determine how efficient rice husks are as second-generation biofuel. The amount of glucose is then ultimately used to determine the efficiency of rice-husks as a biofuel. We have seen samples retain upwards of 60% weight by volume glucose. Alcohol fermentation then is used to produce ethanol from the glucose slurry.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Barnabas Gikonyo

Funding Sources

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

262 • The Impact of DNA Methyltransferase on Bacterial Growth in *Escherichia coli*

Jessica LoPresti

Abstract

In Escherichia coli, DNA cytosine methyltransferase (Dcm) catalyzes the process of DNA methylation, a process that plays a large role in the regulation of gene expression in cells. The specific consequences of this methylation are largely unknown. We have been studying DNA methylation in E. coli by using different measures of growth under two different types of stressor. First, we demonstrate that Dcm does not impact bacterial growth of E. coli under high or low extreme temperature stressor conditions. Second, due to the fact that differential sensitivity to the DNA-binding compound ethidium bromide has been previously observed in the wild-type E. coli and the dcm knockout strains before, in addition to the sugE knockout strain, (Militello et al., 2014), we tested three different DNA binding compounds to see what effect they have on the growth of the three strains to study the Dcm protein. We identified two DNA-binding compounds significantly impacting growth in dcm knockout cells.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

Funding Sources

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

78 • Evaluating Ion Channel Function of Anoctamin3

Nicole Stango, Amanda DiMatteo, Tara Sweet

Abstract

Muscle movements are regulated through motor control, a process that relies on the interplay of sensory input, neural pathways, and muscular responses to achieve coordinated motions. Appropriate motor function is important for everyday activities. However, neurological movement disorders known as dystonias are characterized by involuntary and prolonged muscle contractions. Cervical Dystonia (CD) is characterized by involuntary contractions in the neck muscles that can cause abnormal postures and pain. Mutations in Anoctamin-3 (Ano3) have been linked to individuals with CD. Ano3 constitutes a family of 45 transmembrane proteins known as TMEM16 proteins. TMEM16 proteins are integral proteins that span the cell membrane and anoctamins tend to function as ion channels, lipid flipping scramblases, or both. We hypothesize that Ano3 is an ion channel. To test this hypothesis we are cloning Ano3 and developed a flux assay to evaluate if this protein passes ions.

Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Faculty Sponsor Department
Biology and Psychology
Faculty Sponsor
Tara Sweet
This presentation will also be presented at:
Central NY Fish Meeting
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award

2I: NARRATIVES OF SELF-REPRESENTATION AS EXPOSURE AND CELEBRATION OF BLACK/AFRICAN RESILIENCE, STRENGTH, AND ART

11:30am-12:45pm, Wednesday, 24 April 2024, Bailey 204
Session Chair
Griffin Lyons

64 • Contraceptive Testing, Sterilization, and Puerto Rican Women: Unveiling the Impact, Spirituality, and Contemporary Perspectives

Madison Centeno
Abstract
This research delves into the historical and contemporary implications of contraceptive testing on Puerto Rican women, specifically the birth control pill. Focusing on the complex interplay of factors such as religion, spirituality, and intergenerational experiences, this study explores how the experiences of Puerto Rican women during the 20th century continue to shape the reproductive decisions of young Puerto Rican women today. By examining the limited documentation of unethical contraceptive research and the legacy of mass sterilization, this research aims to challenge prevailing narratives of reproductive choice and offer a more nuanced understanding of family planning in Puerto Rican communities. Utilizing an intersection of Africana Studies and Sociological Research methods, I plan on conducting interviews to investigate my thesis.

Subject Category
Social Science Categories: Sociology
Special Topic Information
Faculty Sponsor Department
English, Black Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
This presentation will also be presented at:
National Council for Black Studies, National Conference for Undergraduate Research

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

106 • The Implications of Incarceration on Black Women and Families

Abigail George

Abstract
Statistics reveal that Black men are disproportionately incarcerated, facing harsher penalties, longer sentences, and placement in strict prison environments compared to other racial groups. This heightened criminalization actively undermines Black families and communities. When Black men are incarcerated, the conventional ideal of having them contribute to family support is disrupted, often necessitating Black women to assume this role. Despite unfair criticism, Black women in this context face added responsibility, draining their energy as they strive to uphold family integrity. Recognizing the challenges faced by Black families and women when a loved one is incarcerated underscores the broader impact of the prison system. In cases like the Exonerated 5, Black mothers endeavor to shield their sons from further harm. For instance, Yusef Salaam's mother, visiting him in Juvie, advises him to associate with fellow detainees of the same religion for comfort and security. This paper will explore primary and secondary sources, examining the struggles of Black women and families when a family member is incarcerated. It will also spotlight the resilience of Black women as they navigate a system aimed at dismantling Black lives.

Subject Category
Social Science Categories: Sociology

Faculty Sponsor Department
English, Black Studies

Faculty Sponsor
Olaocha Nwadiuto Nwabara

This presentation will also be presented at:
The National Conference of Black Studies in San Jose, California, March 6th - 9th

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

58 • What the Movies Can Mean: The Representation of Black and African Women in Film

Lauren McCormick

Abstract
Proper representation is an essential form of empowerment for anyone whereas misrepresentation can create dangerous rhetorics that can influence societies in negative ways. This paper is going to take a look at representation of Black and African women in film as a means for understanding what people have done to both help and harm the representation of Black and African women in society. We will start with an analysis of the documentary Ethnic Notions and a review of the scholarly sources to provide a framework for understanding these films. We will then examine more maligned pieces of film like, The Help and Sex and the City we gain a knowledge of some of the categories Black and African women have been sorted into, the Guide, The Angry Black Woman and the Strong Black Woman. Later we will take a look at films such as, Nope, The Woman King, The Sandman and interviews from the cast and directors to better understand what institutions and specific directors and actors can continue to do to better and more accurately represent Black and African women.

Subject Category
Interdisciplinary and Other Categories: Black Studies

Faculty Sponsor Department
English , Black Studies

Faculty Sponsor
Olaocha Nwadiuto Nwabara

This presentation will also be presented at:
The National Council for Black Studies Conference
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

74 • Mothering in the Patriarchy: Defining and Constructing Motherhood for African Descendant Women

Griffin Lyons

Abstract
African descendant women have continuously been subjected to patriarchal definitions and standards placed upon motherhood and womanhood, which serve to perpetuate their subjection and suppression in the societies that they exist in. Centering the lived experiences of African descendant women through literature, such as Doreen Baingana's Tropical Fish and Toni Morrison's Sula, allows for the dismantling of these strict and harmful definitions. These novels, as well as others, are written by and for African descendant mothers and daughters and expose their realities and exemplify how they have continuously fought in innovative ways to overcome the oppression they face for existing in spaces where they are not valued as individuals. These works of literature are examples of women's self-expression and showcase how patriarchal standards affect how they are perceived in society and, conversely, how they view themselves as individual women and mothers. They also approach motherhood and womanhood as an experience, rather than an institution, and bring about themes of coming into one's sexuality and the common inability to communicate with one's mother. Through literary analysis, this paper uses Patricia Hill Collins' concept of controlling images to examine how African descendant women's search for agency and self-representation is reflected in select novels by African descendant women, which allows them to develop new definitions of their own experiences as women living in male-dominated and colonized societies.

Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English, Black Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
This presentation will also be presented at:
National Council for Black Studies and National Conference on Undergraduate Research
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

98 • "You've Got to Be Modernistic": A Metronome of Afro-Futurism

Genesis Flores

Abstract
Music has quite literally been a lifeline for the Black community for as far back as history can trace. Jazz specifically carries over traditions and adjusts the style to better fit the time period and what the overall tone of the time period is. Billy Taylor, a jazz pianist coined the phrase "Jazz is America's Classical Music". Jazz accurately depicts the struggle and hope of the Black community which further depicts the true heart and soul of America, as the Black community is the heart and soul of America. The idea that the African diaspora can pull from their roots, traditions, and culture to improve their everyday lives is one that inspires hope and a sense of freedom. By following and understanding how Jazz styles have progressed yet maintained the basic Jazz structure, it parallels and provides a perfect example of Afro-futurism. Furthermore, it models how prevalent and crucial the implementation of traditions and the past is to progression. This paper will use jazz music, scholarly texts, and videos to examine what facets of life Afro-futurism permeates into and how people are able to create tangible and realistic plans to better their livelihoods. I aim to figure out how Afro-futurism fits into the present and how the path to the future that is created for and by the African diaspora can continue

to be paved, in order to further benefit their community but also continue their lasting impact on other communities and America as a whole.

Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English and Black Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
This presentation will also be presented at:
National Council for Black Studies
Funding Sources
McNair Scholars Program Support

2J: FUGITIVES, FREE LABOR, AND FORTIFICATIONS: RETHINKING THE CIVIL WAR ERA

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 115
Session Chair
Justin Behrend, History

18 • Union Victory during the Battle of Malvern Hill: A Showcase in Military Potential

Patrick Traver
Abstract
This paper focuses on the reasons for Union victory during the Battle of Malvern Hill, as well as the implications of this victory for the Civil War as a whole. It examines the Union's display of leadership, preparedness, and industrial capability within the context of the battle to show reasons for Union victory, as compared to the six battles preceding it. This paper uses newspaper articles from the reports on Malvern Hill, letters from both Confederate and Union commanders, a map drawn by a Confederate lieutenant, articles on artillery, and books on the Peninsula Campaign as the main sources. Based on my research, I argue that the Union exhibited the characteristics during the Battle of Malvern Hill that would eventually lead them to consistent and long-term success during the Civil War.
Subject Category
Arts and Humanities Categories: History
Faculty Sponsor Department
History
Faculty Sponsor
Justin Behrend
This presentation will also be presented at:
Western/Central New York Phi Alpha Theta Regional Conference
Funding Sources
None

99 • Fugitive Slaves and Freedom: A Reexamination of the Connection Between Fugitive Slaves and Abolition

Michael Bogart
Abstract
This paper focuses on the connection between fugitive slaves and the abolition of chattel slavery in the United States. It analyzes the various ways in which fugitive slaves not only changed the tides of the American Civil War, but also how their actions and undying determination to become free contributed to the fight for abolition. The main sources of this

piece are the firsthand accounts of fugitive slaves themselves, as well as other primary sources which demonstrate the impact these people had on both the war and abolition. It draws the conclusion that there is a direct link between fugitive slaves and abolition, while arguing that had it not been for these fugitive slaves, the abolition of slavery and further emancipation of African Americans would have played out far differently.

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

Funding Sources

None

160 • The Barrow Plantation: An Outlier in the Transition from Enslaved to Free Labor

Jakob Smith

Abstract

After being emancipated, why would a slave want to continue to work for their former master? This paper delves into this question by focusing on the plantation of David C. Barrow in central Georgia, a rare plantation where cordial relations were held between freedpeople and their former master. It touches on hostile relations between the two groups in surrounding counties and across the South to show how Barrow's plantation stood out from the rest. Research consisting almost entirely of primary sources including newspapers and letters displays how a cordial relationship was established during slavery and continued throughout the adoption of tenant farming up to the year 1881. The research is limited as no accounts of blacks on the plantation were found, but by analyzing the sources published by white reporters and David Barrow's son it recognizes the agency of black people in facilitating this relationship. While not praising Barrow, the paper recognizes that his willingness to participate in this relationship differentiated him from most former masters. The paper concludes that due to this relationship, the Barrow plantation stood out from the rest of the South amidst the detrimental labor struggle because workers wanted to remain on the plantation and work at a productive rate. It strives to glorify how building this cordial relationship during slavery made a smooth transition to free labor possible.

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 Conference

Funding Sources

None

2K: ECONOMICS MATTERS

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 117

Session Chair

Léonie Stone, School of Business

50 • Has the Return to English Proficiency Decreased for Immigrants?

Jack Katz

Abstract

New immigrants need to be successfully economically and socially integrated if they are to bring positive economic effects. One important piece of integration into a new society is language proficiency. As the U.S. economy increasingly relies on immigrant labor, it will become even more important to understand the returns to speaking English as an immigrant as well as and the determinants of English proficiency among immigrants. I focus specifically on the return to learning English as a Spanish speaker. As the U.S. becomes a more Spanish-speaker accessible country, as more government and other agencies are offering forms in Spanish, as well as broader use of Spanish and Spanish media in American culture, the incentive to learn English may be decreasing for Spanish immigrants. This paper hypothesizes that the return to learning English has decreased over the years, both because the United States has become a more Spanish-friendly country and because the number of Spanish speakers has increased in the country over time. I analyze data from the American Community Survey (ACS) from 1980-2019. I first consider the determinants of English proficiency. I then use an instrumental variables approach to consider the effect of English proficiency on income, the return to proficiency. While I find no significant change in returns to English proficiency from decade to decade, there is a significant decrease between the 1980 sample and the 2019 sample. The results also show a significant reduction in the income gap between female and male Hispanic immigrants.

Subject Category

School of Business Categories: Economics

Faculty Sponsor Department

School of Business

Faculty Sponsor

Léonie Stone

This presentation will also be presented at:

Eastern Economic Association, Issues in Political Economy Undergraduate Sessions

Funding Sources

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

204 • Predicting a Soccer Player's Transfer Value Using Linear Regression

Zachary Miller

Abstract

Often trades and player transactions are the main topic of conversation in the world of sports with fans pushing for their teams to pursue the best individuals available. In most sports, the concept of free agency is most prevalent with teams usually signing star players by approaching them at the end of their contracts. Soccer, however, does not follow this convention but instead revolves around a transfer based system in which teams directly approach their opponents with large fees in attempts to purchase the exclusive contractual rights of the player. The importance behind this is that in recent years, this system has turned soccer into less of a sport and more of a business as teams who are able to capitalize on the transfer market by conducting profitable transfers prove to be the most successful in the long term. Thus, for my project I am going to employ the tactic of linear regression in attempts to predict a player’s transfer fee by demonstrating the relationship between transfer value and various attributes such as age, stats and position.

Subject Category

School of Business Categories: Economics

Faculty Sponsor Department

School of Business - Economics

Faculty Sponsor

Mansokku Lee

Funding Sources

None

221 • Unlocking the Transfer Market: A Comparative Econometric Analysis of Player Performance and Market Value in the Top 3 European Soccer Leagues

Aman Manghi

Abstract

In recent times, the European soccer transfer windows (specific periods during which teams are allowed to buy and sell players), spanning from June to August ahead of the season, and a supplementary winter window operating from January to February, have attracted substantial attention and media coverage. The world of soccer is seeing huge amounts of transfer spending by clubs to attract the best talent and strengthen their squads. But such lavish spending raises an important question- “How is the market value of a player truly or intrinsically determined?” In other words what performance factors can best explain the market value of a player?

The goal of this research topic is to find the right performance indicators that can help explain the market value of soccer players in the top 3 European leagues and whether the market values of players vary across leagues. However, since different positions in soccer have different responsibilities and performance indicators, it is important to separate the sample of selected players into Forwards, Midfielders, Defenders, and Goalkeepers with different independent variables.

The chosen research topic can be considered interesting as it offers soccer teams with a valuable tool for accurately forecasting the market value of players they seek to acquire or offload. Moreover, an econometric model developed for this purpose could provide current soccer managers with a means to effectively gauge whether players in the transfer market are appropriately valued, thereby aiding in strategic decision-making.

Subject Category

School of Business Categories: Economics

Special Topic Information

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

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mansokku Lee

Funding Sources

None

2L: THE ROLES OF DATA AND HR IN BUSINESS

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 119

Session Chair

Li Lu, School of Business

1 • The Great Compromise

Julia Ceravolo, Lauren Bromfield, Josie Avery, Samantha Durland

Abstract

I. Background on Topic

i. The Covid-19 pandemic caused a massive shift to remote work in 2020 in order to avoid the further spread of the illness. Every industry was put in the position to adapt and find a way to maintain productivity. “The Great Compromise”

is now the situation of employers trying to get their employees back in-office when the majority of employees would rather stay remote. With this, the human resource department is tasked with finding a solution that satisfies both employees and the employers.

II. Key HRM Challenges and Impacts

Training: This process helps new employees acclimate to their new work environment. Training employees remotely, if not done correctly, can have a negative effect on morale and employee engagement.

i. Onboarding, on the job training accounts for eighty to ninety percent of employees learning. This large percentage now has to be converted over to remote onboarding because on the job training is no longer plausible.

ii. Technological Issues, challenges arise when employees are required to set up their own equipment and software at home.

III. Action Steps and Recommendations

Interview: We were able to interview a Human Resource Specialist via telephone to give insight about how her company, KOPP Billing Agency, operates.

i. Onboarding

ii. New Policies

iii. Adding New CIT Jobs

Subject Category

School of Business Categories: Human Resource Management

Faculty Sponsor Department

School of Business

Faculty Sponsor

Avan Jassawalla

Funding Sources

None

31 • Analyzing Loan Outcomes: Impact of Socioeconomic Factors on Loan Status within Lending Club Data

Daniel Xu

Abstract

This study investigates the impact of socioeconomic factors on loan status within the Lending Club dataset, a peer-to-peer lending platform that connects borrowers with investors. By employing logistic regression analysis, we aim to elucidate how variables such as education, gender, interest rates, FICO scores, purpose and loan ratings influence the probability of loan default or success. The Lending Club data, known for its rich demographic and financial information, provides an ideal setting for analyzing the interplay between social economics and loan outcomes. Our methodology involves preprocessing the dataset to handle missing values and categorical variables, followed by the application of logistic regression to assess the predictive power of the selected independent variables on loan status. The study not only seeks to contribute to the existing body of knowledge on credit risk assessment but also aims to offer insights into the broader implications of socioeconomic factors on financial decisions and outcomes. Preliminary findings suggest that socioeconomic indicators, particularly FICO scores, education, and interest rates, significantly affect loan status, underscoring the importance of financial history and lending conditions in the loan approval process. The study's results have implications for both borrowers and lenders, highlighting the need for inclusive financial practices that consider a wide range of socioeconomic factors. Through this analysis, we hope to provide stakeholders in the peer-to-peer lending market with valuable insights into the dynamics of loan performance, contributing to the development of more equitable and efficient lending practices.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department

Data Analytics

Faculty Sponsor

Li Lu

Funding Sources
None

182 • Data Visualization of NFL Draft Trends from 1980-2014

Brendan Style

Abstract
This study aims to show how the drafting habits of NFL organizations have changed over time, as well as the overall impact that drafting has on a team's future success. The dataset has been sampled from the python library "NFL-data-py", and contains draft data from the 1980-2014 seasons. The analysis of this data revolves mostly around one key stat; Weighted Approximate Value (WAV for short), which is a metric that aims to sum up a player's value for their career into one number, like Wins Above Replacement, or WAR, in baseball. Using WAV, it becomes far easier for players to be compared across different positions, as well as different eras, thus making it very useful for this study. By standardizing player WAV's relative to each position, several categorical variables were developed to better show their success as a player. Through using these, we can note which teams have had long-term drafting success, and how much that success impacts their accomplishments on the field. This study's other objective is to show how drafting trends league-wide have changed over the 35-year sample. For instance, in the 1980's, all teams ran the ball with a much higher frequency than they did in the 2010's, thus leading to an overall decrease in the number of running backs and guards drafted in the first round. Through this analysis, we hope to provide audience members with a deeper understanding of the NFL draft and its many intricacies.

Subject Category
School of Business Categories: Data Analytics
Faculty Sponsor Department
School of Business
Faculty Sponsor
Li Lu
Funding Sources
None

192 • Impact of Increase in Remote Work on Women’s Career Equality (with Men)

Olivia Okoniewski, Will Minkel

Abstract
Women's career equality is an important topic, especially with the increasing use of remote work which could lead to escalation in biases and discrimination due to the unfamiliarity caused by fewer in-person interactions. The aim is to actively avoid such behaviors. While remote work can positively impact workplace equality, it also carries negative aspects. After discussing these negative impacts and the permanent versus temporary effects, we will then present solutions to steer away from those negative perspectives. Our research shows that this topic is most important to top-level managers and the human resources (HR) department who can establish clear policies and practices as well as mandatory training. This topic highlights how the lack of DEI can hinder women in multiple ways. Based on our research findings, we will provide our managerial recommendations aimed at creating an inclusive culture that supports equal opportunities and addresses biases in ways that create a fair and supportive work environment for both men and women.

Subject Category
School of Business Categories: Business Administration
Faculty Sponsor Department
School of Business
Faculty Sponsor
Avan Jassawalla
Funding Sources
None

304 • Investigating Migration Trends in Response to the COVID-19 Pandemic: Causes and Consequences

Marcus Kautzman

Abstract
The COVID-19 pandemic has significantly altered the landscape of economic activity in the United States, simultaneously prompting a critical examination of migration trends. This examination uncovers a complex array of factors that influence migration behaviors. Our research is dedicated to investigating the wide-ranging impacts that have influenced migration throughout the pandemic period, paying close attention to the variations observed across different racial/ethnic and immigrant populations. By leveraging the monthly Current Population Survey (CPS) data and adjusting for seasonal variations, this study probes into the underlying reasons for migration choices made by individuals from diverse racial/ethnic backgrounds, whether they are foreign- or native-born. Employing individual fixed-effects models, our analysis aims to identify how various factors, including educational disparities and the unequal effects on minority and immigrant groups—especially among Hispanic immigrants—have shaped migration decisions amid the pandemic, driven by employment challenges and broader societal changes. This comprehensive exploration into the driving forces behind pandemic-era migration endeavors to enhance our understanding of how these dynamics have influenced demographic changes and offers perspectives on potential migration trends in a world recovering from the pandemic.

Subject Category
School of Business Categories: Data Analytics

Faculty Sponsor Department
Data Analytics

Faculty Sponsor
Li Lu

Funding Sources
None

2M: APPLICATIONS OF SCIENCE

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 128

Session Chair
Aaron Heap, Mathematics

22 • Modelling and Categorizing Snow Crystal Growth with Cellular Automata

Mariah Taylor

Abstract
Have you ever wondered why no two snowflakes are alike? Since the 1940's, researchers Stanislaw Ulam and John von Neumann have made large contributions to creating a framework to model snow crystals. They invented cellular automata which is still being utilized to create more accurate models of snowflakes. Knowing how to use cellular automata has allowed us to alter our snowflakes from a square lattice to a hexagonal lattice for a more accurate model. Due to snowflakes complexity, we measure the fractal dimension of it to make meaningful connections between various snowflake morphologies. Analyzing the complexity allowed us to draw significant parallels between different snowflake shapes. Given that the shape of a snowflake does not develop in a controlled environment, we'd like to examine snowflakes growing with variables that change several times and see how their fractal dimensions develop. Understanding these processes is critical for identifying a variety of potentially helpful patterns. Temperature has an essential function in determining whether a snow crystal develops into plates or columns. Supersaturation levels, on the other hand, will determine how complex the crystal is; the greater the supersaturation level, the more complicated the crystal. Since no two snowflakes traverse the same route, no two snowflakes encounter the same set of temperature and supersaturation conditions which allows them to be unique.

Subject Category
Interdisciplinary and Other Categories: Other

Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Mathematics
Faculty Sponsor
Aaron Heap
Funding Sources
None

83 • The Gauss-Lucas Theorem

Silas Richardson
Abstract
The Gauss-Lucas theorem states that for any given complex polynomial P, the zeros of P' lie within the convex hull created by the zeros of P, which is the smallest convex polygon containing the roots of P. We present the proof of this theorem and its electrostatic interpretation. We illustrate the Guass-Lucas theorem and its implications using numerical models in Mathematica.
Subject Category
Science and Mathematics Categories: Applied Mathematics
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Mathematics
Faculty Sponsor
Andrzej Kedzierawski
Funding Sources
None

8 • The Generalized Vector Cross Product

Dmitri Novick
Abstract
Students in Linear Algebra and Multivariable Calculus are often taught about the Vector Cross Product as a binary operation between 3D vectors that produces a vector orthogonal to both its inputs. Its calculation in equivalence to a matrix-determinant format begged the question if there exists some Generalized Vector Cross Product of n-1 vectors within n dimensions. I'd since developed a proof that this Generalized Vector Cross Product exists, and indeed this produces a single vector orthogonal to all n-1 inputs. Furthermore, developments were made linking certain properties of the Generalized Vector Cross Product to the more well known properties of the Cross Product as we know it in three dimensions. While this concept is taught in Calculus III (MATH 223) and Linear Algebra (MATH 233), the proof is presented in a way that does not require any member of the audience to have a heavy background in mathematics.
Subject Category
Science and Mathematics Categories: Mathematics
Special Topic Information
Faculty Sponsor Department
Mathematics
Faculty Sponsor
Christopher Leary
This presentation will also be presented at:
Hudson River Undergraduate Mathematics Conference (awaiting abstract approval); Mathematics Association of America Seaway Section Meeting, Spring 2024 (awaiting abstract approval)

Funding Sources
None

270 • A Broader Perspective on Physics

Ryunosuke Tago

Abstract
Get ready on a journey beyond the limits of traditional physics textbooks and explore the dynamic played between fundamental physical principles and the complicated formulation of society. In "A Broader Perspective on Physics," we delve into the rich parallels between the laws of physics and real-world phenomena, uncovering surprising connections that illuminate our understanding of the world. From the chaotic networks of social connectivity to the consistently transforming international relations, each facet of society reveals parallels to timeless physical laws. Discover how fluid dynamics could be used for urban planning, how cultural ideas propagate similarly to waves in physics, and how information cascading behaves similarly to Critical Mass. Through captivating examples and insightful analyses, this presentation exceeds disciplinary boundaries, inviting you to reimagine physics as more than just the study of matter and motion. Join us as we broaden the perspective of our existence, showcasing the profound impact of physics on every aspect of our lives. Prepare to be inspired and enlightened as we uncover "A Broader Perspective on Physics."

Subject Category
Science and Mathematics Categories: Physics

Special Topic Information
The environment and/or sustainability
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department
Physics and Astronomy

Faculty Sponsor
George Marcus

Funding Sources
None

292 • Identifying Normal Polynomials over Finite Fields

Darien Connolly

Abstract
An irreducible polynomial $f \in F_q[X]$ of degree n is normal over Fq if and only if its roots $r, r^q, \ldots, r^{q^{n-1}}$ satisfy the condition $\Delta_n(r, r^q, \ldots, r^{q^{n-1}}) \neq 0$, where $\Delta_n(X_0, \ldots, X_{n-1})$ is the $n \times n$ circulant determinant. By finding a suitable symmetrization of Δ_n (A multiple of Δ_n which is symmetric in $X_0, \ldots, X_{n-1}$), we obtain a condition on the coefficients of f that is sufficient for f to be normal. This approach works well for $n \leq 5$ but encounters computational difficulties when $n \geq 6$. We consider irreducible polynomials of the form $f = X^n + X^{n-1} + a \in F_q[X]$. For n=6 and 7, by an indirect method, we are able to find simple conditions on a that are sufficient for f to be normal.

Subject Category
Science and Mathematics Categories: Mathematics

Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department
Mathematics

Faculty Sponsor
Aaron Heap

Funding Sources
NSF Sponsored REU at University of South Florida at Tampa Bay

2N: UNDERSTANDING THE WORLD AROUND US

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 131
Session Chair
Claire Gravelin, Psychology

43 • The Socially Constructed World of the U.S.'s Contemporary Populist Right

Eugene Bullock

Abstract
Right-wing populism has become an obstructive force in contemporary U.S. politics, but how has that come to be? I suggest that U.S. right-wing populism as of now has been slowly accumulating since *at least* the early 1970s, molded into its current form through— but not limited to— the following factors:

- Each party's economic shift to the right following the effective cessation of Keynesianism
- The relative hegemonic influence enjoyed by the U.S. in the international order following the collapse of the U.S.S.R.
- The rise and subsequent failure of neoconservatism in the U.S.

Through these lenses, modern populists across the world have socially constructed a fabricated world to maintain influence and power. I will also look at different countries and U.S. states (esp. Sweden, the Netherlands, and India; Michigan and Ohio in the U.S.) to track the rhetoric and actions of different right-wing politicians and parties over time. Put differently, the question here is an epistemic one: Do these politicians and political parties actually *believe* the policies they promote? To an extent, I argue that they do not believe this hard-right shift; as the above factors will demonstrate, right-wing populism has been socially constructed out of necessity to maintain relevance in a liberalized world.

Subject Category
Social Science Categories: Political Science
Faculty Sponsor Department
Political Science and International Relations
Faculty Sponsor
Andrew Hart
Funding Sources
None

85 • Understanding the Impact of Ambient Identity Cues: An Evaluation of College and University Welcome Websites

Charlotte Sutphin, Kaitlyn Britt, Gianna Lauciello, Ryan Wienczorkowski

Abstract
In academic settings, a lack of belonging, especially among first year students and students with minoritized identities, has been shown to negatively impact academic performance, retention, and overall well-being (Brannon & Lin, 2021; Murphy & Zirkel, 2015). Our work investigates the importance of subtle environmental cues, ambient identity cues (Cheryan et al., 2009), that may signal identity match or mismatch in academic spaces. Our previous work examined the presence of cues in academic digital spaces regarding text analyses. Through examining college websites, we conducted a qualitative assessment of text- and image-based identity cues. We plan to share the results of this work as well as the preliminary results from our ongoing experimental followup to validate the coded themes observed by trained researchers. Specifically, utilizing a within-subjects design, participants are randomly assigned to evaluate four presentations of five images, each set composed of images gathered during the initial thematic assessment from institutions varying by identity representation. For each image set, participants are asked to assume the role of a prospective student, responding to a series of questions designed to assess perceived belonging as well as institutional prioritization for academics, athletics and equity/inclusion.This research underscores the importance of belonging cues, extending prior investigations to explore prospective students' perceptions of institutions through their online

presentations. It is anticipated that evaluators will perceive institutions that visually represent their identities as offering a greater sense of belonging.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Claire Gravelin

This presentation will also be presented at:

2024 Association for Psychological Science Annual Convention

Funding Sources

None

87 • Development of an Eating Disorders Awareness Website

Faith Manchester

Abstract

During this presentation, I will discuss my journey of developing an eating disorder awareness website designed to educate and assist others. First, I will discuss why I created the website. Next, I will present the process involved in creating the website, emphasizing the importance of collaboration. Then, I will explain the parts of the website, with discussions of how the information could be used to educate and support. Lastly, I will discuss future goals regarding the website. A QR code will also be shown so it is easy for you to find the website.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Monica Schneider

Funding Sources

None

349 • Linguistics and Belonging: Exploring Gender Inclusive Language for Non-Binary Identities in Spanish

Victoria Chizuk

Abstract

In English, gender-inclusive language has been adopted relatively quickly, while in other languages, like Spanish, an attempt to be inclusive usually collides with confusion and conflict, both socially and grammatically. New expressions of gender and gender identities are gaining recognition and acceptance by many communities around the globe, however not all languages are built equal regarding the linguistic rights and visibility of non-binary people. In the way that language reflects society, the words we use about gender-nonconforming people can shape their sense of belonging, as well as other people's perspectives. This can be difficult for languages like Spanish that rely on a gendered perspective, and require new ideas for encouraging inclusivity. Based on the review of the theory, literature, institutional programs, and newspaper articles that reference non-binary people, I will present the outcomes of my research by considering the needs of non-binary Spanish speakers and their linguistic rights. In this presentation, first, I aim to identify and explain what exactly is gender-inclusive language and which arguments support or oppose it. Second, I will analyze what strategies and programs Spanish-speaking countries have enacted up to now. Third, I will examine how these strategies and programs are applied in text. Finally, I will make recommendations on how gender-inclusive language can be promoted within these Spanish-speaking communities. Non-binary language in Spanish is a new topic that has not been explored extensively. Hopefully this research can provide a starting point for others to carry out further investigations to promote unity acceptance of non-binary people.

Subject Category

Interdisciplinary and Other Categories: Linguistics
Faculty Sponsor Department
Global Languages and Cultures
Faculty Sponsor
Susana Castillo-Rodríguez
This presentation will also be presented at:
SUNY Undergraduate Research Conference
Funding Sources
None

2O: LEARNING IN AND FROM THE WORLD AROUND US

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 132
Session Chair
Matthew Pastizzo, Institutional Research, Psychology

173 • Brand Name Psychology on Hot Chocolate Preference

Paris Interdonato-Carreras, Marc Fazzolari
Abstract
Seniors Paris Interdonato-Carreras and Marc Fazzolari decided to examine brand name psychology through conducting a hands on experiment that allowed the SUNY Geneseo community to participate. They chose hot chocolate K-cups as there base level product because it is commonly enjoyed by the vast majority in chilly Western New York areas. The brands that are being used in this experiment are Starbucks, Dunkin, Swiss miss, and Tim Hortons. Their experiment consisted of having each participant first rank each brand by looking at pictures of their logos, and then doing a blind taste test of each brand's hot chocolate. After collecting data from everyone who decided to participate, the project leads then analyzed the brand name preferences in comparison to the pure taste test preferences to see how well they lined up. Overall, after being college friends for many years, Paris and Marc could not think of a more fun way to combine their disciplines (Business and Biochemistry) in order to produce a collaborative project before they graduate in May.
Subject Category
Interdisciplinary and Other Categories: Other
Faculty Sponsor Department
School of Business
Faculty Sponsor
Michael Tenalio
Funding Sources
None

285 • Teaching through Television; Using Kids Media for Educational Purposes

Kate Piscani
Abstract
As we move into the future, it is a clear given that more and more entertainment for children is moving into digital spaces. Because of this, it is important to create high quality programming for elementary level children that is both educational and entertaining. By utilizing both educational lesson planning seen implemented in both public and private schools as well as Screenplay techniques used in writing in the television and movie industry, it is possible that these two different worlds are able to create a helpful and productive educational resource that can be accessed both in and out of the classroom. With public access to these resources, all students can access high quality educational materials regardless of socioeconomic standing, nationality, and access to high quality education. No child should be without high quality educational materials and the movement of education into entertainment is another way to ensure the future generations can grow up to be intelligent, inquisitive, and informed global citizens.

Subject Category
Interdisciplinary and Other Categories: Other
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Education
Faculty Sponsor
SeungJung Jo-Chichester
Funding Sources
None

326 • Educational Equity Watch: A High-Impact Project Combining Web, Data, and Design Skills

Laura Wright
Abstract
Educational Equity Watch (https://educationalequitywatch.net) is a student-created website exposing racialized inequities across New York State (NYS) high schools. The website demonstrates these inequities through qualitative personal interviews with students who have attended a predominantly Black and Hispanic school with few resources; a dashboard with data on every NYS high school (from the New York State Education Department) to show differences in the allocation of resources; and a story map illustrating clusters of high schools with different demographics within the same location and depicting the differentiating resources available to schools based on demographics. The student who created the website, Laura Wright, is a SUNY Geneseo Political Science Major, McNair Scholar, Student Affiliate of the Geneseo Center for Digital Learning, EOP Student, Jewish Foundation for the Education of Women Scholar and a Geneseo Student Ambassador. In order to develop the site, Wright had to develop numerous skills. These include using WordPress on SUNY Create to develop the living body of the website, learning how to move the original website from SUNY Create to another hosting platform, and learning the in's and outs of different coding conventions such as HTML and JavaScript to create a resource page for the website. However, this would not have been possible without the collaboration of the SUNY Geneseo staff and faculty, where Professor Pastizzo, Professor Schacht and Dr.Simmons collaborated, taught, and guided her through these skills to successfully create this website. Wright, Pastizzo, and Schacht will explain and share the process of creating the Education Equity Watch and how the creator (Laura Wright) was able to build the website by developing web management, data visualization, and design skills. Additionally, we will focus on the power of collaboration within the SUNY Geneseo community and how we leveraged different skills from a multitude of educational departments to create the Educational Equity Watch.
Subject Category
Interdisciplinary and Other Categories: Other
Faculty Sponsor Department
Psychology and Institutional Research
Faculty Sponsor
Matthew Pastizzo
This presentation will also be presented at:
2024 SUNY Digital Learning Conference
Funding Sources
McNair Scholars Program Support, Student Ambassador Award

293 • Peer Mentoring of First-year Students by Upperclassmen Enhances Belongingness in the Biology Community

Zehra Rengin, Noe Stephens
Abstract

The transition from high school to university can often be very difficult for students. To help students have a smoother transition, the Biology Mentoring (Biome) Program was created in Spring 2023. The purpose of the Biology Mentoring Program is to foster a welcoming environment by providing advice and guidance to first-year biology students. In the Biome Program, new students meet biweekly with peer mentors who are biology majors, for a total of 6 meetings. Since Spring 2023, a total of 108 first-year students and 61 upperclassmen students have participated in the program. We conducted surveys to check if the program is meeting the students' expectations and if they are benefiting from the program, at the halfway point and at the end of the semester. Survey results show that the Biome Program is having a positive impact on not only new students, but also peer mentors, which suggests that our program can enhance belongingness. On top of enhancing belongingness, through the program, peer mentors are able to gain and improve important skills, such as leadership and communication. We will also discuss the complications that came up, our solutions to these complications, and the overall improvements that we made to the program. We will close by sharing ideas for future plans and how to incorporate the program into the Biology Department in order to help all first-year biology students.

Subject Category
Science and Mathematics Categories: Biology
Faculty Sponsor Department
Biology
Faculty Sponsor
Suann Yang
Funding Sources
None

2P: GENRE, GENERATION, MEDIA

11:30am-12:45pm, Wednesday, 24 April 2024, Welles 133
Session Chair
Mark Broomfield, English

61 • Gen(d)re-Bending in MTV's *Carmen: A Hip Hopera*

Alannah Egan

Abstract
Georges Bizet's Carmen has been restaged countless times since its premiere in 1875, in settings ranging from its original staging to Broadway musicals to a "hip hopera." The opera's revolutionary and boundary-breaking nature has made it a popular vehicle through which musicians have critiqued myriad social issues in historically divergent contexts. Thanks to innumerable reinterpretations, Carmen has been studied and examined through many lenses, most influentially in Susan McClary's feminist reading of the work (McClary 2002). However, scholars rarely consider the complexity of gender in modern reinterpretations of the opera such as MTV's 2001 reimagining, Carmen: A Hip Hopera starring Beyoncé Knowles. The film has been written off as a piece of "Millennial lore," a nostalgia-inducing title that does not seriously critique gender binaries in popular culture. Inspired by Anne Fausto-Sterling's rejection of hegemonic gender norms espoused in The Five Sexes (1993) and The Five Sexes, Revisited (2001), in this paper I offer a gender critical interpretation of Carmen: A Hip Hopera through an analysis of Carmen's gen(d)re-bending (fluid movement across genres, from rap to R&B and classical). I argue that the screenwriter's goal in bridging the gap between "high art" and popular culture inadvertently but effectively questions gender binaries by overtly calling attention to contemporary gender norms. In doing so, I suggest that this work is an enlightening expression of popular culture that can potentially call for a more inclusive understanding of gender and sexual identity in our present moment.

Subject Category
Arts and Humanities Categories: Music
Faculty Sponsor Department
Music and Musical Theater
Faculty Sponsor

Anthony LaLena

Funding Sources

None

153 • Short Film: *Generation Media*

Yarhely Lopez, Iliana Papadopoulos

Abstract

Our project aimed to interpret the disconnection of developing a community as Gen Z due to our increased use of technology. Our movement showcased the constant immersion in digital devices, emphasizing the importance of being present in real-time communal experiences. We wanted to describe the impact of technology on our generation because we are the first generation to experience growing up with easy access to digital technology. Gen Z is the first generation to see the shift from having to put actual effort into building a community to having a safe space at the tip of their hands. Some of the common themes we discussed while creating this project were feelings of loneliness, not belonging, anxiety, and depression. This project serves as a testament to the continuous disconnection created by digital technology, enabling individuals to conceal behind screens and adopt alternate personas. We aimed to raise awareness about the potential benefits of reducing screen time and promoting meaningful human interactions.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department

Professor of English

Faculty Sponsor

Mark Broomfield

Funding Sources

None

CONCURRENT SESSION 3

4:30 - 5:45pm, Wednesday, 24th April, 2024

3A: LEARNING LITERACY THROUGH PLAY

4:30 - 5:45pm, Wednesday, 24th April, 2024, Bailey 101
Session Chair
Sharon Peck, School of Education

76 • Learning Literacy through Play

Savannah Burley, Sharon Peck
Abstract
Dr. Sharon Peck and Savannah Burley have been working on a faculty project called, Playing to Learn: Researching the Role of Playfulness in Literacy Instruction, which focuses on the incorporation of play into literacy instruction in the classroom. Dr. Sharon Peck and Savannah Burley have been digging deeper into six key aspects of playful learning that educators should strive to bring into their instruction. This research project has been focusing on research and data from the SUNY Geneseo Literacy Clinic, an integral part of the requirements in the Reading and Literacy Master's program. For our GREAT Day presentation, we are opening up the opportunity for participants to try out and respond to our playful literacy learning research and explore the ways they can use playful literacy instruction in their own fields, and in their lives. Participants will be engaged in trying out games and multimodal interactive learning methods.
Subject Category
School of Education Categories: Early Childhood/Childhood Education
Faculty Sponsor Department
School of Education
Faculty Sponsor
Sharon Peck
Funding Sources
Dean Johnston Student Research Assistantship

3B: INTERNSHIPS FOR ENGLISH MAJORS: A ROUND TABLE

4:30 - 5:45pm, Wednesday, 24th April, 2024, Bailey 102
Session Chair
Kendall Cruise

236 • BOA Editions Internship

Nevaeh Tucker
Abstract
In my presentation I will be discussing my experience as an intern at BOA Editions. BOA is a not-for-profit publishing house located in Rochester. They publish poetry and short fiction works. My work with BOA involves proofreading and editing works of literature, doing customer and reviewer mailings, publicity/marketing related tasks, and so forth. I plan to relay to attendees what I have learned as an intern, how being an English major has prepared me for the internship, and the details related to obtaining an internship.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English

Faculty Sponsors
Ken Cooper and Caroline Woidat
Funding Sources
None

340 • International Yeats Society Internship

Isabelle Covert
Abstract
I intern with Professor Doggett and the International Yeats Society. For this internship, I manage the website and social media accounts. W.B. Yeats was an Irish poet in the late 19th and early 20th century. I started this year-long internship at the end of spring 2023, because I had taken a major authors class focused on W.B. Yeats with Professor Doggett that semester. In my internship, I wrote a code of conduct for conferences for the Society, as well as went to the conference in Stockholm, Sweden last October and presented what I did to the board. Professor Doggett and I developed a new payment system for the society, and updated it on the website. This website uses some technological skills, but since the website uses Wordpress, and I had used it before for other English classes, it was fairly easy to learn. These skills are applicable to many careers that can come out of an English major, including teaching, which is what I plan to do once I graduate this May. A lot of the editing and writing skills I have developed in the English major have also come in handy for this internship, and we are looking for a student to take over once I graduate.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English
Faculty Sponsors
Ken Cooper and Caroline Woidat
Funding Sources
None

207 • The Career Design Center and Internships that Prepare You for Your Next Steps

Makayla Garrison
Abstract
As a Career Peer Mentor, I help Geneseo students navigate Career Design Center resources and connect them to people who can further assist them with their questions. I also work with the marketing intern in our office to help showcase the resources of the Career Design Center on Instagram to the campus community and make them easy to understand and accessible. I will be discussing how I have developed the NACE Career Readiness Competencies through my internship and why they are important to your career journey as well. I will touch on competencies like communication, leadership, teamwork, and professionalism that are highly desired by employers when hiring students and recent graduates. There will also be mention of our most used and helpful resources from our website, like Handshake and LinkedIn, as well as self-exploration tools to help students navigate and decide their next steps for their future.
Subject Category
Arts and Humanities Categories: English
Special Topic Information
Faculty Sponsor Department
English
Faculty Sponsors
Ken Cooper and Caroline Woidat
Funding Sources
None

297 • Research Instruction Internships with Library Sciences

Mar Leeman

Abstract

A presentation of the Research and Instruction Internship opportunity in conjunction with the university's library.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English

Faculty Sponsors

Ken Cooper and Caroline Woidat

Funding Sources

None

327 • Using English Skills at an Arts Nonprofit

Ralph Velasquez

Abstract

This flash presentation will explore how the English major has prepared the presenter for an internship at a local arts nonprofit, the Genesee Valley Council on the Arts. This internship requires teamwork, creative thinking, research, working with primary sources, writing, editing, and so much more! This flash presentation is intended to connect these skills and more to those cultivated in the English major to help others feel more prepared for entering the workforce.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department

English

Faculty Sponsors

Ken Cooper and Caroline Woidat

Funding Sources

None

3C: RECENT RESEARCH IN CHEMISTRY

4:30 - 5:45pm Wednesday, 24th April, 2024, Bailey 103

Session Chair

Kazushige Yokoyama, Chemistry

163 • Analysis and Characterization of SARS CoV-2 Spike Protein Coated Gold Colloids

Marc Fazzolari

Abstract

The spike protein (s-protein) of SARS-CoV-2 Alpha variant was synthesized on nano-gold colloids, and its spectroscopic properties were examined. The analysis revealed the formation of a protein corona over the colloids, facilitating the study of protein-protein interactions under varying pH conditions. Under acidic conditions (pH ~3), the s-protein showed indications of aggregation due to the unfolded state of the Receptor Binding Domain (RBD) segments. Cycling the pH between acidic (pH ~3) and basic (pH ~11) conditions resulted in a quasi-reversible aggregation process. Similar pH reversible conformational changes were observed with Omicron s-protein coated gold nanoparticles. This investigation, conducted in an undergraduate laboratory, effectively integrated advanced analytical chemistry techniques with developments related to the COVID-19 pandemic. Additionally, the interaction between the s-protein-coated gold colloid and ACE2 (Angiotensin-Converting Enzyme 2) was started.

Subject Category
Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Kazushige Yokoyama
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

300 • Investigation of Surface-Enhanced Raman Spectroscopy on Cytoskeletal Protein Reconstruction of Vulvar Cancer

Kia Haering, Patrick Loss, Nicole Mathewson
Abstract
When treated with the corticosteroid known as clobetasol, the epithelial vulvar cancer cell line A431 undergoes a predictable cellular reconstruction. Changes in cytoskeletal protein biomarkers in treated cells are indicative of an epithelial-mesenchymal transition. This transformation could be a useful model to demonstrate the interactions of involved proteins from a chemical perspective. Its internal validity is supported by successful replications of the experiment. The use of surface-enhanced Raman spectroscopy (SERS) paired with colloidal gold nanoparticles is a promising approach to quantify these interactions. We attempted to use a 3-dimensional SERS imaging technique to characterize the change in cytoskeletal proteins of a single cell. The mechanisms of this expected cellular reconstruction can be visualized through tracking the protein interactions and surface composition during this transition. While spectral assignments reveal the order of gains and losses of protein, the collected signals and their comparison from signals in literature sheds light on the binding, folding, and repelling forces between these cytoskeletal proteins.
Subject Category
Science and Mathematics Categories: Chemistry
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Kazushige Yokoyama
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

385 • Attempt of Studying Amyloid Oligomers in the Alzheimer's Disease Rat by Utilizing Gold Colloid Aggregates

Joel Mukkatt
Abstract
Utilizing Raman imaging, in-situ detection of gold-colloid aggregates in the brains of the Alzheimer's disease rat was conducted. Through Raman imaging, we can find that the aggregates exhibited a distinctive physical identity compared to the gold colloid aggregates that were observed and formed from the Ab1-42-fibrill coated gold colloid. While analysis is still underway, our data has shown that a b-sheet conformation is a significant piece in the formation of the gold colloid aggregates.
Subject Category
Science and Mathematics Categories: Chemistry
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department

Chemistry
Faculty Sponsor
Kazushige Yokoyama
This presentation will also be presented at:
The 68th Annual Rochester Local Section, ACS Collegiate Research Symposium
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin ’58 Research Award

3D: WHO'S THE BOSS? PRESIDENTS, THE FED, INFLATION, AND THE ECONOMY

4:30 - 5:45pm Wednesday, 24th April, 2024, Bailey 104
Session Chair
Léonie Stone, School of Business

79 • Who's the Boss? Presidents, the Fed, Inflation, and the Economy

Emily Bahm, Alexander Berg, Sarah Ginnane, Jack Katz, Ace Raghavan, Ethan Whitehead
Abstract
The Fed Challenge team explains what's going on in the economy, including growth, inflation, China, and technological change. Along the way, we discuss the role of presidents and the Fed in steering the economy: who's really in charge?
Subject Category
School of Business Categories: Economics
Faculty Sponsor Department
Business
Faculty Sponsor
Léonie Stone
Funding Sources
None

3E: WOMEN'S AND GENDER STUDIES CAPSTONE PANEL 3

4:30 - 5:45pm, Wednesday, 24th April, 2024, Bailey 105
Session Chair
Amanda Roth, Philosophy

238 • Diversifying the Teacher Force

Sarah Russell
Abstract
Within my research, I will uncover why diversifying the teaching occupation will lead to better student outcomes and success. There is a drastic overrepresentation of white teachers who are women which leads to an underrepresentation of teachers from other races and genders. In education, it is important for students to see themselves within the curriculum and literature but it is just as important for them to be able to relate to and see parts of themselves within their teachers as well. In this paper, I will analyze interviews with both teachers and students to understand the dynamic that is brought upon by this lack of diversity. Literature will help to support the findings on how a white female-dominated profession affects young student's development, especially Black students. My research will also touch upon gender roles and how men and women hold different positions in the school that help to further add to the gendered division brought on by society's norms.
Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Special Topic Information

Faculty Sponsor Department

English, Black Studies, Women's and Gender Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

Funding Sources

None

338 • The Intersection of Race, Mental Health, and Incarceration Among Black Americans

Abigail George

Abstract

Research has indicated that being a member of a racial minority group with mental health challenges is associated with disproportionate experiences with the criminal justice system, especially for Black individuals compared to White individuals (Flores et al., 2023). Moreover, research indicates that experiences with the criminal justice system, including incarceration, can significantly increase the risk for mental health challenges for both Black men (Assari et al., 2018; Turney et al., 2013) and women (Kilpatrick et al., 2021). This paper will explore four pivotal topics related to race, mental health, and incarceration, with a specific emphasis on the experiences of Black individuals. The first issue delves into how an individual's race/ethnicity and other interpersonal factors impact the early life patterns of adolescents' involvement with the criminal legal system (Boen et al., 2022), as well as the interaction between one's race/ethnicity and mental health regarding the risk of being incarcerated (White, 2016). The second issue explores how mental health affects the experiences faced by Black inmates during their incarceration, including disparities in mental health referrals and diagnosis (Fatos et al., 2015) and instances of correctional staff-involved violence (Grosholz et al., 2023). The third issue examines potential mental health outcomes associated with incarceration for Black individuals. Finally, alternative solutions are explored to encourage therapeutic justice within the Juvenile and Criminal Justice Systems (Cusack et al., 2013) and to implement improved mental health programs to address the needs of Black individuals and other racial minority groups (Vinson et al., 2021).

Subject Category

Social Science Categories: Sociology

Faculty Sponsor Department

Black Studies

Faculty Sponsor

Olaocha Nwadiuto Nwabara

This presentation will also be presented at:

The National Conference of Undergraduate Research (NCUR) April 7-10, 2024.

Funding Sources

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

333 • Examining the Role of Charter Schools in the School-to-Prison Pipeline: A Comparative Analysis of Experiences for Black Boys and Black Girls

Madison Centeno

Abstract

This research aims to investigate the ways in which charter schools contribute to the school-to-prison pipeline, with a specific focus on how this experience varies for Black boys compared to Black girls. The study will draw upon existing literature to frame the topic, highlighting the disparities and injustices within the education system, particularly within the context of charter schools. Utilizing extensive literature analysis, this research seeks to uncover the underlying factors contributing to the differential experiences of Black students in charter schools. By addressing this gap in the

literature, the study aims to provide insights that can contribute to the understanding of how institutionalization and criminalization of young Black children harm the Black community.

Subject Category
Social Science Categories: Sociology
Faculty Sponsor Department
English, Black Studies, Women and Gender Studies
Faculty Sponsor
Olaocha Nwadiuto Nwabara
Funding Sources
None

3F: EDGAR FELLOWS CAPSTONES PANEL 6

4:30 - 5:45pm Wednesday, 24th April, 2024, Bailey 201
Session Chair
Michael Mills, National Scholarships and Fellowships

144 • Partical Swarm Optimization and its Use in Sustainability

Mia Turco
Abstract
Particle Swarm Optimization (PSO) is a powerful optimization algorithm which uses social behavior seen in birds and fish as the basis of its efficiency. This presentation explores the application of PSO in advancing sustainable practices across diverse optimization issues. By exploiting PSO's iterative optimization process and its adaptability to complex sustainability challenges, we highlight its efficacy in complex sustainability issues such as energy, transportation, and manufacturing This project will cover PSO's evolution, hybridization with other optimization techniques, and its application in various optimization domains Through case studies and real-world applications, we demonstrate how PSO fosters economic viability while minimizing environmental impact. Additionally, we discuss the integration of PSO with machine learning and data analytics for enhanced sustainability outcomes. This project reviews several approaches that have been applied to solve a wide range of optimization problems, including system reliability optimization, parameter adaptation in PSO, and optimization in engineering application. This project highlights the versatility and effectiveness of chaos-embedded PSO algorithms in addressing complex optimization challenges across various domains.
Subject Category
Interdisciplinary and Other Categories: Edgar Fellows
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Mathematics, Edgar Fellows
Faculty Sponsor
Ahmad Almomani
Funding Sources
None

19 • A Preliminary Research Experiment on The Relationship Between the Effects of Selenium on The Thyroid and its Correlation to Sex and Breed of The Equine Species

Chloe Newcomb
Abstract
By examining multiple aspects of equine diet, exercise, breed, and sex, this research aimed to establish a link between metabolic activity and predispositions of the animal. Over the course of 3 semesters and 8 individuals, we collected and

analyzed several blood tests. A connection between nutritional additives and tested values such as potassium, glucose, and selenium was found. The experiments evolved each semester, ultimately taking a closer look at selenium values as those may be the greatest indicator of an overactive metabolism. Results have shown a possible link between breed to metabolic rate. Raised selenium levels may increase the risk of an overactive metabolism. This was suspected in a previous subject that has since passed, possibly due to selenium toxicity. This idea was incorporated in the final experiment where we looked at the animal's sex and metabolic activity. I hoped to prove that those bred to have a high activity level and horses of the female sex are at more risk of certain metabolic illnesses linked to selenium toxicity. Although a statistically significant linkage could not be established due to multiple factors, I plan on gaining more of an understanding of the selenium levels within the body and how that has played a role in the metabolism and overall health of the animal. The continuation of this research strives to impact the world of equine medicine through an increased understanding of metabolism and its linkage to the innate characteristics of a horse.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

Funding Sources

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

334 • How Heterotrophic Bacteria Respond to Blooms of Single-Cell Cyanobacteria in Conesus Lake

Brennan Wilcox

Abstract

Over the last 12 summers, Conesus Lake has experienced July blooms of single-cell cyanobacteria that persist for nearly 2 weeks, with peak numbers of more than 300 thousand cells per milliliter. My project examines how heterotrophic bacterial populations respond to the change in the abundance of photosynthetic bacteria during the onset, peak, and collapse of their July blooms. Ten samples were taken from 1-3 m depths between July 7th (before the bloom) and September 21st (after the bloom) in 2023. The samples were preserved in a 1% final concentration of paraformaldehyde and refrigerated until analysis. Two mL of each water sample was filtered onto a 0.2-micron Nucleopore filter and stained with DAPI, a nuclear stain that fluoresces under UV light. The concentration of heterotrophic bacteria was determined from images taken on an epifluorescence microscope at 200x magnification using a DAPI filter set. A Texas Red filter set that causes fluorescence of cyanobacterial pigments was used to image the photosynthetic bacteria. Image analysis using the software program ImageJ is still underway. Representative data from the Sept. 1 samples showed a concentration of 2.47 million heterotrophic bacteria cells per mL, while
photosynthetic bacteria concentration was 0.17 million cells per mL – roughly a ratio of 14:1. Altogether, the data indicate that the heterotrophic bacteria track changes in the abundance of photosynthetic bacteria, showing a very rapid response to changes in biomass that occur during July blooms in Conesus Lake.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Isidro Bosch

Funding Sources

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

54 • Greco-Roman Mythology Today: Retelling *Children of Heracles*

Jessica Adams

Abstract

Humans have always retold stories. We can see retellings and adaptations everywhere, from Disney's adaptations of fairy tales to the movie Clueless, which was based on Jane Austen's Emma. The ancient Greek playwright Euripides left us many famous tragedies, including Medea and the Bacchae. I spent the last several months adapting one of his more obscure works, Children of Heracles, into a novella. Euripides' play follows Hercules's young children, who have been recently orphaned and then fled across Greece, pursued by their father's enemies. They find refuge in Athens, only for the gods to demand a human sacrifice for the city to survive. Hercules's only daughter, Macaria, volunteers to be sacrificed, and refuses to be talked down. Euripides' play has many strengths, but in my opinion it also had glaring flaws. The most disappointing of which is that Macaria, who should be the protagonist, is only present in one scene. My goal for the retelling was to make the story more digestible to modern audiences, and to allow Macaria to tell her own story.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

English

Faculty Sponsor

Weston Kennison

Funding Sources

None

3G: EDGAR FELLOWS CAPSTONES PANEL 7

4:30 - 5:45pm Wednesday, 24th April, 2024, Bailey 202
Track Interdisciplinary and Other Categories: Edgar Fellows
Aaron Steinhauer

39 • The Potential Of Expanding The Scrum Framework Into Other Fields Outside Of Software Development

Paris Interdonato-Carreras

Abstract

As an A-CSM (Advanced Certified Scrum Master) and Co-Founder of a Consulting Company called Mastery Rising, Paris Interdonato-Carreras has gained experienced working professionally with software development teams on product development projects. Throughout her journey thus far, she has developed a comprehensive understanding of not just what Scrum has been, but what it can become as well. For Interdonato-Carreras' Edgar Fellows Capstone, she has chose to further explore the possibility of expanding Scrum into realms outside of software development. She first produced initial papers through her findings conducting secondary research. These findings have helped her develop the optimal Scrum Training session for participants to learn about Scrum, and explore its application in project scenarios relevant to their professional paths. She hopes to use this data to argue her case to non-software development firms, that they should hire her company to implement Scrum and use it to carry out projects for them with the most time and financial efficiency possible.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Edgar Fellows

Faculty Sponsor

Avan Jassawalla

Funding Sources

None

103 • Shifting Perceptions: Exploring Student Attitudes towards Accounting and Promoting Interest in Accounting

Rachel Stevens

Abstract

Accounting is a versatile subject that plays a role in nearly every aspect of life in the modern era. The importance of accounting is unknown to most, as many do not realize the functions of accounting are at the root of every organization that impacts daily life. The accounting profession is currently seeing a shortage of accountants and CPAs, with less students selecting accounting as a college major. This decline could be in part due to the perception of accounting as a boring subject and a misunderstanding of the uses for accounting. This project explores the perception that current college students at SUNY Geneseo hold about the field of accounting. Survey responses from students were used to assess how students view the topic. Based on this data, recommendations on how to get more students interested in accounting are presented. A literature review accompanies this data to showcase the rich history of accounting and put a spotlight on the extensive role of accounting in today's society. If students are able to recognize accounting as a subject associated with the things they enjoy, such as sports franchises and musicians, then perhaps more students will want to enter the profession.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Accounting

Faculty Sponsor

Elizabeth Felski

Funding Sources

None

298 • Exploring the Cognitive Dynamics of Bilingualism: Insights from Neuroscience and Bird Mimicry

Gabrielle Joseph

Abstract

This comprehensive literature review explores the cognitive dynamics of bilingualism, drawing insights from neuroscience and avian mimicry. In exploring disparities and similarities between the cognitive models of the bilingual and monolingual brains and the impact of bilingualism on cognitive function, this research aims to offer an understanding of the cognitive processes involved. Parallels are drawn between bird mimicry and bilingualism, diving into similarities in cognitive mechanisms across species. The examination of avian mimicry provides valuable knowledge about the adaptability and flexibility of cognitive processes involved in language acquisition and use. This investigation consolidates findings to provide a holistic view of the cognitive dynamics of bilingualism.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department

Psychology

Faculty Sponsor

Matthew Pastizzo

Funding Sources

None

3H: THE 2024 ECA CONFERENCE PRESENTERS

4:30 - 5:45pm, Wednesday, 24th April, 2024, Bailey 203
Session Chair
Atsushi Tajima, Communication

213 • Communicating Locally, Communicating Globally: An Analysis of Starbucks' Global Marketing Strategy

Alexandra Pucci-Schaefer
Abstract
Throughout this article, we will explore how the well-known coffeehouse chain Starbucks adapts to international cultures daily. Various steps are taken to create a global brand from a small chain, with customer satisfaction at the top of the list as a leading factor in Starbucks' success. Itis essential to share the American culture elsewhere; however, bringing in culture from 70 different countries excites people, which keeps the customers from that country returning for more. The language adjustment, the use of original products, the advertisement and promotion from country to country, the values among the population, and, finally, the change in addition to the consistency are just some examples of how this globally known brand adapts to reach new customers.
Keywords: Starbucks, international business, global culture, adaptation, communication
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:
James C. McCroskey and Virginia P. Richmond Undergraduate Scholars Conference at Eastern Communication Association 2024
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

214 • Deceptive Deficit: An Analysis of User Acquisition Strategy and Cognitive Dissonance in the Mobile Game Industry

Jason Kagan
Abstract
Gaming has become a ubiquitous aspect of popular culture. While the majority of mobile game companies practice legal and ethical advertising practices, there is a growing trend of deceptive video game advertisements. Mobile game advertisements have been incorporating clickbait that bears little to no resemblance to the actual game. These deceptive advertising tactics are part of a user acquisition strategy designed to boost app visibility. This study analyzes how mobile game advertisers use deceptive advertisements and cognitive dissonance to persuade individuals to install their games and how mobile game companies profit from this strategy using their "freemium" model of gameplay.
Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communications
Faculty Sponsor
Atsushi Tajima
This presentation will also be presented at:

2024 James C. McCroskey and Virginia P. Richmond Undergraduate Scholars Conference at Eastern Communications Association

Funding Sources

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

215 • Cashing in on the LGBTQIA+ Community: The Hypocrisy of Woke Advertising

Kathryn Bowes

Abstract

Corporations have been utilizing woke advertising to reach audiences who care about the social beliefs of the corporations they consume in. An aspect of woke advertising is the use of LGBTQIA+ representation, especially during pride month. Corporations have begun displaying their advocacy for the community with their marketing and advertising despite their inherent beliefs being against their recent change in ethics. This paper examines how the use of woke advertising that utilizes LGBTQIA+ representation can convey cognitive dissonance within consumers. It will explore the ways corporations have contributed to the marginalization of the community while portraying activism in their advertising and marketing.

Keywords: Woke Advertising, LGBTQIA+, cognitive dissonance, activism, advocacy

Subject Category

Social Science Categories: Communication

Faculty Sponsor Department

Communication

Faculty Sponsor

Atsushi Tajima

This presentation will also be presented at:

2024 James C. Mcroskey and Virginia P. Richmond Undergraduate Conference at Eastern Communications Association

Funding Sources

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

216 • We Are Killing Ourselves: The Media Are Telling Us to Kill Ourselves

Madelyn Engel

Abstract

Suicide is a tragedy. Today, people increasingly receive stresses, and the rate of suicide remain consistently high, or increasing. This preliminary study first reviews the current situation and social background regarding suicide. It then conducts a survey asking how people perceive suicide, media representations and narratives of suicide, and media messages that attempt to help prevent suicide. The study argues that the media's depiction of suicide needs some critical reconsideration. While the study argues the value of media messages attempting to prevent suicide, such messages are not as effective as they hope. Thus, we need to further examine those messages to help them become more effective.

Subject Category

Social Science Categories: Communication

Faculty Sponsor Department

Communication

Faculty Sponsor

Atsushi Tajima

This presentation will also be presented at:

The 2024 James C. McCroskey and Virginia P. Richmond Undergraduate Scholars Conference at Eastern Communication Association

Funding Sources

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

217 • Critical Analysis of Paid Political Advertisements on Broadcast Television and their Effects on Voters

Justin Blakesslee

Abstract
Political Advertisements in contemporary America have reached a point where individuals are highly influenced to the methods and strategies used by candidates in an election campaign. While social media exhibits influential political strategies, those on broadcast television can be more problematic since they often can not be skipped through. Strategies like negative political advertising, emotional appeal, and candidate image branding used in broadcast television are found to be significant independent variables in stimulating individuals to have strong difference in voter ideology and causes an influx of voter turnout as a result. The use of these variables is analyzed empirically using a survey which assesses political advertisements from the 2012, 2016, and 2020 elections that use each of these variables on voter ideology, voter turnout, voter attitudes, and the socio-political climate in America.

Subject Category
Social Science Categories: Communication

Special Topic Information
The environment and/or sustainability

Faculty Sponsor Department
Communication

Faculty Sponsor
Atsushi Tajima

This presentation will also be presented at:
2024 Eastern Communication Conference in Cambridge MA

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

3I: DISCOVERIES IN ANTHROPOLOGY

4:30 - 5:45pm Wednesday, 24th April, 2024, Bailey 204

Session Chair
James Aimers, Anthropology

273 • Guns, Bombs, and Flying Machines: Disproving Claims of Modern Technology in Ancient India

Dorian Geraci

Abstract
Composed of four books known as the *Rigveda*, the *Yajurveda*, the *Samaveda*, and the *Atharvaveda*, the *Vedas* are considered the oldest Hindu religious writings in existence. This position grants them significant status in many sects of Hinduism, which count the *Vedas* a prime source of religious authority and interpret their stories and teachings literally even today. Their authority and integration into contemporary life became a significant part of the Hindu nationalist movement from the 19th century onwards, which interpreted certain passages of the *Vedas* and other ancient Hindu writings as describing the existence of modern technology thousands of years ago in India. These claims, which alleged the existence of everything from genetic engineering to flying machines, were used as evidence that India was the birthplace of science and technology to create Indian, and more specifically Hindu pride in the middle of colonization. Cited in 2014 by Indian Prime Minister Narendra Modi, the theories did not die out with independence. Despite the continued lack of any actual archaeological evidence to back them up, interpretation of the *Vedas* alone has been considered evidence enough for these ideas to remain a focal point in the modern Hindu nationalist movement. This presentation will aim to disprove these hyper diffusionist fallacies which once played a role in nation-building but which now support dangerous forms of Hindu nationalism.

Subject Category
Social Science Categories: Anthropology
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Anthropology
Faculty Sponsor
James Aimers
Funding Sources
None

313 • Pseudoscience and Monstrosity: How Belief in the Paranormal Reflects Frameworks of Deviance

Alex Gaboury
Abstract
Pseudoscientific claims are often entrenched in problematic frameworks, often supported by incorrect interpretations of the archaeological record. In the case of "monstrosity," this is used in a way to counteract deviance with claims of science. This can be seen in the example of the Highgate Cemetery vampire hunt and the fear of Satanism. Vandalism of the cemetery as well as grave desecration was seen as examples of vampirism, specifically of satanists trying to bring back Vlad the Impaler. These claims are pseudoscientific, because despite Occam's razor suggesting that the most likely situation is the valid one (i.e. teenagers vandalizing tombstones rather than the inspiration for Dracula rising again), these people believed, and convinced others to join them in that belief, that supernatural forces were at work. Using vocabulary from the scientific method, they justified their actions, despite inaccuracies (such as using eye witness accounts which are known to often be false). This stands in a longer line of claims in which moral panics arise around "monstrous" activity believed to be a result of paranormal activity. However, this relationship shows how our society constructs narratives around deviance and morality in ways that are then compounded by falsely utilizing archaeological evidence.
Subject Category
Social Science Categories: Anthropology
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Anthropology
Faculty Sponsor
James Aimers
Funding Sources
None

16 • Redefining the Will of God: From Christian Polygamy in Utah to Islamic Polygamy in Senegal

Brianna Cohen
Abstract
In the United States, polygamy is a taboo that contradicts the normative relationship pattern of monogamy. However, in some West African countries such as Senegal, polygamy is common practice, and legal. Despite its illegality in the United States, polygamy continues in Mormon Christian communities in Utah. In contrast, polygamy in Muslim countries like Senegal is regulated through the government and through the Quran. The validity and ethics of polygamous relationships come into question as women often bear the brunt of hardships in terms of jealousy, heartbreak, divorce, and gender stratification. Not only are typical binary gender roles performed and stereotypes visible but they are

amplified in this situation where women often have no choice but to accept the desires of their husbands. This can be seen in the novel *Une si longue lettre* (So Long a Letter) by Senegalese author Mariama Bâ who writes of the trials of women in the 1970s as they navigate their familial relationships in connection to polygamy. My research, supported by existing scholarship, critically yet thoughtfully discusses this sensitive topic in the context of America and Africa. The two-fold objective of my work is to deconstruct the nuanced realities of polygamous relationships and to attempt to revisit and redefine the normalization and regulation of polygamy by Mormon Christianity and Islam of the perceived equal treatment of co-wives. Lastly, supported by existing literature, this research thus sheds new light on the pitfalls of polygamy as it pertains to women in both the United States and Senegal.

Subject Category
Social Science Categories: Anthropology
Faculty Sponsor Department
Global Languages and Cultures
Faculty Sponsor
Kodjo Adabra
This presentation will also be presented at:
National Conference on Undergraduate Research
Funding Sources
None

3J: FLASH PRESENTATIONS: BREAKING NEW GROUND

4:30 - 5:45pm, Wednesday, 24th April, 2024, Welles 115
Session Chair
Alexis Clifton, Teaching and Learning Center

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254 • Showing Presence through Properties: Tuck Everlasting

Kate Piscani
Abstract
In our everyday lives, we are surrounded by objects that show us who we are and where we come from. Each item gives us the story of who the owner is, how they interact with the world around them, and where they are going. In theater, these items are designed by the Properties Director. In the Department of Musical Theater and Theatre and Dance's co-production of Tuck Everlasting, properties were designed to showcase different groups and ways of life seen in the show; accomplished through differences in color, texture, material, and movement. Holding careful consideration for narrative context and dramaturgy, my properties design establishes three distinct worlds; the Tuck family, the Foster family, and the traveling Circus as they live in our world of Treegap, New Hampshire. In doing this we are able to build a more believable world on stage in which audience members can appreciate all aspects of the production and truly suspend their disbelief as the narrative takes place on the stage.
Subject Category
Arts and Humanities Categories: Theatre
Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)
Faculty Sponsor Department
Theater
Faculty Sponsor
Rosalind Isquith
Funding Sources
None

172 • Improve Reading

Emma Hayes

Abstract

This would be an app that would be used partnered with Artifical Intelligence to help with 1. identifying the problem areas in reading comprenhension 2. being able to make a personalized skills assessment to improve the areas and achieve academic success for all early/childhood education.

Subject Category

School of Business Categories: Entrepreneurship

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mark Rider

Funding Sources

None

174 • Exploitation of Land and Labor

Jessica Marinaro

Abstract

Both the science of land exploitation and the social justice implications of labor exploitation have been extensively studied, but what do they mean in conjunction with each other? This research project aims to shed light on the interconnected ideologies behind the justification of exploitation of land and human beings for profit. Inspired by Suzanne Pierre's Critical Ecology framework, this presentation is interested in the intersection between environmental and social justice as it relates to labor, past and present.

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

James Kernan

Funding Sources

None

306 • The Role of Basic and Advanced Statistics in NBA Contracts

Jason Copella

Abstract

Analytics has taken a surge in the National Basketball Association in recent years. My work examines NBA salary figures for every player in the league during the 2022-23 season, as well as a wide range of player statistics, both basic and advanced. This work was done to examine just how far of a hold analytics and advanced stats have taken in NBA team construction, specifically for contract extensions. I wanted to see if certain statistics were being overrated or underutilized when giving players contract extensions. With numerous teams constantly struggling against the salary cap and remaining within their budget, I wanted to see what statistics NBA teams focused on when deciding which players deserve "max" contracts. I have constructed numerous graphs that examine the relationship between various statistics and NBA player salaries. Using this, I was able to see if analytics are truly the future of the league when evaluating talent or if the old-school basic statistics still remain highly relevant.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department
Data Analytics
Faculty Sponsor
Byeong-Hak Choe
Funding Sources
None

3K: WHERE DID THAT WORD COME FROM: REPORTS FROM THE HISTORY OF THE ENGLISH LANGUAGE

4:30 - 5:45pm, Wednesday, 24th April, 2024, Welles 117
Session Chair
David Sweeney

6 • Unveiling the Origins and Evolution of 'Lord

Kayla Stewart
Abstract
The word "Lord" is an important part of the English linguistic tapestry, carrying historical, religious, and social meanings with it. This etymological paper aims to examine the term's origins and evolution, tracing its roots through history and investigating its multiple meanings across cultures and periods. Through thousands of years, "Lord" has passed through linguistic boundaries, affecting various tongues and civilizations, each connecting the term with unique meanings-- a sign of their social systems and beliefs. By unraveling the complicated threads of its etymology, we acquire a better understanding of the word's profound meaning and long-lasting usefulness in human vocabulary.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English
Faculty Sponsor
Graham Drake
Funding Sources
None

224 • Word History Report: The Metamorphosis of "Bug"

Mollie McMullan
Abstract
This paper tracks the origins of the word "bug" through the usage of the Oxford English Dictionary. It's history can be traced from the 1600s to now, though it may have roots from as early as 1425. The historical analysis of "bug" reveals a fracturing of forms and usages, some reliant on the location in which the word is used. Exploring this word reveals a rich world of evolution that is otherwise a mystery.
Subject Category
Arts and Humanities Categories: English
Faculty Sponsor Department
English
Faculty Sponsor
Graham Drake
Funding Sources
None

3L: BLACK HUMANITIES: THE 1619 PROJECT

4:30 - 5:45pm, Wednesday, 24th April, 2024, Welles 119
Session Chair
Briana Palhares

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250 • The Revolutionaries of Fort Mose

Victoria Lorenz
Abstract
This paper will discuss the poem “Fort Mose” by Tyehimba Jess and how the historical context of Fort Mose ties into the poem. The poem explores many important topics spanning over the history of the fort, topics we should know more about. Fort Mose was a free Black settlement in modern-day Florida that initially consisted of formerly enslaved Africans and eventually Indigenous tribes native to the area. The poem demonstrates the historical significance of Fort Mose while drawing attention to a history that the average person doesn’t know much about. When the Spanish announced that they would give freedom to those who would pledge loyalty to the crown, enslaved Africans would flee into the South. Fort Mose became a transcultural haven in the South for many years. It was one of the first places where interracial relationships were normalized and not considered taboo. The fort's creation led to many significant events in the history of the United States. The essay will analyze Jess’ poem and break it down into the events and ideas that it was created from.
Subject Category
Arts and Humanities Categories: Literary Arts
Faculty Sponsor Department
English, Black Studies
Faculty Sponsor
Maria Helena Lima
Funding Sources
None

286 • A Two-Sided Freedom

Samantha Pynn
Abstract
A Two-Sided Freedom reviews and analyzes a narrative from The 1619 Project, *Freedom is Not for Myself Alone* by Robert Jones Jr. The narrative explores the perspective of an enslaved man running away from his enslavers to join the British to fight against the colonies during the Revolutionary War. This essay dives into themes of freedom and the meaning of the word as well the hypocrisy of freedom in the colonies.
Subject Category
Arts and Humanities Categories: Literary Arts
Faculty Sponsor Department
English, Black Studies
Faculty Sponsor
Maria Helena Lima
Funding Sources
None

264 • Adapting Black Culture Without the Black Experience

Bakhita Solenyanu

Abstract

This essay, written in Black Humanities, will explore the challenges of cultural appropriation and the Black experience while drawing upon the works of *The 1619 Project* by Nicole Hannah-Jones. It is widely known that American culture significantly draws from Black culture. While many embrace and celebrate many aspects of Black culture, there is often a tendency to overlook the persistent challenges of racism, injustices, and discrimination that many Black Americans face. This selective acknowledgment of Black culture, but not the understanding of the Black experience fails to address the complex realities that many face.

Subject Category

Arts and Humanities Categories: English

Special Topic Information

Faculty Sponsor Department

English, Black Studies

Faculty Sponsor

Maria Helena Lima

Funding Sources

None

289 • An Incomplete History

Samantha Pynn

Abstract

An Incomplete History is a research paper that highlights misconceptions about American history and how the educational system is not fully educating youth. Through a collection of sources, including *The 1619 Project,* this essay investigates how high school history classes only teach one side of American history. It dives into three major topics that are not fully covered in high school history classrooms such as, the phrase "Founding Fathers", where slavery took place, and efforts made by enslaved individuals. These topics are explored further while explaining how the lack of education and unwillingness to learn is allowing the cycle of oppression to continue.

Subject Category

Arts and Humanities Categories: Literary Arts

Faculty Sponsor Department

English, Black Studies

Faculty Sponsor

Maria Helena Lima

Funding Sources

None

3M: NEW DYNAMICS IN BIOLOGY AND BIOCHEMISTRY

4:30 - 5:45pm, Wednesday, 24th April, 2024, Welles 128

Session Chair

Josephine Reinhardt, Biology

228 • Effects of Meiotic Drive on Aggression in Male Stalk-Eyed Flies

Macy Pritchard

Abstract

Teleopsis dalmanni, better known as the stalk-eyed fly, is native to Malaysia and best recognized by its namesake eyestalks. These stalks act as an important physiological component, being the site of sexual dimorphism between males

and females. While the dimorphism between males and females occurs naturally within this species, one of the causes of dimorphism between males is from meiotic drive. Meiotic drive is a selfish gene present on the X chromosome of some flies, representing itself via shorter eyestalks. Males can be categorized into two groups, standard ($X^{ST}Y$) males and sex-ratio/drive ($X^{SR}Y$) males. Due to their dimorphism, signs of sexual selection occur often, most commonly male-male competition to mate with females. Meiotic drive has been shown to have impacts on many of the diverse traits important for male sexual competition, including eye span and sperm competition. Due to the impacts on the fitness of sex-ratio males, sexual competition becomes even more important, therefore, we decided to test the hypothesis that there are differences in aggressive behaviors between drive and standard males. In order to test this, we decided to stage fights between males in order to score them for their behaviors and determine the role of meiotic drive on these behaviors.

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)

295 • Localizing Shh in Zebrafish Retinal Regeneration

Haley Coombs, Adrianna Licata, Skylar Morello

Abstract

Zebrafish are freshwater fish commonly used as model organisms for studying biological processes. They have several genes that are analogous to humans, making them valuable when studying biological processes associated with developmental biology in humans (Why use the Zebrafish in research?, 2014). One characteristic of interest that can be observed through genetic screening is the ability of the zebrafish to regenerate retinal tissue after cell damage or cell death (Bailey and Hyde, 2010). For future studies, following the genetic pathway that allows for retinal cell regrowth could potentially be investigated in mammals. It is currently known that the Sonic Hedgehog (Shh) pathway causes this regeneration to occur (Thomas, 2018). A particular gene of interest in this pathway is Ptch2, which kickstarts the development of new cells. This gene also allows the pathway to overexpress, which is what facilitates the differentiation of newly developed cells (Nuesslein-Volhard, 2000). The overall goal of the project is to probe this pathway and observe if the expression of Shh takes place in newly developed retinal tissue or neighboring cells. In situ hybridization will be used to localize the Shh pathway and observe its presence in specific retinal cells.

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)

171 • Dynamics of Malate Dehydrogenase Mutation and Enzyme Activity

Daniel Maskovsky, Wai Cheung Tung

Abstract

Malate dehydrogenase (MDH) is a crucial enzyme in cellular metabolism, present in organisms ranging from bacteria to humans. It converts malate to oxaloacetate during the citric acid cycle, a vital step in metabolism. In prokaryotic cells, MDH resides in the cytoplasm; in eukaryotic cells, it's found in the cytoplasm and mitochondria. Animals have MDH in organs like the liver, heart, and skeletal muscles. MDH is a model for studying protein folding and a biomarker for

various diseases. MDH catalyzes malate to oxaloacetate using NAD+/NADH as cofactors. The "flexible loop" region from residues 119-137 in watermelon glyoxysomal MDH (wgMDH) is critical for catalysis. Conserved arginines, like R124 and R130 within this loop, affect substrate binding and catalysis. This study aims to understand the significance of other wgMDH loop residues. We created wgMDH mutants P119W and K135Q through site-directed mutagenesis and mutants including M128A/Q, K125Q, R124A, R125Q, D131L, D132N were obtained from our collaborators at the University of San Diego. WT and mutant wgMDH proteins were induced by IPTG and purified via Nickel affinity chromatography. SDS-PAGE determined purity, while concentrations were assessed using Bradford assays. Specific activities and Michaelis Menten kinetics were determined using stop assays. PyMOL analyzed wgMDH mutant structures to understand their effects on kinetics compared to WT-MDH. For M128A, PyMOL showed adjacent loop region residue shifts due to smaller alanine. We hypothesized this mutation would increase KM when compared to WT-MDH. Initial data includes WT, M128A, R14Q, and D131L mutants, showing several fold KM increases from WT.

Subject Category

Science and Mathematics Categories: Biochemistry

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, Geneseo Foundation Student Research Assistantship

337 • Retinal Regeneration and Development of Zebrafish regarding Chromatin Assembly Factor 1B (Chaf1b)

Stephen Welsch, Zachary Gilly, Dan Coffey

Abstract

Zebrafish possess the ability to regenerate body parts such as the heart, fins, pancreas, brain, spinal cord, kidneys, and retina (U.S. Department of Health and Human Services, 2020). When zebrafish retinal damage occurs, “neuron support cells called Müller glia, start dividing to create neuronal precursor cells, which go on to become replacement retinal neurons (U.S. Department of Health and Human Services, 2020).” This allows healthy wild genotype zebrafish to recover from retinal damage. However, some mutant genotype zebrafish cannot fully develop and regenerate retinal cells. In particular the good effort mutant (gef), “is characterized by a period of normal development, followed by rapid cell death in highly proliferative developing tissues, including the retina, brain, and pectoral fins 2dpf (Bailey & Hyde, 2014).” The gef mutant retinal cells appear unaffected until roughly the 2dpf stage, “this suggests a requirement for Chaf1b in the switch from cycling retinal progenitor cells to post-mitotic differentiating cells (Bailey & Hyde, 2014).” Chaf1b is a subunit of the chromatin assembly factor (CAF1) complex, which is responsible for assembly of histones at the replication fork during S phase of cell reproduction (Voylk et al., 2018). The goal of this experiment is to better understand Chaf1b pathways, and ideally use these discoveries to aid humans in dealing with retinal health issues. To properly determine Chaf-1b’s relation to the gef mutant, the protein must first be isolated and evaluated in both mutant and wild-type genotypes. To isolate the Chaf-1b, the anti-Chaf1b antibody’s ability to bind only to the Chaf1b must first be validated.

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)

3N: HISTORY OF MATHEMATICS

4:30 - 5:45pm, Wednesday, 24th April, 2024, Welles 131
Session Chair
Jeff Johannes, Mathematics

117 • The Nature of Natural Numbers

Lukas Spears
Abstract
The natural numbers are quite familiar, but if you were tasked with describing these numbers without circularly mentioning any preexisting notions about counting, next, or addition (or any numerical concepts, for that matter), could you do it? In the 19th century, mathematicians were on a quest to put all of mathematics on a solid logical foundation, and in 1889 Giuseppe Peano set out to define the natural numbers only in terms of fundamental logic (axioms). In doing so, Peano not only revealed what it means to be a natural number, but also that the idea of "next" can be simplified into more rudimentary concepts.
Subject Category
Science and Mathematics Categories: Mathematics
Faculty Sponsor Department
Mathematics
Faculty Sponsor
Jeff Johannes
Funding Sources
None

119 • Strategic Moves: Unraveling the History of Game Theory

Marissa Terry
Abstract
This paper explores game theory, which helps us understand how people make strategic decisions. It starts by looking at where game theory came from, with John von Neumann being a key figure, and how John Nash further developed it with his idea of Nash equilibrium. We'll see examples of how game theory is used in different areas, like economics and politics. Also, it looks at why game theory became important in the mid-20th century, during a time of global tension and technological progress, showing how it helps us make sense of complex decisions people face. Ultimately, it highlights how game theory continues to be a crucial tool for understanding and analyzing complicated situations where choices matter.
Subject Category
Science and Mathematics Categories: Applied Mathematics
Faculty Sponsor Department
Mathematics
Faculty Sponsor
Jeff Johannes
Funding Sources
None

120 • The History of the Chi-Square Test for Independence

Rachel Turner
Abstract

We will focus on the chi-square tests. The chi-square test for independence is used to determine if two categorical variables are independent. This paper dives into the history surrounding it, mainly throughout the early 1900s.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Jeff Johannes

Funding Sources

None

121 • Does Non-Uniform Convergence Make MR Images Unreliable?

Sam Conrow

Abstract

Fourier series are used to create MR images. In these Fourier series, there are oscillations at the jump discontinuities that can create noise in how the data is read. These oscillations demonstrate some consequences of nonuniform convergence. We will discuss these ideas in the presentation.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Jeff Johannes

Funding Sources

None

POSTER PRESENTATION SESSION

2:30-4:30pm, Wednesday, 24 April, 2024, MacVittie College Union Ballroom

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

ACADEMIC PLANNING AND ADVISING

317 • https://forms.gle/9nmRiKRWYesdfJNG7

Gavin Ackerman, Chase Moyer, Marisa Mazzacco, Kellen Gradwell

Abstract

Institutions of higher education are well aware that traditional classroom pedagogies (passive, "banking" models) are no longer effective teaching strategies (Ahmed and Rahman, 2022). In addition, another renowned organization claims that humanity classes benefit STEM students by helping them creatively reason and analyze different situations better (Tulane School of Professional Advancement). This project focuses on the SUNY Geneseo student's experiences in their classrooms, which are characterized by interactions between students and professors and retention of attention. We wanted to know if engagement - e.g., participation in classes, retaining of information, etc. is higher or lower in general education vs. major required courses and if the utilization of place-based learning strategies in the general education courses would help students be more engaged. To measure this, we aim to conduct a survey: measuring the disparity of STEM vs humanities majors and personal feelings on engagement, interest, difficulty, recollection, and motivation in major versus non-major classes. We expect the difference in majors to be a relatively even split and feelings on engagement in non-major classes to be lower due to preliminary questions asked to the student body. Hopefully, by bringing subject matters closer to home with our presentation, we see better statistics on the retention of information and engagement in non-major classes.

Subject Category

School of Education Categories: Adolescence Education: Biology and General Education

Faculty Sponsor Department

Academic Planning and Advising

Faculty Sponsor

Meg Reitz

Funding Sources

None

299 • Noticing and Supporting the Mental Health of Student Athletes

Marissa Stevens, Alexis Lamm

Abstract

“The mental health of student-athletes can sometimes be overlooked because they (we?) have fundamentally different stressors and therefore need from non-NCAA student-athletes. According to Watson, “Researchers investigating the developmental needs of student-athletes have suggested that approximately 10 percent of American college student-athletes are dealing with issues significant enough to warrant the need for psychological services as a result of their role as student and athlete (Ferrante, Etzel, & Lantz, 1996; Hinkle, 1994; Parham, 1993). Our project aims to advocate for the mental health of student-athletes by identifying their unique mental health needs and educating a broader campus audience. This study focuses on noticing signs of poor mental health in student-athletes and how to approach these situations. Picking up on these signs could be as simple as noticing a student-athlete become fatigued, less energized, struggling, etc. Student-athletes' mental health is very important to keep an eye on.”

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Academic Planning and Advising

Faculty Sponsor

Meg Reitz

Funding Sources

Our class

243 • Improving Study Spaces on Campus

Rachel Bibler, Anna Hansen, Emily Szczublewski

Abstract

Studying is a huge part of a college student's life and study spaces can make or break how well college students are able to study. This project explores the different study spaces around a college campus and why students find certain study spaces more effective for studying than others. We sent a survey to students to find out what makes an effective study space. This survey was completed by students who lived on campus as well as students who live off campus. Based on data collected from around the Geneseo campus, we find that the study spaces that have the highest rating are the ones that are the most convenient, i.e. dorm room or living areas, spaces that are the quietest, and have a relaxing environment. The most common distractions seem to be other people as well as technology. According to the survey that Geneseo students completed, study spaces could be improved by adding more comfort items, sound proofing these areas better, and adding more privacy.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Academic Planning and Advising

Faculty Sponsor

Meg Reitz

Funding Sources

None

266 • Accessible Paths up the Great Hill

Charlotte Alexander, Sierra Hazelmyer, Riley Cargain

Abstract

Geneseo's great mountain in the middle of campus is well known among its students. Each day, we trek up and down this hill and we may never think about what we would do if we weren't able-bodied and weren't able to walk it. This project is important because we want to be able to help the students and staff who struggle with walking up the hill. The steepest part of this hill is located just north of the College Union, where slopes can reach up to 13 degrees (for reference, ADA compliance is no more than 5 degrees. This creates barriers for students, faculty, employees, and community members. NYS college campus accessibility guidelines state "prohibits discrimination based on disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications." Since we can't remove the hill, we decided to identify the most efficient and accessible routes for students on campus to minimize sidewalk slopes over 5 degrees and map these routes. We will use our presentation time to show off these routes and explain why they are more accessible than the straight path up the hill.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Academic Planning and Advising

Faculty Sponsor

Meg Reitz

Funding Sources

None

ANTHROPOLOGY

7 • Oral Health Disparities in the API Community: The Impact of Parental Immigration Status on the Oral Health of their Children

Alyssa Lee

Abstract

The Asian and Pacific Islander (API) population remains inadequately researched within the healthcare system despite its continuous and rapid growth in the United States, primarily driven by immigration. Concentrated heavily in various urban and rural areas, the API population is one of the country's largest and fastest-growing racial groups.

This research explores oral health disparities among the API population in New York State through interviews with dental providers and individuals representing diverse API identities and backgrounds. It aims to investigate how immigration status and generational backgrounds influence the oral health outcomes of API children, recognizing the impact of parental and guardian supervision and influence on their children's oral health outcomes.

The results of this research project underscore the need for increased initiatives and awareness of the oral health needs of the API population. Furthermore, they highlight the importance of research and representation within healthcare systems to effectively address disparities of the API population in New York State and the broader United States.

Subject Category

Social Science Categories: Sociomedical Sciences

Special Topic Information

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Jesse Bia

This presentation will also be presented at:

SUNY Undergraduate Research Conference

Funding Sources

None

332 • Poverty, Institutionalization, and Mortality in 19th Century Rochester

Audrey Ryan

Abstract

In 1824, New York State passed the County Poorhouse Act, mandating that each county in the state build a poorhouse to house people who could not financially provide for themselves. Monroe County erected its poorhouse in 1826, and the Rochester Orphan Asylum— which took in some of the children from the poorhouse— was established eleven years later. Throughout the nineteenth century, these institutions housed the poor in Monroe County. The infrastructure of the poorhouse in particular quickly became overwhelmed by Rochester's growing poor population, and inadequate living conditions— like poor ventilation and overcrowding— made life there even more difficult. Using vital records and data from Mount Hope Cemetery's death records (available through the University of Rochester's Rush Rhees Library) and the Brighton Town Records (digitized by Richard Halsey for the NYGenWeb Project), this study will compare causes of death in the Monroe County Poorhouse and the Rochester Orphan Asylum against those of the general Rochester population for periods of the nineteenth century. This comparison is predicted to shed light on how the devastating impact of diseases can discriminate based on social and environmental factors like socioeconomic status and living conditions.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

Funding Sources

None

330 • Pervasive Nature of Lead on Human Development

Daniela Paolino

Abstract

Lead is a naturally occurring element, but at high concentrations can have adverse effects on maturation and development. It can be found in some paints, ceramic ware, candies, and even in plumbing. Once lead enters the body, it is carried through the bloodstream and is distributed into organs such as the brain, kidneys, liver, and bones. The body stores lead in the teeth and bones, where it continues to accumulate over time. Lead stored in bones may be released into the blood during pregnancy; for this reason, prenatal exposure is particularly detrimental to organogenesis. Duration, period, and transmission of exposure have proven to be pertinent to the ways in which lead is processed in the body; although effects vary, correlations have been found between blood lead levels over 45 µg/dL and stunted growth and impairment to brain and nervous system development. Various standards of measurement have been developed to gauge levels of lead concentration in specific areas of the body. Although concentration is measurable, the absorption and dispersal of lead throughout organ systems create complications in accurately detecting levels of severity. 80% of traditional clay pottery made in Mexico is layered with a glaze coating laced with lead. With little lead regulation, “lead-free” labels and listed ingredients often misrepresent the actual lead concentration. Research on lead incorporation in consumer products and developmental effects allows for an awareness of their ramifications, creating a push for stricter regulations and prevention of false advertising of products containing lead.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

Funding Sources

None

257 • The Cyclicality of Industrialization and Causes of Death in Rochester in the 19th and Early 20th Centuries

Morgan Dunn

Abstract

Rochester has been referred to as America’s first boomtown, thanks to contributions from the Erie Canal in the early parts of the 19th century. This new development sparked the catalyst for extreme industrialization in Rochester, with large factories being introduced in the city (i.e. Kodak). With rapid industrialization came coinciding health developments, much of the time with detrimental effects. Industrialization created a cycle that shaped the public health sphere. For example, industrialization caused the spread of more diseases, then industrialization helped to combat these diseases; industrialization led to more deaths by accidents, then industrialization helped to prevent these accident-based deaths. At the start of industrialization, most deaths were caused by Tuberculosis, which in part was caused by a lack of access to public health, cramped housing, and poor working conditions. As the 20th century approached, a larger emphasis was placed on public health access, prompting more hospitals to be established in Rochester, and more specialization in the realm of healthcare. However, industrialization also led to an increase in accident-based deaths, which in turn prompted more safety precautions implemented in the workplace, especially those with heavy machinery present. This presentation explores the patterns of public health/causes of death and the cyclical relationship of health and industrialization by using archival records of Mt Hope Cemetery, accessed through the Rush Rhees Library, University of Rochester.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

Funding Sources

None

309 • Fertility and Family Sizes in Early 19th Century Rochester

Gianna Chairmonte

Abstract

This study explores fertility rates and changes in family sizes in 19th century Rochester. Fertility rates have increased over time due to the advancements in medicine and overall technology, but women still tended to lose a third of their children due to a multitude of diseases causing the average number of children a family would have to change from about 13-8. Compared to the 20th Century, 19th Century fertility rates were much lower as people lacked proper health care like general medicine. Family sizes began a gradual decline in the 19th Century as urbanization and industrialization were developing rapidly. Our society shifted from small family farms to large industrial farms, the need for parents to have several children or more to work on a family's farm was slowly decreasing. As small family farms decreased, children still contributed to the family's economic wealth by working in factories as labor laws weren't enforced until the 1970's. Using death records from Mt. Hope Cemetery compiled from the Rush Rhees Library at the University of Rochester, (https://rbscp.lib.rochester.edu/3310) Rochester census records and Ancestry to look at women's birth records, examining the number of premature or still born births, the number of children women had and if those children lived to adulthood. I expect to find an overall decrease in family size in early 19th century Rochester due to socioeconomic factors like urbanization and social factors. It is expected to find a decline in fertility rates resulting from the lack of health infrastructure.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology

Faculty Sponsor

Kristi Krumrine

Funding Sources

None

13 • Evidence of Brucellosis in Skeletal Analyses of Adolescent Male from Vrina Plain

Gillyan Haynes

Abstract

Butrint is an archaeological site located within the Vrina Plain region of southern Albania which lies directly on the Mediterranean Sea. Since the site's establishment around the 10th century BCE, it has been inhabited by the Greeks, the Romans, the Byzantines, and the Venetians. At the perimeter of the site is a 2nd-6th century AD Graeco-Roman necropolis where forensic bioarchaeologists have excavated numerous skeletal remains, including that of an adolescent male, aged 13-15 years old who presented osteological evidence of brucellosis. Based on this conclusion, we were able to construct both the life and death of this individual.

Subject Category

Social Science Categories: Anthropology

Special Topic Information

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

Faculty Sponsor Department

Anthropology

Faculty Sponsor
Paul Pacheco
Funding Sources
None

BIOLOGY

175 • Incidence of Bacterial Symbionts in the Ant-mimicking Spider, *Myrmarachne formicaria*

Anna Schell, Brenna Dunn
Abstract
Myrmarachne formicaria (Salticidae), an ant-mimicking spider, is originally native to Eurasia; however, it has been sighted in parts of North America since 2001. Many arthropod species, including spiders, carry maternally inherited endosymbiont bacteria, some of which have reproductive effects on their hosts. While endosymbionts have been associated with some arachnids, we are unsure if *M. formicaria* hosts any of these bacteria. Other studies have shown that some arthropods have experienced a loss of associated endosymbiont bacteria upon colonization of new regions. Previous genetic work in our lab to learn about *M. formicaria's* introduction history found less mitochondrial DNA genetic diversity in samples from New York, Pennsylvania, and Ohio, suggesting their arrival in North America may have involved a single colonization event. The aim of this study was to survey North American *M. formicaria* for the presence of endosymbionts. This study involves extracting DNA from collected spiders and amplifying it with endosymbiont-specific primers to test for their presence. Our study also includes comparison of endosymbiont incidence between North American spiders and a limited sample of spiders collected in Europe. We focused on *Wolbachia, Cardinium* and *Rickettsia,* which are the most common endosymbionts found in related spiders. Our data suggest that *M. formicaria* carries *Wolbachia* and *Cardinium* endosymbionts. However, the presence of *Rickettsia* has not been confirmed. Understanding which endosymbionts are present will give further insight as to the effects they could have on the reproduction of *M. formicaria* as well as whether range expansion has consequences for endosymbiont incidence.
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 Meeting
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

179 • Nesting Patterns of Cavity-nesting Bees and Wasps

Daniel Lemon, Emma Parker, Carly Wick
Abstract
Cavity-nesting bees and wasps will lay eggs in hollow stems and other pre-made cavities and provision their larvae with food to overwinter until their emergence in spring. To observe the nesting patterns of these insects, we placed nesting boxes containing "bee tubes" made of hollow reeds in five locations around the SUNY Geneseo campus and photographed the tubes once a week over the summer as the tubes were gradually sealed off by insects to form larval cells. We took note of the type of material used to fill the tubes and then analyzed the trends in the phenology and site

preferences of the various fill types using the photographic record. We found that the tubes filled up mostly with mud (the most common fill type) early in the summer and with the leaf material and grass (especially in the grassy back meadow of the Arboretum) in the second half of the summer and into the fall. Over the winter we dissected the tubes to determine their inhabitants and found the pupae of Eumeninae (Potter Wasps) in the mud-filled tubes, Megachilidae (Leaf-Cutter Bees) in the leaf-filled tubes, and Sphecidae (Grass-Carrying Wasps) in the grass-filled tubes. We also observed dead, undeveloped larvae and various, seemingly taxa-specific parasites in some of the tubes. A greater understanding of the nesting patterns of these bees and wasps can aid researchers in monitoring these taxa through nest boxes and provide information that can assist in maintaining strong, reproducing populations of these important insect species.

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)

203 • Investigating Courtship, Display Behaviors, and Personality of Ant-Mimicking Spiders

Hannah Reid, Madison Bulkley

Abstract

The ant-mimicking spider *Myrmarachne formicaria* is a jumping spider (Salticidae) that recently arrived in North America from its native range in Eurasia. They mimic ants in appearance and behavior by moving their two front legs to imitate antennae. Our goal is to determine if these spiders exhibit consistent behavioral traits that can be identified as personality and if this personality relates to male display behavior and their success in courting. Many jumping spider species exhibit complex courtship displays to attract mates. When two *M. formicaria* males encounter each other they display by moving side-to-side while facing each other. Often this display ends with one of the spiders retreating while the other claims the new territory. We seek to determine if personality differences govern which spiders win in these duels. The spiders' behavior was assessed through a mirror assay, in which a spider was released into a runway with a mirror at the end and observed for 5 minutes. We measured the duration of time the male displayed toward the mirror; trials were repeated at least twice for each spider. In the field, males often establish shelters next to those of conspecifics which may not yet be mature. To determine whether males could distinguish between shelters belonging to males vs. females, we placed males in cages with an empty shelter and observed their behavior for 30 minutes. This study helps improve our understanding of the mating behavior of this species as well as the role of personality in its interactions.

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), Sorrell Chesin ’58 Research Award

146 • PCR Verification of Transgenic Zebrafish

Abigail Shafer, Zoe Coutu

Abstract

Our goal for this project is to verify that the Neurod4 trans gene in conjunction with the green fluorescent protein (GFP) genes were indeed passed down through generations of zebrafish from the original transgenesis conducted. In order to correctly genotype the zebrafish used for regenerative research in the Bailey lab, zebrafish DNA was extracted and isolated, then used in a polymerase chain reaction (PCR) analysis and subsequently run through gel electrophoresis. We are specifically amplifying the Neurod4 and GFP gene segments, the former being responsible for the regulation of neuronal development and differentiation, and the latter inducing zebrafish to glow under UV light. Using various polymerases purchased through the Geneseo TRAC Grant and multiple methods of experimentation, we have successfully created a new protocol for isolating the Neurod4 gene individually. Now, we are moving on to isolating the Neurod4 gene in conjunction with the GFP gene. These correctly genotyped zebrafish can then be used for further research in regenerative and developmental biology research by students in the Bailey lab.

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)

33 • Fluorescence In Situ Hybridization of Neurod4 Gene in Zebrafish

Juliana Flick, Katelyn Jacques, Brennan Wilcox

Abstract

Neurod4 is a protein coding gene, also known as neurogenic differentiation 4. This gene prevails within the nervous system, specifically expressed in the brain. Neurod4 helps control any extreme, rapid growth of the photoreceptors in Zebrafish retina. Zebrafish have a similar, yet not identical gene to humans, thus, research done with zebrafish can correlate to how Neurod4 impacts human retinal neuronal development. Zebrafish used in this study are transgenic organisms, containing the Tg (neurod4: GFP). Transgenes are sections of genetic material used for genome modification of specific organisms. Zebrafish were genetically manipulated to express Neurod4. It is assumed that the transgene will share similar activity as Neurod4 gene, the transgene displays the same transcript expression as the endogenous gene. For the transgene to be expressed, it is necessary to polymerase the RNA strand. If this were to work on Zebrafish, we could then do a similar experiment on humans.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

Funding Sources

None

275 • The Importance of Chaf-1b and p53 in Stimulating Apoptosis in Zebrafish Retina

Noe Stephens, Violet Vanguilder, Dhavan Brahmbhatt, Isabel Reitano-Stayer, Margaret Nwankpa

Abstract

Chromatin assembly factor-1b (Chaf-1b), one of the subunits of Chromatin assembly factor-1, is integral for retinal differentiation in both humans and zebrafish. Fisher et. al found that apoptosis was stimulated in cells that lacked Chaf-

1b at the S-phase checkpoint by the tumor suppressor gene p53 as cells that lacked Chaf-1b had a much higher expression of p53 than cells that contained Chaf-1b. Fisher et. al proposed the model that Chaf-1b is an inhibitor of p53 which stimulates apoptosis in the absence of Chaf-1b (2007). However, it is not known what occurs when both Chaf-1b and p53 are removed. If we were to remove both Chaf-1b and p53, we would expect that apoptosis would not occur in the embryo if the Fisher model were to be correct since although Chaf-1b is not present, there is no p53 to stimulate apoptosis. We will accomplish this goal by using good effort mutants that lack Chaf-1b and tp53/zdf1 mutants that lack p53; we will cross-section mutants that are both good effort and tp53/zdf1 to compare the amount of apoptosis, as labeled with TUNEL staining, with cross-sectioned good effort mutants. The good effort mutants will act as our positive control as apoptosis will be stimulated by p53 while the mutants that express both good effort and tp53/zdf1 will act as our experimental group.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

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

Faculty Sponsor Department

Biology

Faculty Sponsor

Travis Bailey

Funding Sources

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

129 • Exploring Zebrafish Eye Development by Forced Chaf-1b Expression

Olivia Hernick, Riya Shiggaon, Holly DeYoung, Abby Moziak

Abstract

Chaf-1b is a subunit of a protein complex that is strongly expressed in the eyes of developing zebrafish. In general, it aids in histone placement during chromatin assembly and DNA replication. In zebrafish, it is required for differentiation and cell cycle development in the retina (Fischer, 2007). Some zebrafish have a good effort (gef) mutation, resulting in the inability to make the Chaf1b protein. Therefore, cell death occurs about 3 days post fertilization (dpf) (Fischer). The mutant retina has normal development over the first 2 dpf but then fails to continue to grow normally beyond that. This is likely due to the maternal effect, or in other words, the fact that maternally deposited proteins remain and can rescue mutants for a few days (Fischer). We hypothesize that Chaf1b's sole function is histone loading during development. We will investigate this by conducting transgenesis and forcing Chaf1b gene expression just past five dpf. Currently, we are in the process of exploring gateway cloning as a way to force Chaf1b. Continuing on that note, if there are many more cells in the wild type than the mutant it can be understood that chaf1b plays a much larger role than histone placement, and is actually responsible for histone remodeling. If our hypothesis is rejected, the cells 5 dpf will still start to show some abnormalities such as altered function or cell damage. If our hypothesis is not rejected, the cells 5 dpf will resemble the wild type and be perfectly fine.

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)

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

Veronica Szygalowicz, Muwafaq Ibrahim

Abstract

A remarkable feature of Zebrafish, not found in mammals, is their ability to regenerate their retinal cells. Even during the later stages of development in adulthood, this ability does not waiver. After sustaining damage to the retina, Humans are unable to recover, which makes studying the mechanism of Zebrafish regeneration of great importance and relevance. Understanding the differences could help further advances toward discovering cures for blindness in Humans one day. The Hippo (Hpo) pathway is a signaling pathway in animals that ultimately controls the size of organs by either promoting or inhibiting cell division. Activation of the pathway leads to a downstream cascade that ends with the phosphorylation of the protein YAP and thereby turns into pYAP. YAP normally interacts with the nucleus and promotes cell division, therefore phosphorylation into pYAP will inhibit cell division. It's been identified that the Hpo pathway as a factor that prevents retinal regeneration in mammals. The aim of this study is to determine if the Hpo pathway is involved in Zebrafish retinal regeneration. The levels of YAP and pYAP were tracked throughout multiple different times of exposure to light damage with Immunohistochemistry procedures utilized to visualize the protein levels.

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)

252 • Long-Term Trends in Dominance of Mustard Hill Coral in San Salvador Reefs

George Amigdalos, Michaela Cawley, Ryan Ciccolini, Leila Doerrer

Abstract

Corals throughout the Caribbean have been declining in abundance for the past three decades, yet one stony coral species commonly known as Mustard Hill (Porites astreoides) has become more dominant. However, a recent study conducted in the Virgin Islands showed that Mustard Hill coral populations have declined. Our research team studied corals in previously surveyed reefs around San Salvador Island, The Bahamas, to determine the trajectory of Mustard Hill populations. Specifically, we wanted to know if the populations had changed since they were last studied in 2019. Data on coral species abundance and percent cover were collected at both Rocky Point and Telephone Poles patch reefs by photographing sections of 10 meter transect lines. Image analysis of percent cover using ImageJ software is underway. Our initial observations point toward a decline in Mustard Hill abundance, possibly due to the effect of widespread disease in these populations. However, other coral species may be experiencing similar losses. Once the results of our surveys are processed and analyzed, we will be able to compare our numbers to those in previous studies conducted to see how Mustard Hill populations are changing.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Isidro Bosch

Funding Sources

None

283 • Parrotfish Diversity and Abundance Across Reefs of San Salvador Island in The Bahamas

Jake Calus, Samantha Lewis, Carly Wick

Abstract

Parrotfish are important herbivores which keep algae from overgrowing coral animals in reefs across the world. Over the last 40 years, Caribbean and Bahamian coral reefs have experienced a significant shift toward algal dominance due to the emergence of fisheries and outbreaks of diseases that reduced herbivore populations. Meanwhile, the larger of the parrotfish species have become a popular food item in restaurants and significant declines in their populations could jeopardize the health of already impacted reef systems. Our research team studied parrotfish populations on various patch reefs and barrier reefs around San Salvador Island to compare the species composition of the parrotfish community in the different reefs and to determine if the larger parrotfish species had been depleted since the last surveys on San Salvador were carried out by Geneseo students in 2018. Our results showed that parrotfish abundance was higher in the barrier reefs than in the patch reefs, possibly due to the higher rugosity and complexity of the barrier habitats. Moreover, the largest parrotfish species were abundant, pointing to a lack of significant fishing effort in sparsely populated San Salvador Island.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Isidro Bosch

Funding Sources

Gerace Research Center

209 • High Microbial Infection Prevalence on Corals Jeopardizes Reef Health around San Salvador Island, The Bahamas

Micah Ford, Sophia Stang, Nicolette Faller, Kellen Gradwell

Abstract

Coral reefs host some of the most diverse ecosystems in the world, sustaining thousands of species of corals, fish, crustaceans, and other marine organisms. However, due to overfishing and climate change, coral reef health has been declining rapidly worldwide. One major contributor to coral mortality worldwide is coral disease, recently increasing especially in the Florida and Caribbean waters. Stony Coral Tissue Loss Disease (SCTLD), which was first identified in Florida in 2014, has rapidly spread into the Caribbean and poses the greatest present disease threat to corals in the Caribbean. We investigated coral disease rates in multiple shallow reef sites on San Salvador Island in the Bahamas, paying particular attention to SCTLD. Data collection involved placing ten meter transects along a reef and taking a video and photographs along the line, as well as general disease surveys of the area. The imaging was then analyzed to determine coral cover, coral type, disease cover, and disease type, compiling these results to find which diseases are most prevalent and if certain corals are more susceptible. SCTLD was highly prevalent among the corals of San Salvador and generally indiscriminate in the corals it affected.White Pox, Black Band, and White Band diseases were less prevalent but affected specific corals. The disease rate appears higher than it has been at these same study sites in previous years. This information is important to future management of newly established national parks designed to protect coral reefs around San Salvador Island.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Isidro Bosch

Funding Sources

None

80 • Investigating Reduction of the Ostrich Forelimb: Palaeognathae (Aves)

Isabel Marzec

Abstract

Palaeognathae is a group of flightless birds classified by the absence of the keeled sternum (breastbone) present in flighted birds. As they diverged from their flighted ancestors, 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. Among living paleognaths, most species exhibit extreme forelimb reduction, such as that seen in the ostrich (Struthio camelus). This study investigates the variation between S. camelus individuals to provide clues as to which behaviors and environmental pressures may have contributed most to forelimb morphology. Differences in the forelimb elements of males and females, indicating sexual dimorphism in the wing, would suggest variation results from sex-specific functions such as mating displays. Comparison between captive and wild populations could show variation resulting from presence of competition, predation, and other environmental factors. Using geometric morphometric software principal component (PC) data was analyzed to investigate variation between forelimb elements and test adherence to the hypothesized pattern of limb reduction in which reduction occurs distal to proximal. The aim of this project is to investigate the current variation in morphology of the palaeognath taxa using geometric morphometrics, which quantifies the shape of the bones. These methods will 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

Special Topic Information

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

Faculty Sponsor Department

Biology

Faculty Sponsor

Sara Burch

Funding Sources

None

232 • Use of 3-D Models and Muscle Moment Arms to Determine the Function and Evolution of *Tyrannosaurus rex* Forelimbs

Kurt Schirrmacher

Abstract

By utilizing 3-D computer models, it is possible to use the information to reconstruct the musculature of *Tyrannosaurus rex*. In this study, we obtained laser scans of a nearly complete set of *T. rex* forelimb bones from the Field Museum. We imported these scans into the software “Maya” (Autodesk) and articulated the separate bones to form the forelimb and created joints around which the bones can move. Then, we imported this model into another software, “OpenSim” (Stanford), where we created muscles as lines, and made sure they interacted properly by creating “via points” and “wrapping surfaces.” Muscle moment arms were automatically calculated, which roughly correlate with the amount of torque a muscle can produce over a joint. The moment arms for all the muscles around a joint were summed, normalized, and graphed, showing the most efficient angles for bones, which indicates function. Multiple hypotheses were collected to determine feasibility with our dataset. So far, it has been determined that muscles affecting shoulder abduction, flexion, and rotation functioned most efficiently agonistically. Highly positive abduction and flexion and highly negative rotation angles were most efficient. The data were compared with a *Guanlong* model, a basal tyrannosaur, to determine how moment arms evolved in the clade.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Biology and Geological Sciences

Faculty Sponsor

Sara Burch and Jeffrey Over

This presentation will also be presented at:

Society of Vertebrate Paleontology 2024

Funding Sources

None

130 • Invasive Fish Feed on Native Aquatic Species in Conesus Lake

Angelina Batista, Jake Calus, Griffin Meyer, Ledis Coronna

Abstract

Invasive species have major impacts on the dynamics of local ecosystems because the environment is not meant to handle the pressure they introduce to the system. One such species is the European rudd (Scardinius erythrophthalmus, Family Cyprinida), a fish which was introduced from Europe into Conesus Lake and its connected waterways. Before starting this study, we hoped to learn how rudd affect the ecosystems of Conesus Lake. To understand their feeding, we dissected rudd stomachs and analyzed the contents. From this analysis, we can observe what the rudd have been consuming in Conesus Lake, and therefore which species are most greatly impacted. We have observed considerable diversity in the stomach contents we have dissected. The vast majority of the stomach contents are either branched or filamentous algae. A variety of invertebrates, such as midge larvae and other arthropods, have been found in rudd stomachs. We believe that some specimens have consumed fish scales and body parts, suggesting that rudd are preying on smaller fish in Conesus Lake. We also found evidence of microplastics in the stomachs of some individuals, with observations of what we believe to be synthetic fibers and broken down plastic shards. Knowing which species are in the most danger means we can prioritize certain conservation efforts. Better understanding the ecological impact of rudd can also help create better management plans for mitigating the impacts of other local 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

New York State Department of Environmental Conservation

138 • Feeding Morphology of Deep-Sea Fishes

Tristin Rose-Morley, Emily Spina, Stephanie Billharz, Emily Wynne

Abstract

Deep-sea fishes have a variety of skull forms, or morphologies, that correspond to their feeding type. Suction feeders expand their mouths to suck in prey, while biters have large teeth to capture and tear into prey. Many fishes have a second set of jaws, the pharyngeal jaw, in the back of the throat to help ingest and process their catch. We are investigating suction-feeding and biting morphologies to determine if the depth of the fishes' habitat influences the feeding diversity of deep-sea fishes. To find our results, we measured eight fish skulls from the Synaphobranchidae, Macrouridae, Ipnopidae, Ophidiidae, and Liparidae families to analyze the structures that pertain to feeding. Measurements were done using micro-computed tomography (micro-CT) scans of fish heads and the software 3D Slicer. The fish determined to be suction feeders were found in depths ranging from 200 meters to 8,300 meters. Fish determined to be biters were found in depths ranging from 90 meters to 7,500 meters. Due to the lever mechanics of a suction-feeder's jaw, these fishes can catch their prey faster than biters. While many fishes appear similar from the outside, they have many feeding adaptations that help them survive in the deep sea.

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
National Science Foundation

225 • Can You Hear Me Now? Comparing Acoustic Niches of Cricket Species at Two Geneseo Field Sites

Bryan Armpriest, Sophie Macaluso, Katelyn Stancliffe
Abstract
Environments with a variety of niches can support a wider diversity of animals. The acoustic niche hypothesis suggests that insects may divide a sound environment by frequency or timing into niches allowing for the coexistence of multiple species. One non-invasive way to sample insect populations is to record acoustic signals used by these animals. Acoustic recordings gathered from two local grasslands during September 2019. Previous analysis showed three species: Sphagnum Ground Cricket (Neonemobius palustris), Carolina Ground Cricket (Eunembius carolinus), and the Striped Ground Cricket (Allonemobius fasciatus) divided the soundscape into distinct niches. Our current analysis assesses the same species at a new site to see if the pattern holds. We expect to see alterations in their calling behavior to avoid call masking through shifting temporal patterns, or using frequency niche partitioning to communicate within their species. We used Raven Pro software to analyze the first two minutes of recordings made between three pm and midnight. For each recording, we determined an index of chorus size of each species identified based on the criteria in the Wisconsin Frog & Toad survey, as well as the frequency and length of calls. This research will expand our knowledge about how New York State species communicate and coexist in local grassland habitats.
Subject Category
Science and Mathematics Categories: Biology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Biology
Faculty Sponsor
Kristi Hannam
Funding Sources
None

223 • Monitoring Call Characteristics of Local Frog Populations

Micah Hosley, Anna Tessier
Abstract
The impacts of anthropogenic activity, including noise pollution, have been linked to a global decrease in amphibian species. Understanding how animals respond and adapt to human-created background noise can help us better manage noise as a threat. Male frogs produce species-specific vocalizations at breeding sites to attract mates. We are using Bioacoustics as a way to monitor the calling behaviors of frog species in the Genesee Valley. To answer this we are examining the behavioral calling responses of green frogs (Hylarana erythraea), a common New York species, to traffic noise and other variables such as temperature. We are assessing acoustic recordings collected in 2019 from three known frog breeding sites along I-390. We analyzed recordings from 10 pm, in May and June, at permanent ponds near the I390 where traffic noise was present in the recording. Using spectrograms in Raven Pro, we analyzed the frog's calling

behavior and characteristics of their calls, such as duration and frequency. We will be presenting bioacoustic data that will help define and explore the health of the populations of Green Frogs in these small ponds along I390 in order to determine how human-made traffic noise affects these populations.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Kristi Hannam

Funding Sources

None

202 • Comparing Ecosystem Services of Native and Non-native Trees on SUNY Geneseo's Campus

Abigail Miller, Ryan Ciccolini

Abstract

Trees provide ecosystem services, improve our environment, and provide monetary benefits. SUNY Geneseo is undergoing construction, including planting new trees. SUNY Geneseo's commitment to sustainability focuses on creating an ecologically, economically, and socially sound environment. These trees will add to the aesthetics of campus and improve ecosystem services. iTree Design simulates tree plantings, and models their benefits for a specified number of years both monetarily and as ecosystem benefits. Recently, 10 Celtis occidentalis (hackberry), 10 Nyssa sylvatica (black tupelo), and 15 Acer rubrum (red maple) were planted on campus. All trees measure 6.3 cm diameter at breast height (DBH), and have full sun exposure. Using iTree Design, we assessed their future contributions to canopy cover, avoiding stormwater runoff, air quality benefits, and atmospheric carbon dioxide (CO_2) sequestered over the next 25 years. Hackberries will add $106 of value, reducing 6,502 L of runoff, 27 kg of pollutants, and 1,672 kg of CO_2. Black tupelo will add $276 of value, removing 5,479 L of runoff, 19 kg of pollutants, and 4,898 kg of CO_2. Red maples will add $785 of value, preventing 4,562 L of runoff, 21 kg of pollutants, 15,025 kg of CO_2. Native trees are essential for ecosystem function, serving as host plants for Lepidoptera larvae, which are food for fledgling songbirds. These ecological benefits will be compared to an equal number of non-native species already growing on campus. Ecosystem service evaluations can provide evidence of benefits of investing in native trees.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Brian Hoven

Funding Sources

None

336 • Evaluating Ecosystem Services of Canopy Cover on SUNY Geneseo's Campus

Ryan Ciccolini, Abigail Miller

Abstract

Ecosystem services are life sustaining benefits provided by the environment. Canopy cover composition dictates ecosystem services supplied by a specific landscape. SUNY Geneseo is committed to creating a sustainable campus and maintaining the ethical stewardship of our natural and social environment. Understanding how ground cover influences

ecosystem services is an important step to evaluating how our managed environment influences sustainability goals. iTree Canopy was used to evaluate canopy cover classes including tree, herbaceous, and bare ground, for SUNY Geneseo's campus. Using historical imagery in Google Earth Pro we were able to compare canopy cover from 2002 with the most recent satellite data from 2021. This study assessed ecosystem services including carbon sequestration, air purification, and runoff prevention, as well as assigning monetary value to those services. Based upon 2021 imaging, sequestered and stored carbon in trees is equivalent to 6,939 tons or $10,088 in environmental mitigation. Air pollution mitigated is equal to 2,783 lbs of greenhouse gasses or $201 in damage avoided. Finally the avoided runoff is estimated at 28.51 Kgal or $255. The top three cover classes by percentage cover in 2021 are grass/herbaceous at 36.99%, tree/shrub at 25.11%, and impervious road at 18.72%. The results will be compared to other landscapes of similar size and level of development. This research can contribute to a broader understanding of canopy cover influence on sustainable land management. Furthermore, it can inform how SUNY Geneseo canopy cover compares to comparable landscapes.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Biology

Faculty Sponsor

Brian Hoven

Funding Sources

None

42 • Importance of Domain 6a in R2Bm Binding Upstream of Target DNA

Abbey Hanes, Sam Dumitrescu

Abstract

Long Interspersed Elements (LINEs) are retrotransposons found in almost all eukaryotic genomes. LINEs make up 17% of the human genome and although most are inactive, active LINEs can occasionally be responsible for diseases such as cancer, hemophilia, and muscular dystrophy. LINES insert into the host genome by two rounds of target primed DNA synthesis: Target Primed Reverse Transcription (TPRT) followed by target primed second-strand DNA synthesis (2). The biochemical aspects of LINE insertion have been most extensively worked out for Restriction Like Endonuclease (RLE)-LINEs, using the R2 element from Bombyx mori (R2Bm). R2 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 IIs restriction-like endonuclease (RLE) towards the C-terminal end (2, 3). The element's protein binds to conserved regions of its own RNA. The 5' and 3' Protein Binding Motif (PBM) RNAs drive conformation changes of the R2 protein and of the integration complex. Biochemical studies, as well as a recent cryo-electron microscopy study, show that upstream binding is mediated via the ZnF, Myb and domain 6a (4). In this study, we use in vitro reactions with mutant R2 proteins to extend these earlier studies and focus on the importance of domain 6a in target recognition in the presence of 3' PBM RNA. Our data indicate that the protein DNA interaction surface mediated by domain 6a is able to withstand the loss of several of the phosphate contacts and still function.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Biology

Faculty Sponsor

Varuni Jamburuthugoda

This presentation will also be presented at:

American Society for Biochemistry and Molecular Biology Discover BMB 2024

Funding Sources

Sorrell Chesin '58 Research Award, NSF Grant

383 • Dynamics of Malate Dehydrogenase Mutation and Enzyme Activity

Daniel Maskovsky, Wai Cheung Tung

Abstract

Malate dehydrogenase (MDH) is a crucial enzyme in cellular metabolism, present in organisms ranging from bacteria to humans. It converts malate to oxaloacetate during the citric acid cycle, a vital step in metabolism. In prokaryotic cells, MDH resides in the cytoplasm; in eukaryotic cells, it's found in the cytoplasm and mitochondria. Animals have MDH in organs like the liver, heart, and skeletal muscles. MDH is a model for studying protein folding and a biomarker for various diseases. MDH catalyzes malate to oxaloacetate using NAD+/NADH as cofactors. The "flexible loop" region from residues 119-137 in watermelon glyoxysomal MDH (wgMDH) is critical for catalysis. Conserved arginines, like R124 and R130 within this loop, affect substrate binding and catalysis. This study aims to understand the significance of other wgMDH loop residues. We created wgMDH mutants P119W and K135Q through site-directed mutagenesis and mutants including M128A/Q, K125Q, R124A, R125Q, D131L, D132N were obtained from our collaborators at the University of San Diego. WT and mutant wgMDH proteins were induced by IPTG and purified via Nickel affinity chromatography. SDS-PAGE determined purity, while concentrations were assessed using Bradford assays. Specific activities and Michaelis Menten kinetics were determined using stop assays. PyMOL analyzed wgMDH mutant structures to understand their effects on kinetics compared to WT-MDH. For M128A, PyMOL showed adjacent loop region residue shifts due to smaller alanine. We hypothesized this mutation would increase KM when compared to WT-MDH. Initial data includes WT, M128A, R14Q, and D131L mutants, showing several fold KM increases from WT.

Subject Category

Science and Mathematics Categories: Biochemistry

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), Geneseo Foundation Student Research Assistantship, Sorrell Chesin ’58 Research Award

152 • Clobetasol Differentially Affects the Vulvar Cancer Cell Line, UMSCV-4, Causing both Increases in Apoptosis while Maintaining a Subpopulation in Quiescence

Mack Ogden, Gianna Minnuto, Kia Haering, Luke North

Abstract

Vulvar cancer is a rare but aggressive form of cancer that remains understudied. Our results show that treatment of the vulvar cancer cell line, UMSCV-4, with the glucocorticoid, clobetasol, increases apoptosis. Clobetasol is often used to treat a common inflammatory disease of the vulva known as vulvar lichen sclerosus (VLS) and up to 65% of vulvar carcinomas arise in the background of VLS. This would indicate clobetasol may also decrease the progression of vulvar cancer, if our observations reflect what is happening in vivo. However, our studies also show that apoptosis is not universal for the clobetasol treated UMSCV-4 cells. A subpopulation appears to enter a state of quiescence as evidenced by the return of some of the cells to normal cell proliferation upon removal of clobetasol. We previously showed that p27Kip1 is upregulated in the clobetasol treated cells. Cells that were incubated in clobetasol for three months and then removed from clobetasol (UMSCV-4 LT), allowing them to reenter the cell cycle, no longer expressed high levels of p27Kip1 upon re-exposure to clobetasol. We are now examining the differential phosphorylation states of p27Kip1 in the untreated and treated cells as well as identifying other genes important to clobetasol induced quiescence using RNAseq.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

Faculty Sponsor Department

Biology

Faculty Sponsor

Jani Lewis

This presentation will also be presented at:

American Association for Cancer Research Annual Meeting 2024

Funding Sources

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

156 • Morphological Changes to the Vulvar Squamous Carcinoma Cell Line, A431, Resulting from Clobetasol-induced Upregulation of Vimentin

Kia Haering, Nicole Mathewson

Abstract

Vimentin is recognized as an important marker in the epithelial-mesenchymal transition (EMT) of several cancer cell types. The overexpression of vimentin appears to coincide with increased tumor growth, migration, and poor prognosis. The vulvar cancer cell line, A431, is of squamous cell origin and displays hallmarks of a squamous cell including expression of cytokeratins 8 and 18 as well as E- and P-cadherin. We have found that treatment of A431 cells with the glucocorticoid, clobetasol, results in upregulation of vimentin which is accompanied by changing to a more mesenchymal-like morphology. Despite this change in morphology, the cells continue to express cytokeratins 8 and 18. This suggests that the vimentin has a greater impact on cell morphology than does cytokeratins 8 and 18. However, we previously reported that the analogous glucocorticoid, dexamethasone, also downregulates E- and P-cadherin in these cells which may account for the observed change in morphology. Here we examine more closely the impact of vimentin on cellular morphology in the clobetasol treated A431 cells by both immunofluorescence microscopy and Raman imaging.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Biology and Chemistry

Faculty Sponsor

Jani Lewis and Kazushige Yokoyama

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American Association for Cancer Research Annual Meeting 2024

Funding Sources

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

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

Dana Schoeps, Taylor Stolberg

Abstract

The *Escherichia coli* genome contains 5-methylcytosine at CCWGG sites. In eukaryotes, the role of DNA methylation is an integral part of transcription regulation. However, the role of bacterial cytosine DNA methylation is less understood. To better understand the function of cytosine DNA methylation in bacteria, we challenged wild-type and cytosine DNA methylation mutant bacteria with antibacterial compounds to stimulate a stress response in bacteria. The novel DNA methylation inhibitor and antitumor drug, CM-272, demonstrated DNA demethylation induction and disrupting cell cycle progression in cancer cells. We treated *Escherichia coli* cells with CM-272 to block cytosine DNA methylation and measured bacterial growth. An impact of CM-272 on *E. coli* growth was not expected, as cytosine DNA methylation is not required for *E. coli* growth. However, CM-272 generated a ZOI in wild-type *Escherichia coli, E. coli* cytosine DNA methylation mutants, and *Bacillus subtilis,* in Kirby-Bauer disk diffusion assays demonstrating that CM-272 has

antimicrobial properties. MIC assays and growth curve experiments were performed to provide quantitative results for the impact of CM-272 on bacterial growth, and also indicate that CM-272 inhibits bacterial growth. Surprisingly, CM-272 blocked bacterial growth in *E. coli* strains that lack a cytosine DNA methylation pathway, indicating a novel, DNA methylation-independent mechanism of action. Currently, experiments are being performed to better understand the mechanism by which CM-272 inhibits growth in bacteria and this will provide insight into both the antimicrobial properties of CM-272 and the unknown role of bacterial cytosine DNA methylation.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

This presentation will also be presented at:

Discover BMB 2024

Funding Sources

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

127 • Analyzing CM-272 Properties using a Nanospectrometer and a Fluorescence Spectrometer

Kaitlyn Samsel, Kevin Militello

Abstract

CM-272 is a DNA methyltransferase inhibitor. Previous work in the Militello laboratory indicates that CM-272 has novel antibacterial properties. Unexpectedly, we have determined CM-272 fluoresces blue. The purpose of this project is to discover the absorbance, excitation, emission properties of CM-272 in order to take advantage of CM-272 for fluorescence applications. For all tests, readings were taken at multiple CM-272 concentrations to determine which concentration yields the best results. We found that the concentration yielding best results was with 10% CM-272. On an absorbance spectrum, 2 peaks were found at around 300 and 350 nanometers. Next, a fluorescence spectrometer was used to detect the excitation and emission. We suspected the emission would be at about 450 nm since the compound fluoresces blue. The emission value is 380 nm and the excitation value found is about 400 nm. The values found from these experiments can be used in future experiments when tracking CM-272 and will help to determine the mechanism of antibacterial action.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Kevin Militello

Funding Sources

None

229 • Analysis of KAP Survey Data and Biological Trends in Schistosomiasis Reinfections and Coinfections

Miranda Saynuk, Nora Whorton, David Marx, Tyler Dzuba

Abstract

Schistosomiasis is a neglected tropical disease (NTD) prevalent in tropical areas including Africa, South America, and the Caribbean. Our sample includes individuals, both male and female, ages 8-26 in a small community outside Accra,

Ghana. We have looked at two aspects of this disease that include biological data as well as Knowledge, Attitudes, and Practices (KAP) data. Due to the nature of Schistosoma mansoni and S. haematobium, reinfection is quite common as well as coinfection. Both of these phenomena might correlate with differences in severity of symptom presentation, as well as the quantity of eggs passed in urine and stool. Data was collected from blood, stool, and urine samples over the course of 6 years. Possible correlations between egg count and coinfection were found, where higher egg counts were found in individuals infected with both species. We also are presenting new data following the reclassification of quantitative data for longitudinal analysis. The KAP survey method produces quantitative and qualitative results that help us to determine the habitual and cultural practices that are known to increase an individual's risk of contracting the parasite. Our research aims to determine if there is a correlation between participation in high-risk behaviors and coinfection with the two species of schistosomes. The information provided by our analysis can be used to educate individuals in the community of practices that contribute to coinfection. We found that education initiatives do not necessarily correlate to a decrease in high-risk behaviors.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Susan Muench

Funding Sources

None

296 • MHC Class I Knockout in *Xenopus laevis* using CRISPR/Cas9 Genetic Editing

David Marx

Abstract

The immune system of the frog *Xenopus laevis* is similar to humans. MHC Class I is a critical molecule for the immune system of *Xenopus laevis*. It presents peptides to CD8 T-cells and the presentation of self-peptide fragments is vital to immune self-recognition. When MHC Class I presents non-self-peptide fragments, it causes CD8 T-cells to tightly bind and kill these cells. All cells express some level of MHC Class I as without it they are also targeted for destruction. The role this molecule plays in immune function and self-recognition is of particular interest in *Xenopus laevis* since tadpoles are immunocompetent yet have undetectable levels of MHC Class I protein (mRNA can be detected in different tissues). MHC Class I protein levels become detectable after metamorphosis in the adult frogs. We are interested to see if MHC Class I is critical for immune function in *Xenopus laevis* tadpoles and will investigate by knocking out the MHC Class I gene. To do this, we utilized the CRISPR/Cas9 gene editing tool. Cas9 creates a break in the dsDNA at the location of the gene by using specific guide RNAs, and while the cell attempts to fix its genome mutations can occur in the sequence that inactivates the gene. We generated transgenic embryos that have guide RNAs targeting the MHC class I gene. We have completed sequencing on samples looking at the alpha 2 region for deletions.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Hristina Nedelkovska

Funding Sources

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

346 • Evolutionary Genomics of Meiotic Drive in *T. whitei*

Ariana Cookinham, Jakob Pericak

Abstract

Meiotic drive violates the fundamental law of segregation, changing allele inheritance from 50% to 100% of the time. An extreme sex-ratio meiotic drive (SR) trait is an X-linked selfish genetic element (SGE) which causes the carrier males to produce mostly female offspring. The presence of this trait has been identified in two stalk-eyed fly species, Teleopsis whitei and Teleopsis dalmanni. In T. dalmanni, there are hundreds of differentially expressed genes, with virtually all gene expression and sequence differences confined to the X chromosome; however, this does not appear to be the case in T. whitei in which only a few meiotic drive-associated differences appear, some of which are on the autosomes. To pinpoint differences associated with drive, whole genome sequencing was done on 10 SR and 10 standard (ST) T. whitei males. There is not a genome for T. whitei so our sequencing reads are mapped to the T. dalmanni genome. We used the program ANGSD to identify single nucleotide polymorphisms (SNPs) in our sequencing data in order to identify differences between SR and ST males. We found that there was too much variation on the X chromosome indicated by many heterozygous SNPs which is not possible in nature. We used ngsParalog to identify sites on the genome that showed evidence of mismapping, possibly due to the different genome used. We will next use our filtered data to observe patterns of genetic variation across the autosomes and X chromosome and see what SNPs vary between SR and ST males.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Josephine Reinhardt

Funding Sources

None

307 • Effects of Meiotic Drive on Developing Testis in Stalk-Eyed Flies

Connor Willitt

Abstract

Teleopsis dalmanni, Malaysian stalk-eyed flies are a species of flies that exhibit sex ratio (SR) meiotic drive, a selfish X chromosome allele that violates Mendel's Law of Segregation. Drive prevents males from producing Y-bearing sperm, producing only female flies. Previous research has found six large inversions on the same region of the chromosome. In three regions of these inversions, an X-liked paralog for JASPer had high levels of expression and coverage compared to the standard (ST) X chromosome. JASPer is normally in association with JIL-1 protein to regulate the maintenance of euchromatin. The paralogs do not differ from the ST JASPer gene sequence but lack a binding domain for JIL-1, possibly causing dominant negative autoregulation. The regions were analyzed using PCR and gel electrophoresis, to determine which segment may contain replicate paralogs. In one segment we suspect a high level of replicate sequences that may be the cause of the drive, however this is not conclusive. The main goal of current research is to test when these replicate expression levels change. It is already known that flies with drive express higher levels of JASPer, however, it is not known when those levels are increased. The study hopes to answer the unknowns by dissecting male flies containing drive from different maturity levels. Then sequencing and analyzing the RNA from their testes, comparing it to the known expression levels of standard flies. This will help us understand when gene expression levels change during fly maturation.

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)

77 • Evaluating Scramblase Function of Anoctamin 3

Amanda DiMatteo, Tara Sweet

Abstract

Mutations in Anoctamin 3 (Ano3) are linked to cervical dystonia, a neuromuscular disorder. Ano3 belongs to a family of transmembrane proteins that most commonly function as lipid flipping scramblases and/or calcium-activated chloride channels. The molecular function of Ano3 is unclear. We hypothesize that Ano3 functions as a scramblase. To test this hypothesis, in part, we developed an Annexin assay to evaluate the channel's ability to flip lipids.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology and Psychology

Faculty Sponsor

Tara Sweet

This presentation will also be presented at:

Central New York Fish Meeting

Funding Sources

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

75 • Forest Dynamics Between Co-occurring Native and Invasive Species

Jessie Seifert, Alexis Ochs, Kathleen Lewis

Abstract

Invasive species can co-occur with native species, with varying effects on the community of native species. Invasive species may outcompete native species or have a facilitative effect. In our study, we focus on tree species of invaded forest communities. We applied a spatially-explicit, statistical model to analyze interspecific neighborhood competition in the Michigan Big Woods. This forest has a high density of invasive tree species and is being invaded by Japanese Barberry. We analyzed the interactions between invasive and native species using data from 2003, 2008, and 2014. We found that there was intraspecific competition among shagbark hickory, pignut hickory, and black oak, which are all native species of trees. Also, we found that there was not a substantial change in the effect of invasive species on the growth of native species, despite the spread of Japanese Barberry between 2003 and 2014. This suggests that adult trees can still acquire sufficient nutrients during invasion. By constructing graphs and maps of native and invasive species over time, we were able to detect changes in population age structure. Our findings indicate that most trees in the forest are mature, shown by their large diameters at breast height (DBH), with a limited presence of young trees. With the spread of Japanese Barberry, the change in age structure suggests that invasive species in this forest are inhibiting establishment of young trees, which has implications for forest regeneration. Understanding these impacts is important for understanding the implications of invasive species on a forest community.

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)

197 • Assessing Water Quality for Streams in Wyoming County, NY: Pollution, Erosion, and Biodiversity

Micah Ford

Abstract

Stream water quality affects not only the organisms that use the streams as habitat, but also human populations that benefit from the clean water, recreation, and other ecosystem services that streams provide. Characterizing spatial and temporal water quality patterns are critical to maintain and improve these ecosystem services. We have focused on the water quality of streams in Wyoming County, NY. We used data from the New York DEC's Department of Water Monitoring Data Portal to evaluate water quality. We found that water pollution in Wyoming County streams appears to be minimal, as indicated by water chemistry, heavy metals concentrations, and macroinvertebrate indicators. Overall, the water quality of Wyoming County's streams is high according to most parameters, though there were a few exceptions with regard to erosion. Several sites in the county have poor or marginal scores for bank stability, bank vegetation, and sediment deposition. Based on our findings, we are able to recommend specific sites for the Wyoming County Soil and Water Conservation District to prioritize. This approach of identifying specific sites with historical data can aid in identifying potential underlying anthropogenic problems to inform efficient distribution of resources to remediation efforts.

Subject Category

Science and Mathematics Categories: Biology

Special Topic Information

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)

20 • Investigating Spread Rates of Aquatic Invasive Plant Species in North America

Morgan LaDue, Katrina Shepard

Abstract

Aquatic invasive species have detrimental effects on the ecosystems of the Northeastern United States and Canada. Characterizing the patterns of invasion for aquatic invasive species can be important for making local management decisions to control them. We focused on Najas minor (Brittle Waternymph), Hydrilla verticillata (Hydrilla), and Nitellopsis obtusa (Starry Stonewort). To characterize their patterns of invasion, we first compiled occurrence records of N. minor, H. verticillata, and N. obtusa from the online databases GBIF, iDigBio, and iMapInvasives. We then used QGIS to estimate the ranges (in lake surface area), at different intervals of time, for each species since their arrival in North America. Finally, we calculated the spread rates and performed a linear regression analysis to compare them using the R Programming Environment. Our preliminary results showed that all three species have spread at the same rate. In addition, the range of H. verticillata is approximately 71.8 km2, while the ranges of N. minor and N. obtusa are roughly 20x and 60x that of H. verticillata, respectively. H. verticillata has been identified as a local problem by several municipalities and has had large removal efforts, potentially contributing to its smaller range, despite having the same spread rate as the other species. Rates of spread and ranges can inform patterns of invasion, which can be used to predict locations at risk of invasion and allow lake managers to implement prevention policies. Spread rates at areas of co-occurrence could be useful in future studies of invasional meltdown.

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)

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

Thomas Back
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. This study surveys the interactions between parasitising 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 late-season fruiting plants in forests adjacent to farm fields, at two separate farms. Preliminary results reveal that a majority of the larvae are found in a single species, Glossy Buckthorn (Frangula alnus Mill). The effect of species on the instance of parasitism was found to be the most influential factor that was assessed in this study. We discuss how effective management of pest species on farms may also need to include reducing the abundance of alternate host plants in neighboring 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 Conference
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

CHEMISTRY

176 • Pretreatment and Fiber Content Analysis of Cannabis Sativa L

Ariella Yonaty, Elizabeth Moriarity, Luke Genewick, Kaden Wheeler
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.), it is one of the fastest growing plants and its refined products have extensive commercial value, including biofuels, biodegradable plastics, textiles, dietary supplements, paper, clothing, and much more. Construction and manufacturing applications have also 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. Our research evaluates the pretreatment of hemp as well as 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

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Barnabas Gikonyo

This presentation will also be presented at:

American Chemical Society Spring 2024: Many Flavors of Chemisty

Funding Sources

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

125 • Bioethanol from Rice husks as a Second-Generation Biofuel: Glucose Quantification Using Dinitrosalicylic Acid Analysis

Gage Smith, Kyle Mele

Abstract

The preferred usage of fossil fuels over renewable energy sources has resulted in the extraneous release of greenhouse gasses into the atmosphere. Greenhouse gasses pollute the atmosphere and contribute significantly to the problem of global warming. As a result, alternative, renewable energy sources have become a central topic for discussion. Biomass is one of many alternatives. Biomass is a more environmentally friendly, renewable organic matter that can be used as fuel. Biofuels that use foods high in carbohydrates, including rice, bread, potatoes, and other crops, are often referred to as first-generation biofuels. However, the problem with first-generation biofuels is that they take away a food source and increase global food prices. Therefore, research has turned to second-generation biofuels, which acquire ethanol from biomass as an alternative to first-generation biofuels. Second-generation biofuels are made from lignocellulose which composes the inedible part of a plant's cell wall composed of cellulose and lignin. This project centralizes utilizing one of the most abundant and readily available biomasses, rice husks. The main objective of this research project is to determine if rice husks are an efficient biofuel. This is determined by converting the rice husk into biofuel using the ionic liquid, known as 1-Butyl-3-methylimidazolium chloride, and quantifying the amount of glucose obtained from this process through the use of dinitrosalicylic acid analysis (DNS), glucose refractometry, and ultraviolet-visible spectroscopy. The greater the amount of glucose in the samples, the more ethanol that can be produced via fermentation to be used as fuel.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Barnabas Gikonyo

This presentation will also be presented at:

American Chemical Society Regional Rochester Meeting

Funding Sources

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

251 • Bone Fracture Repair: Analysis of Mechanical Strength and Porosity Properties of Biocompatible Collagen Cements

Owen Vincent, Walker Pedinotti, Milo Miller

Abstract
Calcium phosphate-based cements (CPCs) have been under investigation for use in setting and repairing bone fractures as a method to replace auto-grafting. Hydroxyapatite (HA) is a calcium phosphate mineral and the main mineral component of bone, making it a suitable basis for biocompatible cements. HA cements alone however lack mechanical strength and the porosity required for osteocyte ingrowth and proliferation. In this study, we examine the addition of a protein polymer collagen on the mechanical strength and pore structure of a HA-based CPC via measurements of shear strength and compressive strength, as well as scanning electron microscopy. The study is an ongoing investigation, and the data obtain thus far is presented and discussed.

Subject Category
Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department
Chemistry

Faculty Sponsor
Barnabas Gikonyo

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

2 • Biodiesel Production from *Chlorella Vulgaris* and *Synechococcus*

Sarah Mertson, Elizabeth Klosko, Daniel Bergman, Alex Wilkinson, Nicole Gretzinger, Colden Grossman, Annabel Rupp, Kjersti Mygland, Theodore Hovling

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 production, both of which were made more efficient through means of culturing the algae in different media and by evaluating the biodiesel produced via IR spectroscopies. Synechococcus, a genus of cyanobacteria that grows prolifically in Conesus Lake, may be an even better source of fuel than C. vulgaris because it grows at a rate nearly twice as fast and is known to be a strong carbon sequester. (This species has not yet been specified, but is believed to be of the vulcanococcus species.) Growth of Synechococcus was observed in a variety of media and it was determined that BG-11 fosters the most prolific growth. Synechococcus phospholipids will be extracted from dead cells and converted into biodiesel using a transesterification process. Finally, we will compare our results from Synechococcus with previous studies on C. vulgaris to determine which organism is the better source of biodiesel.

Subject Category
Science and Mathematics Categories: Chemistry

Special Topic Information
The environment and/or sustainability

Faculty Sponsor Department
Chemistry

Faculty Sponsor
Barnabas Gikonyo

This presentation will also be presented at:
American Chemistry Society National Conference in New Orleans, Louisiana

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

12 • Growth of *Synechococcus* in Varying Nutrient Concentrations

Sarah Mertson, Nicole Gretzinger

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 production, both of which were made more efficient through means of culturing the algae in different media and by evaluating the biodiesel produced via IR spectroscopies. Synechococcus, a genus of cyanobacteria that grows prolifically in Conesus Lake, may be an even better source of fuel than C. vulgaris because it grows at a rate nearly twice as fast and is known to be a strong carbon sequester. (This species has not yet been specified, but is believed to be of the vulcanococcus species.) With increased inputs of Nitrogen and Phosphorus into lakes from agricultural runoff, the growth of Synechococcus was tested with added nutrients in BG-11 media. Synechococcus yield will be compared to previous growth studies. Finally, we will compare our results from the added nutrient trials to Synechococcus grown in other media and algae to determine which produces the most yield, which correlates to more biodiesels.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Barnabas Gikonyo

Funding Sources

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

219 • Green Synthesis of 1,3-Benzoxazines

David Marx

Abstract

Benzoxazines are a group of bicyclic heterocyclic compounds that can be found in pharmaceutical drugs and can be used to form polymers that can be used as adhesives or in plastics. Our hope is to form larger 1,3-benzoxazines with aromatic substituents with a green synthesis method. The standard 1,3-benzoxazine can be generated using the mannich reaction with phenol, an amine, and formaldehyde. Due to the bioactive properties of many benzoxazines there are many potential uses for the compounds we synthesize (i.e antibacterial, antifungicidal, anti-insecticidal). We use a mannich reaction mechanism as well first combining a salicylaldehyde with a primary amine to form an imine. The imine is then reduced and combined with an aromatic aldehyde. Other versions of this synthesis utilize a TMSCl catalyst which is hazardous and damaging to the environment. Purification, spectrum analysis, and bioactivity tests are currently being done.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Eric Helms

Funding Sources

None

37 • Investigating Singly Substituted 2-amino-1,3,4-thiadiazoles as COVID-19 and Antibiotic Drug Candidates

Elizabeth Klosko, Margaret Hintz

Abstract

1,3,4-Thiadiazoles have shown promise as antibiotic agents, with many papers showing their efficacy against gram positive bacterial strains. However, synthetic methods for these compounds remain hazardous for the user and destructive towards the environment. Previous synthesis methods used ethanol and water as common solvents and various toxic oxidants like bromine, a highly corrosive substance. The solvents are both biodegradable and relatively safe solvents; however, the reaction needed to be heated. To make the synthesis of 1,3,4-thiadiazoles more green, we changed solvents to ethyl lactate and water, biodegradable solvents that do not need heating for the reaction to run. Additionally, we used the oxidant pyridinium tribromide, a less hazardous oxidant than bromine. Using thiosemicarbazide HCl and a variety of substituted benzaldehydes, we synthesized thiosemicarbazones, then the aryl substituted 1,3,4-thiadiazoles. Structures for these compounds were confirmed by infrared spectroscopy and nuclear magnetic resonance. Finally, each of the compounds will be tested for antibacterial activity against Staphylococcus epidermidis. Additionally, each will be tested against COVID-19 to see if they can inhibit the binding interaction between the SARS-CoV-2 (COVID-19) receptor binding domain and the ACE2 receptor on human cells.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Eric Helms

Funding Sources

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

241 • Exploring the Synthesis of Maleanilic Acids in Bioderived, Biodegradable Solvents

Emily Rennells, Emily Fitzpatrick

Abstract

A variety of maleanilic acids with different functional groups have been synthesized using green chemistry methods. In the past, maleanilic acids use solvents that are harmful to the environment such as toluene and benzene. Our research is experimenting with green solvents and reaction methods following the twelve principles of green chemistry. The solvent proven to be the most successful is ethyl lactate and is known to be renewable. The overall goal of this synthesis is to produce a final product of maleimides using the maleanilic acids. Maleimides have anti-bacterial, anti-tumor and anti-parasitic properties and are often used in polymers. Different conditions have been changed to optimize the reaction such as catalysts, low heat and different solvents.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Eric Helms

This presentation will also be presented at:

Northeast Regional American Chemical Society Conference

Funding Sources

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

185 • Green Synthesis of 11H-Indeno[1,2-b]quinoxaline

Gianna Mantha

Abstract

The quinoxaline moiety is an important nitrogen heterocycle found in several different types of compounds, including therapeutic agents, organic dyes, electroluminescent materials, organic semiconductors, and thermoplastics. Typical syntheses of quinoxalines often involve high temperatures, toxic solvents, catalysts, and long reaction times. The synthesis of 11H-Indeno[1,2-b]quinoxaline was performed in our lab by reacting 1,2-indanedione with 1,2-phenylenediamine in ethyl lactate, a green solvent in the absence of any catalyst. Thin-layer chromatography indicated that the 1,2-indanedione completely reacted with the diamine, first beginning to form a precipitate within 30 minutes and completing the reaction within 60 minutes, giving 50 % yield. NMR analysis showed that we had formed the expected product in high purity. Our work demonstrates that ethyl lactate is a green alternative for the synthesis of 11H-Indeno[1,2-b]quinoxaline in good yield and high purity. Further work is underway to optimize the reaction conditions to improve yields and explore the use of green catalysts for this reaction.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Eric Helms

Funding Sources

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

89 • Thermodynamic and Structural Studies of the Interactions between c-MYC G4 DNA and Minor Groove Binders as an Anticancer Approach

Sameela Haidari, Courtney Fetzer, Xander Michaels, Ruel McKnight

Abstract

G-quadruplex (G4) DNA are non-canonical higher order structures formed from guanine rich sequences, consisting of stacked G-tetrads stabilized by non-Watson-Crick (Hoogsteen) base pairing. Early interests in G4 were spurred by the revelation that G4 is found in telomeric DNA sequences at the end of our chromosomes. These telomeric sequences were found to inhibit an enzyme overexpressed (>90%) in cancer cells, known as telomerase. Cancer cells require telomerase activity for survival and “immortality”, therefore stabilization of telomeric G4 can inhibit telomerase activity and prevent the survival of cancer cells. More recently, G4 has been shown to be overrepresented in the promoter regions of oncogenes (e.g., c-myc and ras). As a result, G4 represents a viable target for possible anti-cancer therapeutic agents to treat previously “undruggable” targets such as the c-myc and ras oncogenes. Most traditional approaches to targeting G4 have involved using compounds with planar frameworks that are expected to either stack on top, and/or intercalate between the G4 tetrads. However, there have been reports that groove binding compounds may also target G4. These compounds would be expected to lie within the grooves typically present in the G4 structure. In this work, G4 structures formed by c-myc were investigated by targeting it using four known duplex DNA minor groove binders (distamycin, DAPI, berenil, hoechst 33258). Using the biophysical techniques of isothermal titration calorimetry, fluorescent displacements assays and circular dichroism spectroscopy, the binding of these compounds to G4 DNA were investigated for their efficacy as an anticancer approach.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Ruel McKnight

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

184 • Analysis of Florescence Quenching in a Model Biosensing System

Logan Sargent

Abstract
Making biological sensors that are cheap, effective, fast and easy to use are important to the medical field in order to help doctors determine what kind of illness they may have. The fluorescence quenching of the dye molecule Fluorescein by Gold Nanoparticles was quantified using UV Vis and fluorescence spectroscopy. Several factors were looked at to see if they had an impact on the fluorescence quenching, some include the diameter of the nanoparticle, the length of the ligand attaching the dye molecule to the nanoparticle and the ratio of dye molecules to gold nanoparticle. From this information Stern-Volmer constants were constructed and it was found that as the size of the nanoparticle increases and as less dye is added to the solution, the quenching of the dye molecule increases.

Subject Category
Science and Mathematics Categories: Chemistry

Faculty Sponsor Department
Chemistry

Faculty Sponsor
Jeffrey Peterson

This presentation will also be presented at:
American Chemical Society

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

15 • Qualitative Analysis of Student Experiences in Novel Multi-Year CURE Curriculum

Madalyn Hymowitz, Emily Rennells, Emily Fitzpatrick

Abstract
A novel chemistry laboratory curriculum centered on course-based undergraduate research experiences (CUREs) has been developed at the State University of New York College at Geneseo, a primarily undergraduate institution. CUREs are introduced in students' first year laboratory experiences and are scaffolded in a multi-year sequence spanning a range of chemistry subdisciplines (general, organic, inorganic, capstone) throughout the 4-year curriculum. We present qualitative analysis of open-ended questions in post-course student survey responses, including reflections of the personal experiences of the student authors. Identified strengths (e.g. problem-solving, presentation skills and early experience with research) and weaknesses (e.g. failure to yield results and high stress situations) help inform the ongoing design and implementation of the CURE laboratory curriculum.
There have been four courses offered in major disciplines of chemistry (organic, inorganic, general, and capstone), each with their own unique CURE project, that students could take over the course of their degree. At the beginning and end of each course, an anonymous feedback form was sent out to students. They had the opportunity to discuss any techniques learned, if they would take another CURE-based course in the future, and any other pertinent feedback. This presentation will qualitatively analyze the responses and student perspectives on the efficacy of a CURE-based curriculum, including the personal experiences of the authors.

Subject Category
Science and Mathematics Categories: Chemistry

Faculty Sponsor Department
Chemistry

Faculty Sponsor
Jeffrey Peterson

This presentation will also be presented at:
Spring Conference of the American Chemical Society in New Orleans

Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)
National Science Foundation: NSF-IUSE (#2021281)

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

Ashley Felber, Sophia Altman, Mark Moroz, Kristen Eichlinger, Bryan Dileo, Molly O'Brien

Abstract
The issue of climate change has been gaining increased awareness and attention globally in recent years. It is having various impacts to 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 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. 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

Faculty Sponsor Department
Chemistry

Faculty Sponsor
Salvador Tarun

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

278 • Prevalence of the Toxicokinetic Nature of Per- and Polyfluoroalkyl Substances (PFAS) on Human Development

Daniela Paolino

Abstract
Per- and poly-fluoroalkyl substances (PFAS) were created in the 1930s with the desire to monopolize their durable hydrophobic nature, attained through the fluorine-carbon bonding in the alkyl chain, and was quickly utilized in innumerable consumer products (e.g: makeup, lotion, nonstick pans, food containers, carpets, and shampoos). It wasn't until 1970 when traces of PFAS were found in blood tests, that concerns about its ability to endure biodegradation started to arise. Today people are constantly exposed to PFAS chemicals, whether it be through dust build-up in their homes, the products they are consuming, or the water they drink. Its often unbeknownst prevalence has become progressively concerning, affecting not only those interacting with it directly, but also transmitting from one affected individual to another during prenatal development. Research suggests that the internal accumulation of PFAS chemicals will not only become a prominent factor in stunting development, but has also been linked to the suppression of lymphatic and antibody-responsive cells, and the degradation of various organs such as the liver, kidney, and thyroid.

Researchers are currently investigating means by which these “forever chemicals” can be broken down and analyzing the intricacies of their toxigenic nature, in order to create awareness and valid evidence towards the dismantling of PFAS in commercial use.

Subject Category
Science and Mathematics Categories: Biochemistry
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Salvador Tarun
Funding Sources
None

263 • 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

Morgan Comstock, Anastasia DeJesus, Micah Ford, Karina Mirza, Brianna Westlake

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
Science and Mathematics Categories: Biology
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Salvador Tarun
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

258 • Determining Structure Activity Relationships for Antibacterial Ruthenium(II)-arene Complexes

Brian Murphy, Trevor Bollinger

Abstract
Widespread use of antibiotics has led to an increased number of drug resistant strains which has necessitated the need for novel antimicrobial therapeutics. Metal based compounds open a new pathway of advancement, given their

structural flexibility and unique modes of action compared to their organic counterparts. Ruthenium(II)-arene complexes have been shown to have promising antibacterial activity. Specifically, a previous complex from our lab containing a Schiff base with an appended ferrocene was shown to have a minimum inhibitory concentration (MIC) of 16 μg mL^{-1} against methicillin-resistant *Staphylococcus aureus* (MRSA). The goal of this research is to further seek structure-activity relationships by modifying the scaffold of the lead candidate. The prepared novel compounds were tested against clinically relevant strains of bacteria including MRSA, to determine their respective MIC values. The results of this study will be discussed.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Michael Webb

This presentation will also be presented at:

American Chemical Society Spring 2024

Funding Sources

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

239 • Synthesis and Evaluation of Ruthenium-arene Complexes to Modulate the Aggregation of the Amyloid-β Peptide

Daniela Grimard, Ryan Hacker, Katie Morgan

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 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 Aβ and HSA was determined using isothermal titration calorimetry and 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

Faculty Sponsor

Michael Webb

This presentation will also be presented at:

American Chemistry Society Spring 2024

Funding Sources

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

168 • Ruthenium Complexes with Schiff-based Ligands that Modulate the Aggregation of the Amyloid-β Peptide

Zoe Connor, Madeleine Turton

Abstract

Amyloid-beta (Aβ) peptide aggregation is a primary characteristic of Alzheimer's disease, the most common neurodegenerative disorder. Aβ peptide aggregates have been observed to contain the redox-active metals, copper and zinc, which lead to the generation of reactive oxygen species which are damaging to nearby neural membranes which is the basis for the development of Alzheimer's disease. Given the affinity of Aβ peptide aggregates for metal ions present in the brain, metal-based therapeutics should offer an alternative target for Aβ, preventing aggregation and reactive oxygen species. Ruthenium (Ru) metal-based complexes have been studied for their effect of selectively binding and dissolving the protein aggregates in the brain largely because of the low neurotoxicity of the metal and the multiple oxidation states accessible in vivo. Interest in evaluation of the structure-activity relationship present between the ligand molecules and the metal's activity in exchanging these ligands with a biological environment will help develop guidelines for therapeutic drug design. We have prepared sample Ru complexes with varied Schiff-base ligands bound to ruthenium and have begun to characterize their interactions with Aβ. The results of the study will expand the structure-activity relationship of ruthenium complexes and aid in improving drug design for alternative therapeutic strategies for Alzheimer's disease.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Michael Webb

Funding Sources

None

246 • Amyloid Beta 1-40 Protein Corona Formation on Gold Colloids and Investigation of Nano-size Dependence

Bryan Martinez Hernandez, Victoria Brzezinski

Abstract

Earlier this year, Professor Yokoyama published a paper in the Langmuir Journal, "Protein Corona Formation and Aggregation Process of Amyloid Beta 1-40 Coated Gold Nano-Colloids". Together with my groupmate for this project, we further investigated the findings from this publication. We found that more different nano sizes of gold colloids followed the same trend when alternating between acidic and basic pH. This was done by using the imaging technique known as Surface Enhanced Raman Scattering (SERS) on Amyloid-beta1-40 (Aβ1-40) proteins that had been coated with gold colloids (20 nanometers and 80 nanometers) to make a visual representation of the spectrum generated during the cluster formation, known as the aggregation process. The SERS spectrum as a function of the concentration of the inserted Aβ1-40 showed evidence to suggest that the induction of adsorption, the process in which the proteins hold the gold colloids as a thin film, is nano-size dependent. In addition, the SERS analysis suggested that in the gold particles measuring 20 nanometers, the area of contact appeared to be relatively smaller by the existence of a C=C or -C-N bond of a histidine amino acid. Meanwhile, the gold particles measuring 80 nanometers suggested that the orientation of the benzene ring of either phenylalanine or tyrosine may have a significant role. However, regardless of the sizes of the particles investigated, the data analysis suggested that the β-sheet and the random coil of polymer conformations had a significant influence on the gold colloid aggregation process.

Subject Category

Science and Mathematics Categories: Chemistry

Special Topic Information

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Kazushige Yokoyama

This presentation will also be presented at:

2024 American Chemical Society Conference

Funding Sources

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

324 • Spike Protein pH Hop Investigation of Protein Concentration

Bryan Martinez Hernandez, Victoria Brzezinski, Nicole Mathewson, Christopher Kolilias, Luis Carrillo Rubio, Joel Mukkatt, Patrick Loss, Rachel Hirschkind

Abstract

SARS-CoV-2 is protected by a viral membrane which requires a viral capsid to fuse with a cell as an initial step in the infection process. This fusion process utilizes glycoproteins on the surface of the viral membrane to interact with cell surface proteins to help catalyze membrane fusion. The lipid-bilayer enveloped virus protects the RNA inside, while the glycoprotein (s-protein) attached outside of the envelope initiates the cellular infection process. As for the case of SARS-CoV-2, an s-protein is highly associated with priming the viral infection. This project aimed to utilize the structural component of SARS-CoV-2 binding adsorbed to gold nanoparticles to further characterize the protein interaction dynamics by changing the concentration of protein added. We examined the shift of the Surface Plasmon Resonance (SPR) band of SARS-CoV-2 coated nano-gold colloids as a function of the change of an external pH by utilizing a UV-Vis Spectrophotometer. The pH of the solution was set to be around pH 3 by inserting pre-tested volumes of hydrochloric acid (HCl). Raman spectra are being collected using a WITec Raman alpha300R (WITec, GmbH) confocal Raman imaging system to study the protein's conformation. Our group found that there is a relationship between the concentration of protein added and the amount of aggregation observed at an acidic pH, with a slight increase in pH as aggregation occurred.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Kazushige Yokoyama

Funding Sources

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

150 • Characterization and Doping of the SARS-CoV-2 Spike Protein Coated in Gold Colloids in a Silica-Sol-Gel Matrix

Marc Fazzolari, Patrick Loss, Joel Mukkatt

Abstract

The SARS-CoV-2 Virus (a.k.a. Covid-19) is protected by a viral protein membrane which in order to initiate the infection process requires a viral capsid to fuse to the cell. This spike-protein (s-protein) attaches outside of the envelope to initiate cellular infection with its unique molecular motion. This action possesses a great potential to design a bio-material with a similar mechanical motion in order to achieve work at a molecular size. Our group has been characterizing the behavior of the s-protein using attached gold nano-particles. While we have obtained some conformational information, we have attempted an investigation over three dimensional space. We used the 3D (Three Dimensional) Raman Imaging system for the s-protein coated in 50 nm gold colloid doped into a silica-based sol-gel matrix under pH~7. Our group wishes to see if it is possible to construct a model image of the gold nano-particle wrapped around the s-protein while trapped in this silica based sol-gel using Raman Imaging. We were able to construct a 3D image using different layers of the s-protein using Raman Imaging.

Subject Category
Science and Mathematics Categories: Chemistry
Special Topic Information
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Kazushige Yokoyama
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

315 • Effect of Zn2+ Ions to the Reversible Aggregation Formation of Amyloid Beta 1-40 Coated Gold Nanoparticles

Rachel Hirschkind, Luis Carrillo Rubio
Abstract
The end product of the fibrillogenesis of amyloid beta1-40 is regarded as the hallmark of Alzheimer's disease. Intense studies have been conducted to investigate the inhibition
fibrillogenesis. There have been reports indicating the interaction of Zn2+ ion acts as a type of an inhibition of fibrillogenesis. While the effective termination of the fiber formation is a promising approach to apply for the clinical tool for preventing the progress of Alzheimer's disease, no clear mechanism and how Zn2+ ion causes an inhibition has not been clarified yet. Our research group has been investigating the behavior of the peptide adsorbed over the nano-gold surface. By externally varying the pH, the conformation of the amyloid beta is considered to be changed to the folded conformation at basic condition and to the unfolded conformation at the acidic condition. Once the unfolded condition was made, no folded conformation was re-created even though the pH value was set to be a basic condition. However, only 20 nm gold is enabled to reversibly form unfolded and folded conformation at acidic pH and basic pH, respectively. It implies that 20 nm gold could prepare the condition for amyloid beta peptide to form an intermediate, which can take unfolded or folded conformation depending on the acidic or basic condition. Thus, we investigated how this reversible process can be affected by an addition of Zn2+ ion. Primitive data suggested that the addition of Zn2+ ion stopped the reversible process, and the threshold concentration of this effect and a reasoning are being investigated.
Subject Category
Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Kazushige Yokoyama
This presentation will also be presented at:
American Chemical Society Spring 2024 New Orleans
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

COMMUNICATION

371 • The Effect of Social Media Influencers on Adolescents

Lauren Goldstein
Abstract
With Generation Z entering their adult lives, we have our new upcoming youth known as Generation Alpha. They have had access to technology for their entire lives. This adolescent group is choosing social media platforms such as *Tik Tok* and *Youtube* for their entertainment rather than television. With that, advertising is changing and the growth of influencers is skyrocketing. Adolescents are more interactive with them than traditional celebrities, and form a

parasocial relationship with them. These influencers show their everyday, luxurious lives while simultaneously "pushing" products for the youths to purchase. Most of the products are items that are expensive for the average family to purchase. We see now that if a middle-school aged child does not have the newest water bottle or makeup that Kylie Jenner is using, they will be left out. Generation Alpha is growing up with materialistic values. Bullying is on the rise, as well with families suffering with financial problems trying to catch up with trends to make their child happy. With my research, I see the lack of personality as children follow the representation of the media to fit in. The study concludes the effect of influencer culture on adolescents and the representation they feel from the media. This will also show how advertising is changing with technological and trend development from generation to generation.

Subject Category
Social Science Categories: Communication
Faculty Sponsor Department
Communication
Faculty Sponsor
Atsushi Tajima
Funding Sources
None

ENGLISH

329 • Performance as Social Change Capstone Project: Unseen, Unheard, Unmoved

Iliana Papadopoulos
Abstract
Researching Question: What Are The Social Experience Of Black Students Attending a Small PWI?
Subject Category
Interdisciplinary and Other Categories: Performance as Social Change
Faculty Sponsor Department
English
Faculty Sponsor
Mark Broomfield
Funding Sources
None

FRASER LIBRARY

193 • The Pantry at Geneseo: An On-campus Resource Fighting Food Insecurity

Halie Cardon, Shelby Soper, Matthew McGowan
Abstract
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 the Geneseo Ambassador Program, our team looked to increase the number of Pantry users, increase the space available for The Pantry and locate a reliable food source for an increasing number of users. Our poster aims to summarize how we as Student Ambassadors achieved these goals and discuss our efforts in fighting food insecurity.
Subject Category
Interdisciplinary and Other Categories: Ambassador Program
Faculty Sponsor Department
Fraser Library

Faculty Sponsor
Brandon West
Funding Sources
Student Ambassador Award

OFFICE OF SUSTAINABILITY

272 • Garden Committee at GREAT Day

Jeremy Sauer, Bakhita Solenyanu, Maximillian Haegele, Alexa Linares, Ethan Huff
Abstract
The Garden Committee works within the Office of Sustainability to manage the campus garden. Each year, the committee grows vegetables using organic and sustainable practices which are brought to market in Geneseo and Rochester during the summer and fall. The garden acts as a opportunity for students to learn sustainable horticulture that they can practice throughout there lives, and as a way to participate in community engagement at each farmers market. At the Westside Farmers Market in Rochester, the Committee works to address food justice by providing low cost fresh produce, particularly produce requested by the community as being inaccessible in the area, through a grant by a local organization.
Subject Category
Interdisciplinary and Other Categories: Environmental Studies
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Office of Sustainability
Faculty Sponsor
Dan DeZarn
Funding Sources
Office of Sustainability

GEOGRAPHY AND SUSTAINABILITY STUDIES

136 • Supporting School Garden Leaders: The Role of Grassroots Gardens of Western NY

Arianna Whittaker
Abstract
School gardens are extremely beneficial for students, providing a place for unstructured and active learning, with this hands-on approach to garden programs being shown to enhance interest in science concepts. However, school garden leaders (e.g., teachers, administrators, and school garden coordinators) face a multitude of challenges in both maintaining these gardens and using them for instructional spaces. Grassroots Gardens of Western NY (GGWNY), a non-profit organization working to support community and school gardens, provides a potential solution for these issues. My research examines how GGWNY addresses the support needs of school garden leaders. The research question guiding this project asks: what are the challenges that school garden leaders face in ensuring the continuation of these gardens and what is GGWNY's role in this? Data collection methods include a literature review on the support needs of garden leaders and analysis of key informant interviews and survey data. Key themes emerged from this analysis, from which I pulled out three critical ways that GGWNY's efforts have addressed school garden needs: access to tools, knowledge of gardening, and participation. My research highlights the importance of all three, looking at the specific challenges associated with each, as well as the changes that have occurred since GGWNY's involvement. In future research, I will build upon this project to explore the impact of the nonprofit industrial complex and how school garden support needs, including money and tools, are only addressed as long as funding lasts.
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

Funding Sources

None

142 • Community-Driven Action Planning in the Good Food Buffalo Coalition

Gabriel Revelas

Abstract

Community-driven action planning is when a group or social movement consults communities that are most impacted by issues at hand, in order to ensure that these communities' goals are guiding solutions. The Good Food Buffalo Coalition exemplifies this through their community-driven action planning process, with the goal to speak with every community group that is affected by the lackluster food system within Buffalo Public Schools. Illustrating one of my initial involvements with the coalition, we brought together very knowledgeable people from many different expertises like teachers, professors, administrators, community members, parents, and more in order to find what problems exist within the current Buffalo Public Schools food system and how the Good Food Purchasing Program can address them. This will benefit not just Buffalo Public Schools food, but also the students who are eating it, the workers who serve it, the distributors who deliver it and the farmers and farm workers who produce it. Our methods came from a dotmocracy exercise where everyone was split based on their expertises, creating problems, solutions, and their top five solutions per value, followed by discussion between everybody at the event. Preliminary results from the dotmocracy indicate multiple solutions like the need for a new Commissary with scratch cooking facilities. These results will guide future campaigning in the Good Food Buffalo Coalition, thus demonstrating the power of community-driven action planning and its method of finding the solutions for communities' needs.

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

Funding Sources

None

323 • What is the Geospatial Distribution of Dairy Farms in Western New York and How Does this Distribution Compare to Documented Violations of Dairy Farmworkers' Rights?

Kerrin Cleary

Abstract

The dairy industry in Western New York plays a crucial role in the region's economy and agricultural landscape. However, there are many injustices within the dairy industry. This project aims to map dairy farms in Western New York while discussing dairy farmerworkers' rights with the goal of implementing them. The overall goal of this project is to create a transparent publicly accessible map of dairy farms in western New York.The first step is to create a comprehensive map of dairy farms in Western New York using geospatial technology such as Google Earth Pro and Mymaps. The next step is to identify areas with a high concentration of dairy farms and analyze their socio-economic significance. The ongoing research after Great Day will be focused towards dairy farmers workers rights and the

geographical connection. An important aspect of this project is making the informationthe easily accessible information, whichthis is crucial to enableallow farmworkers and activistsothers to interpret this data for their own usage. Through this research I am to further expand my knowledge of farmers workers rights and how to be an advocate for them.

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

Funding Sources

None

233 • Rochester Thrift Store Accessibility

Jessica Mazzeo

Abstract

Thrift stores collect donations and resell them at an affordable price, an attractive option for people of low socioeconomic status. Donations include clothing, kitchen utensils, furniture, tools, and more. Thrift stores serve multiple benefits to the public: donors can remove items they no longer need from their homes, while buyers can purchase quality, second-hand items at a reasonable price. Additionally, thrift stores are sustainable, as a common reason people donate items is to prevent quality items from ending up in a landfill.

"Affordable housing" indicates housing, rent, or mortgage plus utility payments, totaling 30% or less of a household's gross income, (U.S. HUD, 2023). Public housing is a necessity all over the country, but it is especially important in Rochester with its high poverty rate: 27.9%. For comparison, the U.S. poverty rate is 11.5%, (U.S. Census, 2023).

Thus, in this project, three affordable housing complexes were studied: in the northeast, southwest, and downtown – three of the most impoverished areas of Rochester. Bus and car travel times were recorded from each housing complex to 10 thrift stores. Many people of low socioeconomic status rely on public transportation because they cannot afford the added expenses of cars.

After mapping thrift stores then comparing bus and car travel times from representative housing units to thrift stores, it is clear that accessibility could be improved by locating thrift stores near on/near public transit routes.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Jennifer Rogalsky

Funding Sources

None

112 • Shade Speaks Louder Than Words - An Analysis of and Solution to Tree Canopy Inequity in Rochester, NY

Kayla Andersen

Abstract

Disproportionate and inequitable tree canopy cover and access to urban green space is a common issue in many cities of the United States, including Rochester, New York. Due to racially discriminatory practices in Rochester's past, such as redlining and resource distribution (e.g. tree replacement), many communities in the city experience an urban heat

island effect, where surface temperatures in urban neighborhoods reach dangerous temperatures in the absence of vegetational interference. Communities which are the most impacted include those of high poverty levels and races other than white, such as the neighborhood near Clifford and Joseph Avenues in the notorious “Crescent of Poverty” of Rochester. This region of interest was identified due to: being historically redlined, being a crime hotspot, having many vacant lots, being exposed to high surface temperature, lacking in canopy cover, having high poverty rates and racial minority populations, and being within close proximity to a homeless shelter. This research project will propose solutions including increasing tree canopy cover and green spaces in place of concrete, asphalt, or abandoned lots in historically disadvantaged communities. This action would decrease surface temperature fluctuation, provide natural health benefits to residents, and foster a sense of community through a common initiative and shared space. Since beginning of this research project in Spring 2023, the city of Rochester actually began allocating resources to decrease tree canopy inequity in the city via the Tree Master Plan of 2024.

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

Funding Sources

None

113 • Refugee Resettlement in Rochester

Molly Brown

Abstract

Refugee resettlement in the United States is a highly complex process that stretches far beyond the physical resettling of refugees. They must undergo an intense and lengthy legal process to be granted the status of refugee; many U.S. cities are now encouraging resettlement for redevelopment and revitalization. This project focuses on refugees in Rochester, NY. Using demographic data (population, race, foreign born, labor force, income, and language) this study will also make note of population trends and statistics in the United States, New York State, New York City, and Rochester. As Rochester is an “emerging gateway” city, such context helps to highlight differences among refugee resettlement experiences, especially compared to “traditional gateway” cities. In order for a refugee to build their own life in the United States and to assist in revitalizing a community, they must be provided with proper resettlement resources and cultural reinforcement initiatives. Through researching available resources and taking into account the social and political climate of Rochester, this project will analyze to what degree Rochester is a safe and accommodating destination for refugees, as well as address any shortcomings Rochester may present in welcoming refugees. Speaking with refugee organization employees, this research also reflects a professional perspective on the hardships faced by refugees in Rochester. While resettlement experiences and issues differ among gateways, Rochester presents a few unique challenges such as housing, employment, language barriers, and transportation.

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

Funding Sources

None

38 • The Emergence, Growth, and Demise of Geiger Enterprises, a Multi-Independent Retail Gasoline Station Corporation of the Buffalo Niagara Region

Mailey Geiger

Abstract

Historical examinations of gasoline stations have traditionally focused on their association with Big Oil, emphasizing branding, architecture, and the attrition of independent operators. The middle ground of multiple station independent ownership in regional or metropolitan settings remains largely unexplored. This research examines the emergence and growth of Geiger Enterprises, a 134-station 'empire' of independent discount retail gasoline stations in the Buffalo-Niagara region of New York State. Harold and Patricia Geiger's journey began in 1967 when they purchased their first station, eventually expanding through creative financing and sourcing cheap oil. Despite lacking branding and distinctive architecture, Geiger stations gained recognition through strategic location choices, price competition, and early self-service adoption. However, the 1979 oil crisis marked the beginning of their decline. The fate of Geiger Enterprises is intricately linked to the urban renewal of the region, demonstrated by the transformation of 73 former stations across Buffalo, NY, and its surrounding areas. Abandoned stations, predominantly located in low-income districts, reflected their owners' financial limitations. Moving eastward into the suburb of Cheektowaga revealed the repurposing of former stations for automotive-related and commercial uses. Despite efforts to salvage a handful of stations, Harold and Patricia Geiger witnessed their entire enterprise's eventual closure and sale by 2023. Once emblematic of the middle ground in gasoline retailing, Geiger Enterprises succumbed to an oil crisis and an overturning urban landscape. Their story underscores the fragility of independent ventures in an industry dominated by Big Oil.

Subject Category

Social Science Categories: Geography

Special Topic Information

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsors

Stephen Tulowiecki and Darrell Norris

Funding Sources

None

41 • Bluffs along Southeastern Lake Ontario, New York

EmmaGrace Humbert

Abstract

The Lake Ontario shoreline is under constant stress of waves, wind, and ice, leading to 1-2 feet (0.3-0.6 meters) of erosion annually. Erosion creates bluffs, which are loosely defined as broad, rounded cliffs on ocean and lake shorelines. Along Lake Ontario, bluffs often form where forces erode small glacial hills called drumlins. Bluffs attract many visitors but are susceptible to mass movements and thereby pose dangers. This project mapped erosional patterns along the southeastern shoreline of Lake Ontario with a focus on bluffs. In this GIS-based analysis, I downloaded a digital elevation model (DEM) at 10 meter resolution from the USGS and transformed it into a hillshade to reveal bluffs and drumlins. I then compared the hillshade to the shoreline in Google Earth and place names from USGS to locate both named and unnamed bluffs. Height and extent were then estimated using GIS measurement tools and recorded in the attribute table of a bluffs vector layer. To present results, a graduated symbols map was overlain atop the hillshade to emphasize bluff dimensions. Streets and municipal borders were added for reference. This project located four named and approximately seven unnamed major bluffs along the southeastern shore of Lake Ontario. Bluffs ranged from 0.12 to 0.5 miles (193 to 805 meters) in length, and in maximum height 72 to 151 feet (22 to 46 meters). The map manifests the constantly-shifting and potentially-hazardous nature of bluffs and how future erosion may form bluffs where erosive forces meet drumlins.

Subject Category

Social Science Categories: Geography

Special Topic Information

The environment and/or sustainability
Faculty Sponsor Department
Geography and Sustainability Studies
Faculty Sponsor
Stephen Tulowiecki
Funding Sources
None

212 • Alpine Vegetation in the Adirondacks (NYS)

Marty Mahar
Abstract
Alpine zones are high mountain environments with limited vegetation and weather conditions comparable to arctic regions. The types of vegetation found in alpine zones are unique because they have adapted to the extreme environment. Various types of shrubs are found in the alpine region of the Adirondacks because of their ability to resist frost and desiccation, and they often grow low to the ground and stay relatively small at their full size. Many alpine zones are a part of national parks or protected areas, such as the Adirondack Park of New York State. The purpose of this project was to map the prevalence of unique alpine species on Adirondack alpine summits. It emphasizes the spatial patterns of these species and where they are most and least commonly found. Data were recorded from iNaturalist, a citizen science platform, on eight species of rare alpine vegetation: Alpine Goldenrod (Solidago leiocarpa), Alpine Sweetgrass (Anthoxanthum monticola), Bearberry Willow (Salix uva-ursi), Bigelow's Sedge (Carex bigelowii), Black Crowberry (Empetrum nigrum), Diapensia (Diapensia lapponica), Highland Rush (Oreojuncus trifidus), and Lapland rosebay (Rhododendron lapponicum). After selecting the species, data collected from each alpine summit was organized into data tables, showing how many times each species was observed per summit. Summits were mapped and results were presented as a proportional-symbols pie-chart map. Results show mountains Whiteface, Algonquin, and Wright had the highest numbers of unique species, and Diapensia, Alpine Goldenrod, and Bearberry Willow were observed most often. This project highlights the rarity and fragility of alpine vegetation on Adirondack alpine summits.
Subject Category
Social Science Categories: Geography
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Geography and Sustainability Studies
Faculty Sponsor
Stephen Tulowiecki
Funding Sources
None

186 • Mapping Ripening Dates of the Pawpaw Tree (*Asimina triloba*) in Eastern North America

Naomi LaDuke
Abstract
The goal of this project was to understand variation in the ripening dates of the pawpaw tree (Asimina triloba) across the species' range. The pawpaw (Asimina triloba) is a native deciduous tree that requires hot summers for fruit development and cold winters for seed stratification and is most often found growing near streams, springs, and rivers. The tree produces the largest fruit native to the United States which has green skin, large seeds, and custard-like yellow flesh that tastes like banana, mango, and pineapple. To understand the spatial variation in ripening dates, a survey was conducted and disseminated through pawpaw-focused Facebook groups. Respondents were asked to give the approximate location (i.e. zip code or county level) of a wild or cultivated pawpaw grove, an estimated date at which the grove was typically at its fruiting peak each year, and whether the grove was wild or cultivated. A total of 304 responses

were collected. The data from the survey were then imported to the mapping software QGIS and a thematic map was created to present spatial patterns of the survey's findings visually. Results showed that the peak ripening dates for Florida fruits fell in early August while Ontario and Quebec pawpaws did not ripen until mid-to-late October. Pawpaws ripen later in the season as latitude increases. Knowledge of pawpaw ripening dates collected and generated through this research could be helpful to large- and small-scale growers as the cultivation of pawpaw trees grows in popularity in response to consumer interest in the fruit.

Subject Category
Social Science Categories: Geography
Special Topic Information
The environment and/or sustainability
Faculty Sponsor Department
Geography and Sustainability Studies
Faculty Sponsor
Stephen Tulowiecki
Funding Sources
None

245 • Concentrated Animal Feeding Operations and Watershed Impacts

Aleigha Morrison
Abstract
Concentrated Animal Feeding Operations (CAFOS) are defined as agricultural facilities where 1000 or more animals are born and raised for slaughter in the food industry. Animals are often raised in confined spaces. CAFOs can significantly impact watersheds due to the large quantities of manure they produce. Not only does CAFO manure contain both the artificial hormones and antibiotics they are given, but also excessive amounts of nutrients, bacteria, pathogens and other pollutants, some of which can contribute to eutrophication. The purpose of this project was to map CAFOs in New York State and to compare their locations with watersheds. Data on CAFO locations were collected from the NYS GIS Clearinghouse, and data on NYS watershed boundaries at the 10-digit Hydrologic Unit level were collected from the USGS National Hydrography Products. Using GIS-based overlay techniques and methods, I calculated the number of CAFOs per watershed, as well as the relative density of CAFOs per watershed. Patterns show that most CAFOs are located in Western and Central New York watersheds. In particular, the Oatka Creek, Silver Lake Outlet, and Canandaigua watersheds contain the highest density of CAFOs per unit area. This analysis is useful for understanding which watersheds are at highest risk of CAFO manure contamination, and for informing where mitigation efforts should be focused.

Subject Category
Social Science Categories: Geography
Faculty Sponsor Department
Geography and Sustainability Studies
Faculty Sponsor
Stephen Tulowiecki
Funding Sources
None

GEOLOGICAL SCIENCES

116 • Descriptive Mineralogical Analysis of an Igneous Dike Found in the Kingston Peak Formation, Mojave Desert, CA

Cassidy Sander, Florence Denz
Abstract

Located in California's Mojave Desert is the Kingston Range where the Precambrian Kingston Peak Formation is found. This formation is mostly sedimentary but it hosts multiple igneous intrusions, including the approximately 5-meter-wide dike that is the focus of this study. Samples were collected off the side of Excelsior Mine road near the Horse Thief Springs Camp, where both the Kingston Peak Formation and igneous dike are exposed. Samples were cleaned and photographed before being prepped for analysis with XRD (X-Ray Diffraction) and SEM (Scanning Electron Microscope). The dominant mineralogy of the dike was determined using XRD. Accessory minerals were identified with SEM. Whole rock analysis was conducted with both the XRD and SEM. Additional mineral separates were studied with the SEM. XRD produced a dominant mineralogy of 17% Quartz (SiO_2), 66% Albite ($NaAlSi_3O_8$), and 17% Orthoclase ($KAlSi_3O_8$). SEM identified the presence of titanium and titanium-iron rich minerals. Apatite ($Ca_5(PO_4)$) and manganese dendrites (MnO_2) are also present. Together the geochemistry and mineralogy characterize the dike as a rhyolitic dacite, which correlates with its light colored, felsic appearance. It is likely that this dike is related to other large felsic igneous intrusions in the region.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Dori Farthing

Funding Sources

None

234 • Mysterious Blue Mineral Found in The Beck Spring Formation, CA

Elizabeth Wratten, Hanna Pochobradsky

Abstract

The Beck Spring is a pre-Cambrian dolomite formation found in the Kingston Range in the Mojave region of California. Samples of a mineral with a blue hue were found coating the side of the Beck Spring along the side of Excelsior Mine Road and collected in January 2024. To identify this mineral, the samples were analyzed with the X'pert Pro Diffractometer (XRD) and the Scanning Electron Microscope (SEM). The XRD identified the mineral as an amphibole. The imaging from the SEM showed microscopic, skinny, elongated crystals, which is a characteristic of amphiboles. The most dominant elements by atomic percent listed in order of increasing value were Ca(1.02), Na(1.27), Fe(6.02), Mg(6.86), Si(18.05), Al(21.69), and O(45.09). This is surprising because the Beck Spring Formation was produced as a result of contact metamorphism between the Beck Spring dolomite and an adjacent igneous intrusion and the fluids connected to it. These liquids contributed to the formation of the amphibole covering by trailing behind fractures in the Beck Spring.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Dori Farthing

Funding Sources

None

84 • Mineralogy of the Ash Beds in Tecopa, California

William Pratt, Brooke Wandelt

Abstract

The Tecopa Opal Beds, located in Tecopa, California, feature opals encased in a matrix of volcanic ash from a volcanic eruption 2.1 million years ago in Yellowstone which deposited the Huckleberry Ridge formation. Opal nodules and volcanic ash samples were taken from the beds at a stopping point along California Route 127 and transported back to SUNY Geneseo. An x-ray diffractometer (XRD) and a scanning electron microscope (SEM) were used to determine the mineralogical and physical differences between select samples. Analysis showed differences in porosity and mineralogy throughout select samples. XRD analysis identified quartz, sanidine, albite, calcite, muscovite and suggested the presence of an amorphous phase. The amorphous phase corresponds with either opal or volcanic glass. Further inspection with the SEM confirmed the presence of the aforementioned minerals as well as zircon, manganese oxide, and magnetite. We hypothesize that sanidine, albite, and zircon are original volcanic material, whereas opal, calcite, and muscovite were formed after the deposition of the ash, and in conjunction with the same fluids that created the opals.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Dori Farthing

Funding Sources

None

231 • Under Pressure: The Story of Dish Hill Xenoliths

Jack Masman, John Hannon

Abstract

Dish Hill is a cinder cone volcano complex in the Mojave Desert that erupted approximately 2 million years ago. The basanite composition (high Na - low SiO_2) lava carried ultramafic xenoliths to the surface that provide valuable insight into the composition of the underlying mantle. Clinopyroxene minerals are common in ultramafic xenoliths, and their chemistry reflects environmental conditions of equilibration (pressure and temperature) and the extent of melting of the mantle. We analyzed clinopyroxene separates from three lherzolites, one olivine websterite, and one dunite by scanning electron microscopy and energy dispersive x-ray spectroscopy (SEM/EDS) to determine their elemental composition. In particular, our study focuses on measuring the concentration of elements not included in the ideal chemical formula Ca(Mg, Fe)Si_2O_6. All clinopyroxenes in xenoliths are Cr-diopside (Mg# 89-93%) with a minor jadeite component ($NaAlSi_2O_6$) and titanium and chromium substituted into the M1 crystallographic site. The Cr-diopsides from peridotites contain between 2.0 and 8.0 wt% Al_2O_3 and 0.25 and 2.0 wt% Na_2O. Based on the Na_2O and Al_2O_3 content, our samples plot within the established compositional range for spinel peridotites, regardless of modal mineralogy. The spinel peridotite stability field corresponds to 35-90 km (1.3 GPa to 3.0 GPa) within the earth, which constrains the depth of origin for the xenoliths and the magmas that brought them to the surface. This presentation will discuss this result in a tectonic context and use mineral chemistry to examine the relationship between the lherzolites and dunite xenoliths.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Sarah Gaudio

Funding Sources

None

59 • Evidence for Depth of Origin and Mantle Oxidation of Xenoliths in the Dish Hill Cinder Cone Complex

Julia Tufillaro, Sean Curley

Abstract

Xenoliths and xenocrysts erupted in ~2 Myr old basanite lava at Dish Hill volcanic center in the Mojave geographic province contain opaque and dark-colored mafic mineral phases that can be challenging to distinguish from one another in the field. The identity and chemistry of the minerals in these xenoliths and xenocrysts refine our understanding of the underlying mantle and the magma system that carried them to the surface. We identified opaque and mafic minerals in lherzolite and coarse mafic crystals in lava bombs using powder x-ray diffraction and analyzed the mineral chemistry with scanning electron microscopy and energy dispersive x-ray spectroscopy. The opaque mineral in lherzolite is Mg and Al dominant spinel (Mg# ~72% and Cr# of ~10%). The mafic mineral in lherzolite is orthopyroxene with Mg# 88% and minor amounts of Ca (0.5 atomic %) and Al (0.2 atomic %) and the mafic mineral on or "selvaged" to lherzolite is a high Ti and Mg amphibole with kaersutite to Ti-pargasite composition. The coarse-grained xenocrysts in lava bombs are high Na-Al Ti-Augite, a clinopyroxene with higher Fe content than the Cr-diopside typically found in lherzolite. Spinel with this Mg-Al content indicates fertile (primitive) lherzolite equilibrated at pressures between 1.2-3 GPa (35-90 km depth with the Earth). Mantle xenoliths equilibrated with high-Ti amphiboles suggest oxidation/hydration by subduction zone processes consistent with the tectonic history of the region. We will also discuss the implications of reaction relationships observed between amphibole and spinel and gabbroic inclusions in amphiboles.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Sarah Gaudio

Funding Sources

None

32 • School Support and Preparedness for the 2025 Earth Science Regents Exam

Danielle Stein, Reagan Bifarella

Abstract

The 2024-2025 school year will be the first year that the Earth Science Regents exam will be administered through the framework of the New York State P-12 Next Generation Science Learning Standards. The current exam places emphasis on memorization of concepts, and the revised exam is hoping for a shift to inquiry based learning. The idea is to increase active engagement in the classroom and improve scientific literacy. This study aims to find out if there are any inequities between rural, urban, and suburban schools and the support provided to them to update their classes for the new Earth Science Regents Exam. Data was collected through the use of a survey and results showed that teachers have relatively similar support from the state, their district, and within their educator team. Most teachers noted being frustrated with the lack of transparency from the state about what to expect and when to expect it. Further studies are needed to determine whether this lack of preparedness is common throughout the state. A study conducted over a longer period of time with a larger pool of participants would likely yield results that are more representative of teachers' experiences in general.

Subject Category

School of Education Categories: Adolescence Education: Earth Science and General Science

Special Topic Information

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

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor
Scott Giorgis
Funding Sources
None

230 • Thermal vs. Alternating Field Demagnetization: Lessons Learned from an Ophiolite Sequence, Northern Andes Mountains

Carleigh Wachtel, Allison Wing

Abstract
Demagnetization experiments are useful in determining the paleolatitude of samples. As rocks cool, magnetic minerals in the rock align with the magnetic field of the Earth and this can be used to determine the latitude in which the rocks formed. However, chemical weathering can alter the magnetic vector of a sample. The component of the magnetic vector due to cooling is called the primary component of magnetization and the component due to chemical weathering is called the secondary component. As the samples are progressively demagnetized, it allows for the primary component of magnetization to be distinguished from the secondary component as the secondary component decays first since it is weaker than the primary component. Samples from a basaltic outcrop near the northern border of Ecuador were tested to determine the method, thermal or alternating field demagnetization, that is most successful at isolating the primary component. Our results showed that alternating-field demagnetization was better than thermal demagnetization for this study site because the samples that were thermally demagnetized had a sporadic and irregular decay of the magnetic vector. However, neither results provided consistent magnetic vectors to perform paleolatitude analysis. Further work should focus on the effectiveness of the alternating field method on samples from this particular study site.

Subject Category
Science and Mathematics Categories: Geophysics
Faculty Sponsor Department
Geological Sciences
Faculty Sponsor
Scott Giorgis
Funding Sources
None

29 • Paleomagnetic Analysis of Fine-Grain Sandstone from the Kingston Formation, California, USA

Carleigh Wachtel, Cole Schaefer

Abstract
Evidence of Neoproterozoic glaciation at low latitudes indicates that the Earth was mostly covered by glaciers during this time and is known as “Snowball Earth”. Paleomagnetic analysis of the Kingston Formation in eastern California was used to determine the latitude at which the rock was deposited at and therefore can be used to determine if glaciers were present at low latitudes in this region. A thermal demagnetization experiment, with heat steps from 0 to 700 degrees Celsius, was ran on oriented samples to determine the paleolatitude. The results show that at temperatures above 400 degrees Celsius, there is magnetic mineral growth or change in composition of magnetic minerals. Excluding these high temperatures, a consistent paleolatitude of 30˚is shown. Future studies on this formation should focus on alternating-field demagnetization or thermal demagnetization that focuses on the lower heat steps to better characterize the loss of magnetization of the samples.

Subject Category
Science and Mathematics Categories: Geophysics
Faculty Sponsor Department
Geological Sciences
Faculty Sponsor

Scott Giorgis

Funding Sources

None

133 • Paleomagnetism of a Dike in Kelso, CA

Wesley Sharlow, Andrew Rasulo

Abstract

An igneous intrusion was discovered while completing a geologic mapping project on the Kelso 7.5-minute quadrangle in San Bernardino California. This dike is located at 35 degrees 3’47” N and 115 degrees 40’47” and has an unknown age. The objective of our research entails examining samples extracted from the dike, using a paleomagnetic demagnetization experiment to determine the age of when the dike was emplaced. Samples were collected during a research expedition to Southern California. On site they were orientated and collected. They were then brought back to the lab where they had cores drilled on them. Of the cores drilled five were usable. They were then spun on the spinner and subjected to incremental heating until the temperature of 700 degrees Celsius was met. Results wield an average declination of 162.6 and an average inclination of 22.4. These results are promising but the potential rotation of the sample suggests more samples are needed to conclusively determine the age of this dike.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Scott Giorgis

Funding Sources

None

28 • Taxonomy and Preservation of Lower Cambrian Trilobites, Carrara Formation, Southern CA

Reydaliz Torres Lopez, Zander Cole

Abstract

Trilobites are an extinct group of arthropods made up of three distinct body parts produced by calcite that disarticulate after molting. Trilobites lived in shallow, tropical, marine environments and left an excellent fossil record. The Cambrian is known as the age of trilobites, with the greatest diversity of trilobite forms. However, trilobites went extinct at the end of the Permian. The Carrara Formation (lower Cambrian) in Emigrant Pass, Mojave Desert, CA hosted a wide range of trilobite fossils. The area contains moderately deformed and metamorphosed siliciclastic and carbonate rocks from the lower Carrara. Trilobite samples were examined using a Zeiss Stereo microscope and identified based on their morphology. The samples were mostly incomplete with the cephalon as the most common segment found. The cephalon of the trilobites have been mildly sheared as a result of tectonic uplift and tilt making some of them difficult to identify. After examining the various traits within the Trilobite samples, we have concluded they are part of the Olenellidae family. Trilobite samples were also crushed to examine the bulk composition and mineralogy found within them by using tools like scanning electron microscope (SEM), energy dispersive spectroscopy (EDS), and x-ray diffraction (XRD). Trilobites displayed variable preservation of molds, minor original hard parts, and replacement exhibiting a red coating. XRD bulk analysis revealed a bulk mineral composition of quartz, Fe +2 bearing clinochlore, and Fe +3 bearing muscovite. Furthermore, SEM and EDS analysis revealed the red coating to be iron oxide, with traces of calcite and chlorite.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Jeffrey Over and Jacalyn Malinowski

Funding Sources

None

253 • Astrochronology of the Dyer Formation, Late Devonian, Northern Colorado

Armand Moskaluk

Abstract

The Dyer Formation of the Chaffee Group, deposited in the Eagle Basin during the Late Devonian, consists of dolomitic sandstone and dolomudstones. The Dyer Formation is subdivided into two members, the darker gray thinly bedded open marine carbonates of the Broken Rib Member, and the thicker overlying Coffee Pot Member, which consists of restricted marine dolomudstones. These strata show cycles that reflect eustatic sea level change. A 62-meter-thick section at Bear Scat Creek was sampled at 10-centimeter intervals. These samples were analyzed for magnetic susceptibility, which is essentially a measure of the amount of detrital iron present, which is influenced by sea level change, where lower levels indicate higher sea level. The data were processed with a Fourier transformation analysis. Two distinct cycles were found at 100,000 years and 40,000 years. These correspond to the 100,000-year short eccentricity and the 40,000-year obliquity Milankovitch cycles. The Milankovitch cycles, which are the 21,000-year precession, 40,000-year obliquity and 100,000-year short eccentricity. These orbital perturbations modulate the amount of solar radiation the earth receives, there by changing the climate of the earth which is reflected in the rock record. Shorter cycles, less than 20,000 years are also found in the data set, indicate shorter scale climate changes.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Jeffrey Over

Funding Sources

None

161 • Frasnian Age of the Wiscoy Formation Based on Conodonts, Upper Devonian, Western New York

Courtney Levy, Julianna Klimow

Abstract

The Wiscoy Formation is composed of calcareous/dolomitic sandstones, siltstones, interbedded shales, and some concretion horizons that were deposited in a shallow marine shelf environment in the northern Appalachian Basin. Conodonts are the phosphatic teeth of an eel-like organism commonly used as an index fossil in the Paleozoic. The conodonts found in the shales and sandstones of the Wiscoy Formation and in the overlying thick black shale include *Ancyrodella curvata, Ancyrodella hamata, Palmatolepis linguiformis, Palmatolepis winchelli,* and abundant *Polygnathus decorosus. Palmatolepis linguiformis* is only found in Frasnian Zone 13b which is in the highest Frasnian. These conodonts indicate the Frasnian/Famennian boundary, where a major mass extinction event occurs, is stratigraphically higher than originally thought. Thus the black shale above the Wiscoy Formation is neither the Dunkirk Formation as traditionally understood, nor the Pipe Creek Formation. This also means that the Wiscoy Formation is entirely within the Frasnian Stage of the Upper Devonian.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences
Faculty Sponsor
Jeffrey Over
Funding Sources
None

141 • Predation on Microbivalves in Graham's Harbor, San Salvador Island, The Bahamas

Sarah Alfiero, Mary Noragong, Lauren Russo, Brielle Friends, Zander Cole
Abstract
The Pliocene-Pleistocene extinction was responsible for the loss of ~70% of the carnivorous snails in the Atlantic-Gulf Coast region. A loss of carnivorous snails should be reflected in the occurrence of predation on bivalves. This project aims to analyze evidence of predation in microbivalves sampled from twelve different localities in Graham's Harbor, one at French Bay, and one at Victoria Hill to determine if there is predation variation between facies as compared to an extinction event. Microbivalves were chosen to be studied because they are easier to collect and reflect the entire population. Each sample location was approximately four meters deep and varied between sand flats and grass flats. Sand was collected on a 0.125 mm sieve. The first 30 specimens less than 3 mm in length were selected for analysis. Microbivalves with evidence of predation (drill holes) by gastropods were recorded. Sand-flat environments had the highest average percent predation (21.9%-3.2%, average 11.6% predation; six total samples) as compared to grass-flats (15.6%-3.2%, average 9.2% predation; eight total samples). The percent of bivalves with evidence of predation varies within each facies from sample to sample, but does not, on average, vary significantly between facies. Thus, facies changes in Graham's Harbor do not represent the profound change in fauna as seen in the Pliocene-Pleistocene extinction.
Subject Category
Science and Mathematics Categories: Geological Sciences
Faculty Sponsor Department
Geological Sciences
Faculty Sponsor
Jeffrey Over
Funding Sources
None

195 • Death Valley Mesquite Sand Dunes Migration Patterns and Stability

Jeffrey Herberger, Alexander Tooker
Abstract
This project analyzes the migration and stability of sand dunes in the Mesquite dune field in Death Valley National Park. Satellite and aerial images ranging from 1948 to 2022 were analyzed in ArcGIS Pro. Dune crests were traced across the field. The azimuth of each crest was calculated and dune orientations displayed in rose diagrams with comparisons to local wind data. Transverse, star, and barchan dunes were identified. The average azimuth for the main field , over an 80-year period, is 64° to 244° with a standard deviation of 87°. The average azimuth of fringe dunes is 42° to 222° with a standard deviation of 13°. This suggests a northwest or southeast wind orientation assuming transverse dune morphology. In Stovepipe Wells, located west 1.5 miles of the field, weather data indicate a predominantly south-southwest wind direction, which is consistent with prevailing winds funneled through mountain passes, but inconsistent with the orientation of transverse dunes. The wind speed average was 12.9 mph. In Furnace Creek, located 17 miles south of the field, there is a predominant southeast wind direction, consistent with the strike of Death Valley. Seasonal wind changes exist at each location. Based on the data, the main body of the field, corresponding with the largest dunes, appears to be stable while the fringes are more susceptible to change in sand supply, orientation, and shape. Despite changes, the entire Mesquite field is currently at a state of equilibrium, located in a convergence of opposing and fluctuating wind directions.
Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Nicholas Warner

Funding Sources

None

188 • Efficacy and Limitations of Geologic Remote Sensing: Comparing Ground Truth to Spectrally Identified Lithology, Mojave National Preserve, California

Allison Wing

Abstract

This study investigated the efficacy of utilizing visible, near-infrared (VNIR), and short-wave infrared (SWIR) imagery for geologic mapping. Samples collected from Kelso Station, CA, provided ground truth for field and digital mapping of the region at a 1:8000 scale using ArcGIS Pro and georeferenced sample sites. Aerial data sets of the Kelso region were gathered from Advanced Spaceborne Thermal Radiometer (ASTER) multispectral data and processed in ENVI utilizing nine bands within the VNIR (0.4-1.0 µm) and SWIR (1.0-3.0 µm) wavelengths. Regions of interest were created using Spectral Angle Mapper (SAM) utilizing three classifications: georeferenced sample lithology, USGS map lithology, and georeferenced sample lithology with varnished alluvium assumption. Comparison to corresponding geologic maps revealed the effectiveness of VNIR and SWIR data in predicting specific rock lithology. In every classification scheme, SAM succeeded in determining carbonate bedrock and quartz sand. Disparities in the recognition of intrusive igneous, metamorphic, and basalt varieties occurred when comparing SAM to geologic maps. These discrepancies between ground truth and remote sensing are likely from physical limitations of the multispectral data: silicate minerals and Bowen's Reaction Series minerals (except iron) lack absorption features in the VNIR/SWIR wavelengths thus limiting distinct classification. Additionally, VNIR/SWIR wavelengths maintain micron-deep penetration which induces susceptibility to surficial alteration and varnishing processes. The results of the study concluded that lithology-classified ASTER data using SAM is valuable in the identification of carbonate and aeolian quartz sand but maintained low accuracy in distinguishing basalt, intrusive igneous, and metamorphic rocks.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Nicholas Warner

Funding Sources

None

255 • Comparing the Morphology of Impact Craters in Different Target Lithologies

Jesse Norton

Abstract

Mars is covered in impact craters of varying sizes formed within a diversity of target lithologies, including lava flows and clastic materials (e.g., sedimentary rocks and volcaniclastics). Using 1-meter digital elevation models (DEMs) from the High-Resolution Imaging Science Experiment (HiRISE) and 3D Spatial Analyst tools in ArcGIS, the morphometric variables of impact craters were quantified to reveal differences in the erodibility of craters and ejecta blankets in different target rocks. Craters 100m to 1 km in size were chosen by known geologic context including the Gusev crater lava plains (lava flows), Elysium Planitia (lava flows with possible clastic rocks at depth), Gale Crater (alluvial fan and lacustrine sedimentary rocks), Jezero Crater (deltaic and lacustrine sediments), and Hellas impact basin (light-toned, layered deposits) to evaluate how impact crater morphology varies with lithology in three dimensions. The results of this analysis indicate that craters formed in known clastic rocks are more eroded, and have lower depth-to-diameter and rim

height-to-diameter ratios than craters impacted into basalts. Furthermore, based on ejecta volume data, craters superposed on the lava plains of Gusev Crater (basaltic control locality) are the least degraded of all craters when compared to craters of similar size and age at other locations, including at Elysium Planitia where the InSight lander is thought to rest entirely on basaltic lava. Based on the observed evidence and calculations of crater ejecta, we can conclude that using crater morphology and state of erosion is a good predictor of target base lithology of impact sites.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Nicholas Warner

Funding Sources

None

131 • Mars Crater Morphology and Testing the Erodibility of Ejecta

Mary Noragong, Sarah Alfiero

Abstract

Impact craters around the InSight landing site were measured to test the lithology of the target rocks and erodibility of ejecta. The InSight lander detected seismic waves that indicated a weak layer of rock at depths of 30-80 m beneath basaltic lava. It is hypothesized that this layer could be clastic in origin, which if ejected from local craters, would be more easily eroded by modern Mars surface processes relative to basaltic lavas. ArcGIS Pro was used to measure the volume of craters and continuous ejecta blankets at different degradation states to test their erodibility. The fifty craters were classified based on degradation state. Class 1 are idealized pristine craters and class 6 are the most heavily degraded. Data were plotted to compare volumes of the ejecta and cavity. The data for class 2 craters show that the volume of the ejecta is significantly less than the cavity for only the larger craters that may have accessed the clastic layer. This may indicate that their ejecta is composed of more erodible materials. The volume data for class 6 craters suggest that the cavities degraded faster than the ejecta. Cavities fill by mass wasting and eolian infilling while the ejecta erodes due to mass wasting (inner crater rim) and eolian abrasion. The proposed stratigraphy beneath InSight would indicate a possible hiatus in volcanism on the northern plains of Mars in favor of sedimentation.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Nicholas Warner

Funding Sources

None

281 • Investigating Carbonates in the Sedimentary Record of Conesus Lake, Livingston County, NY

Natalie Wall

Abstract

The Finger Lakes sedimentary record archives a history of annual sedimentation influenced by environmental/biological factors. Harmful cyanoalgal blooms occur during the late summer in Conesus Lake, often with calcite precipitation (whiting). Here, we investigate the carbonate record in the north basin of Conesus Lake to determine the calcium carbonate production role through its history. Piston and Bolivia cores were collected from the northeast basin at 1.4 meters, resulting in a total of 1.53m of archived sediments. The cores were split, imaged, and analyzed for magnetic susceptibility and X-ray fluorescence(XRF) using a multi-sensor core logger. An initial core description was developed from 30 smear slides, and SEM/EDS analysis was used to characterize grain size, texture, and composition. High clastic

and pennate diatom concentrations occurred in the upper 30cm with minimal varve carbonate sedimentation. The remaining 1.23m has varved micritic calcite with an increased abundance of centric and pennate diatoms. Varve intervals show micritic calcite deposition during spring/summer with strongly biogenic re-suspended sediment in winter. Calcite minerals occur as shelly material and nano-<5-micron scale scalenohedral, rhombohedral, and sheet-like morphologies. The calcite textures/grain size within the core suggest the calcite sediments are predominantly biogenic, with evidence of carbonate diagenesis overprinting the biogenic signal. Varve disruption occurred over the last century from human-caused changes impacting the lake chemistry, water cycle, and sedimentation/precipitation rates. The recent calcite precipitation history has a limited record within the core, making connections to a decade-long 'whiting' record challenging.

Subject Category

Science and Mathematics Categories: Geological Sciences

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Jacalyn Wittmer Malinowski

This presentation will also be presented at:

Geological Society of America, Northeastern Section

Funding Sources

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

GLOBAL LANGUAGES AND CULTURES

115 • Coexistence of Traditional and Biomedical Medicine in West Africa: The Case of Senegal

Nora Whorton

Abstract

The spread of Western medical traditions has been introduced to cultures and people that have had a longstanding medical tradition of their own. Traditional medicine is not very common among discourse in the United States. We tend to have complete trust within the medical system, developed in the West, that we find ourselves in. However, that is not the case in other parts of the world. Africa has a rich culture that where traditional healers have been practicing and honing their knowledge and abilities of spiritual and herbal remedies for years. Unfortunately, Africa also has a deeply rooted history of colonization, and to some degree, still does. Regarding medicine, that meant the imposition and assimilation to the biomedical ways of Western European countries. The research I did in Senegal, during the Summer of 2022, focused on not only how and if these two types of medicine could coexist, but the importance of them coexisting to give comprehensive healthcare. I aimed to understand how traditional medicine persisted after colonization, how the two types clash, as well as the effects and implications of the increasing number of biomedical centers constructed in Dakar, the capital of Senegal. Not only that, but my research emphasizes mutual understanding between the caregiver and the patient. Without trust, understanding, and contextualization of the social and cultural environment that the system resides, healthcare cannot be efficient. In Senegal, traditional medicine proves to be an accessible, and trustworthy form of medical treatment even with the existence of biomedical options.

Subject Category

Social Science Categories: Sociomedical Sciences

Faculty Sponsor Department

Global Languages and Cultures

Faculty Sponsor

Kodjo Adabra

This presentation will also be presented at:

National Conference of Undergraduate Research

Funding Sources
None

PHYSICS AND ASTRONOMY

14 • Thin Film Deposition for Scintillator Detectors

Zach Ehret, Mitsuki Tabei

Abstract
A plastic scintillator detector was developed for an experiment carried out at the Laboratory for Laser Energetics (LLE) at the University of Rochester. Scintillators can be used as detectors of energetic charged ions; for this experiment at LLE, scintillators were used to detect protons and deuterons accelerated by laser light during the experiment. However, uncoated scintillators are sensitive to visible light as well as charged particles, and the residual laser light interferes with the measurement of the ions. The Thin Film Evaporator at SUNY Geneseo was used to coat the scintillators with a metal film thick enough to absorb the visible light and thin enough so that the energy loss of the ions was minimized. The optimal film thickness was found to be 200 nm of Aluminum; this thickness was found to block out external visible light without significantly degrading the energy of the charged ions. Samples were mounted above an aluminum source in the bell jar and a base pressure of 10-6 Torr was achieved. By passing a high current through the source holder, a thin film of aluminum was deposited while the thickness of the deposition was monitored using a rate deposition monitor. For some scintillator samples, multiple depositions were required to coat all sides of the scintillator. The coated scintillation detectors performed as expected for the LLE experiments.

Subject Category
Science and Mathematics Categories: Physics
Faculty Sponsor Department
Physics and Astronomy
Faculty Sponsor
K. Fletcher, G. Marcus, S. Padalino
Funding Sources
Funded in part by the US Department of Energy through the Laboratory for Laser Energetics

242 • Measurements of Cosmic Ray Muon Flux During April 8th Eclipse

Aidan Cheeseman, Kevin Cerda

Abstract
Muons are one of the fundamental particles of the universe. They share many properties with electrons, like charge, but are 200 times more massive. Muons are produced naturally when highly energetic particles originating from the sun or from within distant galaxies, interact with the upper atmosphere of the earth. Each one of these highly energetic particles produces a shower of highly energetic and penetrative muons that rain down on the surface of the earth. Using the TeachSpin muon physics apparatus, measurements of the rate at which muons reach the surface of the earth have been made. These measurements show a decrease in the count rate during the night when cosmic ray muons produced by the sun are blocked by the earth. An experiment will be conducted at SUNY Geneseo to measure the muon count rate during the April 8th total eclipse.

Subject Category
Science and Mathematics Categories: Physics
Faculty Sponsor Department
Physics and Astronomy
Faculty Sponsor
Charles Freeman
Funding Sources
None

72 • Using Rutherford Backscattering Spectroscopy to Characterize Targets Used for Nuclear Reaction Cross Section Measurements Performed with Laser-Accelerated Ions

Dylan Christopherson, Kevin Cerda, Shoshanna Hertz

Abstract

A project is underway to develop a platform for measuring low energy nuclear reaction cross sections using light ion beams accelerated from the rear side of targets illuminated with an ultra-intense laser. These ions, accelerated via the target-normal sheath acceleration (TNSA) mechanism, strike a nuclear production target placed behind the laser-illuminated target. The reaction products are collected, and their activity is measured to determine the nuclear cross section. We report on a set of experiments designed to characterize the nuclear production targets. These targets consist of lithium deposited on a substrate and coated with a thin metal film in a deposition chamber. The thin metal film must be thick enough to prevent the lithium from reacting with air during handling but thin enough to allow the projectile TNSA ions to pass through. The thickness of the metal overcoat has been measured using Rutherford backscattering spectroscopy (RBS) at the SUNY Geneseo 1.7 MV Pelletron accelerator. In RBS, an MeV proton or alpha particle beam strikes the target at normal incidence and the energy spectrum of the backscattered ions is measured with a silicon detector. The elemental composition of the target and its thickness can be inferred from the resulting spectrum. (This project is funded in part by a grant from the DOE through the Laboratory for Laser Energetics and by SUNY Geneseo.)

Subject Category

Science and Mathematics Categories: Applied Physics

Special Topic Information

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

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 (2023); Omega Laser Facility Users Group 2024 Workshop

Funding Sources

This project is funded in part by a grant from the DOE through the Laboratory for Laser Energetics and by SUNY Geneseo.

268 • Ripples in a Pond vs Ripples in Spacetime: How the Wave Equation and Einstein's Field Equations Can Be Modeled Using the Same Mathematical Tools

Erin Battaglia

Abstract

My journey of studying gravitational waves around an extreme mass-ratio inspiral (EMRI) began with modeling ripples in a 2D pond. Although these scenarios may be seemingly unrelated, they both share the fundamental physics of waves, with the difference being in the medium that they are propagating in. The Einstein Field Equations, used to represent spacetime curvature around black holes, are 10 coupled nonlinear partial differential equations (PDEs) in comparison to the Wave Equation which is only one linear PDE. Despite the difference in complexity, a Mathematica program was created for each that used the same mathematical procedure to create simulations of waves propagating away from their respective sources. Modeling a simpler scenario, such as ripples in a pond, helped better prepare me to approach a difficult concept in General Relativity. Now, progress is being made in creating more refined models of gravitational waves using different metrics and studying the solution of the EFEs when approaching the Schwarzschild Radius.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor
Thomas Osburn
Funding Sources
Geneseo Foundation Undergraduate Summer Fellowship

227 • Numerically Solving the Teukolsky Equation for Modeling Gravitational Waves

Ian Faerman
Abstract
Gravitational waves have been theorized ever since Einstein discovered general relativity in 1916. However, the evidence for the existence of gravitational waves was only discovered very recently. With the little data and observations we have made, there is much to do in this relatively new field of physics. We hope to create more accurate models to help us understand this young field of physics, analyze the implications of our newfound discoveries, and access further work to be done from there. We hope to achieve this by utilizing advanced applications of both Mathematica and Python to numerically solve and model the Teukolsky equation of gravitational waves.
Subject Category
Science and Mathematics Categories: Physics
Faculty Sponsor Department
Physics and Astronomy
Faculty Sponsor
Thomas Osburn
Funding Sources
None

199 • Target Analysis for a TNS Nuclear Physics Experiment

Lillian Fox, Josephine Hastings
Abstract
Target Normal Sheath (TNS) acceleration is being used at the Laboratory for Laser Energetics (LLE) to produce beams of deuterons with broad energy spectra ranging from 0 to 10 MeV or higher. The deuterons emanate from a laser production target which then strikes a nuclear target. The subsequent nuclear reactions create radioisotopes which decay quickly with half-lives of a few minutes or less. Conventional rabbit or reentrant tube systems are too slow for an external decay counting systems. Thus, the measurements are done in vacuo. During the summer of 2023 the Multi Tera Watt (MTW) Laser was used to generate a sub nano second laser pulse that illuminated the backside of a planer deuterated laser target. TNS deuterons were produced from the front side of the laser target which then struck a layered Tin, Lithium and Titanium substrate nuclear target. Several nuclear reactions occurred in the lithium. One of them was the 7Li(d,n)8Li transfer reaction. 8Li decays via electron emission and has an 838.7(3) second half-life. The electrons are counted with a Phoswich detector in situ and used to determine the reaction cross section. However, short lived isotopes produced in the protective Tin layer of the nuclear target can emit electrons of unknown number. To mitigate the contribution to the count rate, the Gamma-X counting system was used to determine the activation level of the Tin. The results are shown in the poster.
Subject Category
Science and Mathematics Categories: Physics
Faculty Sponsor Department
Physics and Astronomy
Faculty Sponsor
Stephen Padalino
This presentation will also be presented at:
Division of Plasma Physics
Funding Sources
Laboratory for Laser Energetics

134 • Investigation of Photometric Data from Extragalactic Planetary Nebulae

Marcus Kautzman

Abstract

Planetary nebulae (PNe) are formed when a red giant star nears the end of its life. As its internal fuel is consumed, shells of ionized gas are ejected leading to visible clouds. This work focuses on planetary nebulae found outside the Milky Way. The long-term objective for this project is to generate diagnostic indicators to identify extragalactic planetary nebulae and their properties based on photometric data. With this information, conclusions about their distances could be compared to other standard candle methods. The observed PNe properties will be studied for possible correlations with physical galaxy properties.

For this specific work, we examined archival images of 31 galaxies taken by the Hubble Space Telescope to visually search for PNe candidates. Then, for each identified candidate, we extracted its photometric information from the LEGUS photometric catalog using Python. This includes determining the magnitude and color of the candidates for three to five available filters. Using this photometric information, color-magnitude and color-color diagrams were generated. Trends and correlations found in these diagrams are used to establish new diagnostics for PNe in external galaxies.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Anne Pellerin

Funding Sources

None

374 • A 3D Simulator of a 6-Axis Target-Detector Manipulator

Annelise Campo, Dawson Tooker, Bryan Diaz

Abstract

The 15-degree end station of the 1.7 MV tandem Pelletron accelerator is equipped with a six-axis target and detector positioning system. Three axes control (x, y, z) positions of the target, two axes control angular orientations of the target, and the last controls the rotation of the detector. All motors are controlled by toggle switches mounted adjacent to the end station. Five of the axes have no quantitative readout of the positions, but the z-axis has an external ruler to determine the target z-position. The positions of the other 5 axes must be verified by eye through an observation port. A new six axis target and detector positioning control interface is being developed that will use the existing motors, gearboxes, and limit switches, but will provide remote access via a LabVIEW interface system. The heart of the system is a pair of trinamic motor control module (TMCM) control cards that have the same mechanical accuracy as the previous system but allows for increased confidence in the final positioning due to its numerical readout. The system will allow users to save states of all six axes allowing prior configurations to be restored later. The new system incorporates a software panel blocking potentially harmful configurations to the manipulator. A physical model simulating the motion of the six-motor controller was designed, 3D printed and interfaced to the LabVIEW software via a TMCM. Prior to installation of the LabVIEW system, the 3D model will be used to determine the optimal configurations.

Subject Category

Science and Mathematics Categories: Applied Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Ed Pogozelski

This presentation will also be presented at:

American Physical Society Division of Plasma Physics Meeting 2023

Funding Sources

U.S. Department of Energy

302 • Three Filter Photometry of Globular Cluster NGC 6496

Tim Gibbons

Abstract

The goal of the experiment is to calculate the distance and age through photometry of globular cluster NGC 6496. Using three images with different filters from the HST (Hubble Space Telescope), I was able to compare each image and align them to premade isochrones by the Dartmouth Stellar Evolution Database. These images were found on the Mikulski Archive for Space Telescopes (MAST). Using Unix coding commands, I was able to find all stars in each filtered image, align each star in each image and determine the different magnitudes of each star. After we have these values, we put the new aligned list of magnitudes into excel where we can plot the stars to show them along the main sequence. After we have our main sequences plotted, we use the previously mentioned premade isochrones to find the current age and distance. Adjusting and using new isochrones based on how well they follow the data. In doing this experiment, I was able to get a distance modulus of 15.9 ± 0.2 kpc and an age of 10.5 ± 1 Gyr. The excepted values of 16.0 kpc and 10.5 Gyr are proven to be true. Knowing the distance and age of different star clusters in our universe allows us to determine how these types of bodies behave at a certain portion of their life. My conclusion of this experiment is that the HST images are extremely accurate and can be used to analyze these star clusters with great precision.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Aaron Steinhauer

Funding Sources

None

310 • WIYN Open Cluster Study: Photometry of a 2x2 Region of Open Cluster M34

Zephyr Lange, Auralia Derhak

Abstract

Previously at Geneseo, photometry was done on data from a single central region of open cluster M34. We present photometry on an extended 2x2 range of the same cluster, including stars that were not in the original catalog. Our presentation discusses our work of matching and combining data from telescope images, and standardizing magnitudes to create a final catalog. With this, we derived the parameters of M34, and present values of cluster age and distance.

Subject Category

Science and Mathematics Categories: Physics

Special Topic Information

Faculty Sponsor Department

Physics and Astronomy

Faculty Sponsor

Aaron Steinhauer

Funding Sources

National Science Foundation 1909005

POLITICAL SCIENCE AND INTERNATIONAL RELATIONS

312 • A Discussion on the Topic of Race and American Politics

Andrew Alsup

Abstract

This project examines the literature in political science on race and American politics and reviews and discusses the findings in this area. This project looks at the role that race has played in the American politcal system such as civil rights, public opinion, outcome of elections, and other issues.

Subject Category

Social Science Categories: Political Science

Special Topic Information

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeffrey Koch

Funding Sources

None

335 • An Analysis of the Effectiveness of Food and Housing Programs for the Poor

Emilee Meadors

Abstract

This research project intends to analyze the effectiveness of food and housing programs that serve those who are low income in the United States. This research will be performed through an analysis of current policy related to social welfare programs that deal with food and housing in the United States. This will be done to determine their impact in reducing income inequality, as well as their ability to provide adequate services. Finally, this project will propose policy recommendations in order to address some of the identified pitfalls in social welfare programs that deal with food and housing.

Subject Category

Social Science Categories: Political Science

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeffrey Koch

Funding Sources

None

167 • Time for an Addition: Expanding the House of Representatives

Kieran Kelley

Abstract

This project examines the potential benefits and drawbacks of increasing the membership of the U.S. House of Representatives. At one point the size of the House grew alongside the country, but since 1913 has been capped at 435 members. Historical arguments for and against a larger House will be analyzed, alongside contemporary arguments and its impact on representation. Potential consequences of expansion, such as increased efficiency, responsiveness to constituents, and potential logistical challenges, will be explored.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeffrey Koch

Funding Sources

None

60 • Proposal of 29th Amendment to the U.S. Constitution, Age Maximum of 75 Years for Members of Congress

Nicholas Parks

Abstract
Within the U.S. government there is no age maximum at which a citizen is not allowed to run or hold political office. Despite there being no age maximum, there are age minimums, with the Senate having an age minimum of 30 and House of Representatives having an age minimum of 25. Although age maximums do not exist, a new amendment to the Constitution, that being the 29th, outlining an age maximum of 75 solely for members of Congress, would help the legislative body adjust to the changing times and force new ideas and people into the government.

Subject Category
Social Science Categories: Political Science

Faculty Sponsor Department
Political Science and International Relations

Faculty Sponsor
Jeffrey Koch

Funding Sources
None

345 • Interest Groups and Democratic Legitimacy: Analyzing the Influence and Impact of Interest Groups on Election Polling/Results

Pamela Flores

Abstract
James Madison warned the American government that the establishment and/or expansion of factions will lead to the deterrence of Democracy. Factions or interest groups, as they will be referred to as in this research, have illustrated bias tendencies when it comes down to their decisions making. Simply put, people within a specific interest group will pursue their own interests and exclude any actions or decisions that may benefit the opposition. In this research we will explore the effects interests' groups bias has affected American Democracy by actions taken by voters themselves, such as assigning blame, making limited economic voting decisions, absolute trust in the media and most importantly of all, the decrease in the overall amount of confidence in knowledge about candidate's political agenda. We will further explore the influence of having a majority two-party government has had and will continue to have upon our government. In addition, to analyzing how the increased growth and trust of media information has led to many misinformed Americans to base their political off.

Subject Category
Social Science Categories: Political Science

Special Topic Information
Ideas that Matter: Myth and Science (https://www.geneseo.edu/provost/ideas-matter)

Faculty Sponsor Department
Political Science and International Relations

Faculty Sponsor
Jeffrey Koch

Funding Sources
None

169 • Why Representation Matters: Examining the Role of Congressional Racial Diversity on Political Engagement

Zoe Navratil

Abstract

The current United States Congress is historically the most racially diverse, but the voter turnout gap between white and Black voters continues to grow exponentially. This research aims to form connections between Black congressional representation and the political participation of Black voters in elections. I will examine factors such as the importance of descriptive representation, implications of intersectional identities, and the concept of identity politics as related to race. Furthermore, I will offer potential solutions to increase political participation among Black voters such as expanding and codifying voting rights for racial minority groups.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeffrey Koch

Funding Sources

None

384 • Interest Groups and Democratic Legitimacy: Analyzing the Influence and Impact of Interest Groups on Elections/Results

Pamela Flores

Abstract

James Madison warned the American government that the establishment and/or expansion of factions will lead to the deterrence of Democracy. Factions or interest groups, as they will be referred to as in this research, have illustrated biased tendencies when it comes down to their decisions making. Simply put, people within a specific interest group will pursue their own interests and exclude any actions or decisions that may benefit the opposition. In this research we will explore the effects interests' groups bias and how it has affected American Democracy through actions taken by voters themselves, such as assigning blame, making limited economic voting decisions, absolute trust in the media and most importantly of all, the decrease in the overall amount of confidence in knowledge about candidate's political agenda. We will further explore the influence of having a majority two-party government has had and will continue to have upon our government. In addition, to analyzing how the increased growth and trust of media information has led to many misinformed Americans to base their political knowledge off of.

Subject Category

Social Science Categories: Political Science

Special Topic Information

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

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Jeffrey Koch

Funding Sources

Professor Koch

PSYCHOLOGY AND NEUROSCIENCE

261 • Facets of Dispositional Empathy for Nature Mediate the Relation between Empathy and Environmental Intentions

Anthony Carvalho, Anna Arehart, Iris Tyler, Victoria Grann

Abstract

Previous research shows that Dispositional Empathy for Nature (DEN) mediates the relation between empathy for other humans (EC) and environmental intentions (EI). However, DEN is a multi-dimensional construct that includes both

empathy for nature and the ability to take nature's perspective. The current study investigated whether these subdimensions of DEN mediated the relation between EC and EI. Results indicated a serially mediated path from EC through perspective taking for nature to empathy to nature to EI. There was also a separate mediated path from EC to empathy to nature to EI that did not include taking nature's perspective. Practical and theoretical conclusions will be discussed.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

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

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jim Allen

Funding Sources

None

249 • Energy Return on Investment: A Critical Problem for Modern Efforts to Meet the Climate Challenge

Iris Tyler, Anthony Carvalho, Anna Arehart, Victoria Grann

Abstract

Energy return on investment (EROI) refers to the energy available for consumption after accounting for the energy required to produce energy. For example, energy is required to operate oil drilling equipment. Therefore, the total energy available for consumption is the energy required minus the energy produced. This is important because modern energy sources require an ever increasing amount of energy to function. Therefore, the energy available to consumers is reducing, even though absolute energy production increases. There are differing perspectives about solutions to modern environmental problems. The Green Growth perspective argues that we can move to non-fossil fuel alternatives and maintain our present lifestyles. However, the Degrowth perspective argues that EROI and other considerations make Green Growth impractical. Specifically, alternative, non fossil fuel sources of energy have high EROI values because they require a lot of energy to produce energy. Therefore, the EROI perspective suggests that society should think in terms of degrowth instead of continued growth. This could mean decreases in the quality of life, particularly for affluent Americans. However, this is not necessarily the case; some research suggests that happiness will be higher in a non-growth, less materialistic society. This poster will expand on these arguments and review theory and data suggesting that the Degrowth alternative can offer an environmentally plausible solution to the climate crisis that also increases human well- being.Our current study is an ongoing literature review of EROI, where we aim to compile the present EROI literature and introduce it and degrowth to psychologists.

Subject Category

Social Science Categories: Sustainability Studies

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jim Allen

Funding Sources

None

189 • The Broaden and Build Theory of Positive Emotions

Meg Pappalardo, Emily Cortese

Abstract

The Broaden and Build Theory of positive emotions is a predictor of human life potential and happiness. This theory proposes that experiencing positive emotions can broaden thoughts and behaviors, which can lead to greater psychological and physical health. We will demonstrate how the Broaden and Build Theory explains how individuals with positive emotions tend to have more success socially, personally, and emotionally. We will discuss the research comparing the skills individuals with positive emotions have to those with less positive emotions, and how experiencing positive emotions can increase personal resources. Our project will explain how positive emotions can lead to an increase in the amount of skills for individuals to obtain. This will then explain how overall life satisfaction and personal development are positively impacted through exposure to positive emotions.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jim Allen

Funding Sources

None

248 • Empathy and Pro-environmental Behaviors: Investigating Human Altruism and its Link to Pro-environmental Behaviors

Victoria Grann, Anna Arehart, Anthony Carvalho, Iris Tyler

Abstract

Through the empathy-altruism hypothesis, Batson predicts empathetic concern influences altruistic motivation, which may lead to helping behaviors (Batson et al., 2014). Environmental researchers borrowed this idea and have produced a rich literature showing that empathy is associated with pro-environmental behaviors (PEB). This poster describes an ongoing literature review of this area of research. Our preliminary results show that empathy and associated constructs consistently predict PEB, although these relations are often of modest size. However, the literature is somewhat theoretically confused with no overarching explanation of why these relations exist. We hope to remedy this in our review by examining whether the specific factors that Batson found essential in the human altruism literature also apply to the environmental literature. For instance, the human altruism literature shows that empathy predicts helping only when the potential target is perceived as needy and deserving. Our review will examine whether this and other features of Batson's theory help sharpen the predictions in the environmental literature. To accomplish this, we are conducting a systematic search of both PsycInfo and Google Scholar using pre-specified search terms with strict criteria about eligible studies.

Subject Category

Social Science Categories: Psychology

Special Topic Information

The environment and/or sustainability

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jim Allen

Funding Sources

None

139 • Neurobiological Changes Associated with a Ketogenic Diet in a Mouse Model of Autism Spectrum Disorder

Abigail Grzeskowiak, Abigail Schwartzman, Madison Forcier, Gabrielle Skiba

Abstract

Impaired social interaction is one of three key diagnostic criteria for Autism Spectrum Disorder (ASD). Other criteria for ASD include repetitive behavior and impaired communication skills. The prevalence of this developmental condition is increasing within the United States, yet no cure is currently available. The ketogenic diet (KD) is a high fat, low carb diet that can help many neurological issues in humans, such as epilepsy. This study investigates the effects of KD on social and repetitive behavior using an inbred mouse model genetically predisposed to developing stereotypic behaviors, specifically, repetitive circling. We compared locomotor and social behaviors of older male FVB mice fed KD or standard lab chow. Although we hypothesized that three weeks of KD would increase social interaction and decrease repetitive behavior, we did not find significant effects of KD on behavior in this cohort of mice. To investigate neurobiological changes associated with KD, we compared the expression of cell bodies, astrocytes, and dopamine 2 receptor proteins in the dorsolateral striatum, which is important in movement selection. Because stereotypic mice circle in a preferred direction, we also checked for differences between the contralateral and ipsilateral hemispheres.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

None

284 • Alcohol Use, Neuroinflammation, and a Ketogenic Diet in a Mouse Model of Alcohol Use

Dhavan Brahmbhatt

Abstract

Ketogenic diet (KD) is a diet with high fat, moderate amount of protein and low carbohydrate. KD has been known for many therapeutic purposes, including alcohol abuse. This project focuses on how KD affects cognitive performance in mice administered alcohol. Three groups of mice were used in this study; one group was given 20% EtOH and KD, another group with only 20% EtOH, and the last group without 20% EtOH or KD which was our control group. Before the alcohol administration period began, the KD mice were fed KD for 1 week. Then, mice assigned to EtOH groups were injected intraperitoneally for 10 days in a row, and no-alcohol controls were injected with 0.1mL saline. We found that mice fed KD performed better in a test of working memory. Alcohol moderately increased latencies in the maze and beams broken in a locomotor test. No differences were found in the hippocampus following a stain that shows cell bodies.

Subject Category

Science and Mathematics Categories: Neuroscience

Special Topic Information

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

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

Geneseo Foundation Undergraduate Summer Fellowship

132 • How Does a Genetic Risk for Alzheimer's Disease and Alcohol Use Affect Memory in a Mouse Model?

Madison Forcier, Lena Kiehl, Abigail Grzeskowiak, Brooke Witherow

Abstract

Alzheimer's disease (AD) is the most common type of dementia, characterized by progressive memory loss and cognitive decline. The prevalence of this disorder is expected to be on the rise, and affects a great number of people. APOE4 is a variant allele found to increase the risk of AD. In addition, the consumption of alcohol exacerbates the onset and magnitude of AD, while also having its negative effects on cognition, potentially by increasing neuroinflammation. We have a knock-in mouse model with the human APOE4 gene that will be used to test the effects of this gene (APOE4) by environment (alcohol) interaction on memory. We expect to observe cognitive impairments that emerge over time due to the increased APOE4 gene expression. We also hypothesize that alcohol will exacerbate the risk of early cognitive impairments in the APOE4 mice compared to the control mice. Understanding how everyday choices such as alcohol use can interact with our genetic predisposition to AD has significant potential to improve individual outcomes.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

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

318 • Interactions Between Hormonal Phases and Caffeine on Repetitive Circling Behavior in Mice

Madison Geddes, Lena Kiehl, Sophia Azurin

Abstract

Autism Spectrum Disorder (ASD) has been found to be associated with abnormalities in several neurotransmitters including adenosine. Adenosine is important in energy production and affects brain functions such as sleep, alertness, and cognition. Caffeine is an adenosine receptor antagonist and one of the most widely consumed drugs in North America. Previous studies have found that small doses of caffeine antagonizing adenosine A1 and A2A receptors stimulates locomotor activity. In a mouse model of ASD, we tested the effects of caffeine on repetitive motor behavior, one of the diagnostic criteria for ASD. In addition, we were interested in the interacting effects of hormonal phase and caffeine on repetitive behavior. The mice used in this study are genetically predisposed to repetitive behaviors, specifically, circling. The purpose of this study is to determine the influence of the estrous cycle and caffeine on repetitive circling behavior in mice. Estrous samples were taken from each subject. Proestrus and estrus mice were noted to be in a "hot" phase (when progesterone peaks) while mice in metestrus and diestrus were said to be in a "cold" phase. Mice were injected with either saline or caffeine then observed for motor behaviors. Initial results suggest locomotor behavior increases when progesterone is high. A moderate effect of caffeine to increase circling in stereotypic mice was found. Results have broad implications for interacting effects of hormones and drugs on behavior, and for greater caffeine sensitivity in ASD.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

None

319 • Characterization of Motor Performance in a Mouse Model of Autism Fed a Ketogenic Diet in Early Adolescence

Sophia Azurin

Abstract

The ketogenic diet (KD) has long been used to control epilepsy, but more recently has also been shown to improve symptoms of Autism Spectrum Disorder (ASD). ASD is a highly prevalent disorder, characterized partially by repetitive behavior. Genetics, environmental conditions, and resultant injury to the brain, have been linked to an increased risk for ASD. KD is thought to work as an anti-inflammatory and has been shown to decrease repetitive behavior in a mouse model of ASD; but, how KD works within ASD is not well understood. This project works with a mouse model of ASD to determine if early KD intervention prevents the development of ASD behaviors in mice, and explores if glial fibrillary acidic protein (GFAP), a marker of inflammation, may be how KD helps ASD. It is hypothesized that mice that develop repetitive behavior will show altered expression of GFAP that will be restored by KD intervention.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Allison Bechard

Funding Sources

Geneseo Foundation Undergraduate Summer Fellowship, Dr. Wendell and Barbara Rhodes Research Award

151 • Marijuana Motives and Different Class Standings Among College Students

Madison James, Riley Kawola, Bridget Maddigan

Abstract

With increased accessibility to cannabis due to recreational legalization, cannabis use frequency has been steadily increasing among college students within the United States (Kerr et al., 2023). There is limited research on why students are motivated to use cannabis at different points in their college experience. Motives are the reasons for using substances, which can vary amongst individuals. To address the research gap, it's necessary to examine cannabis motives based on class standing. Data for these analyses were drawn from a larger investigation of cannabis use and emotion regulation in college students attending SUNY Geneseo. Participants were students enrolled in a Psychology 100-level course (N= 72) surveyed during the 2021-2022 academic year. Participants completed an online survey, which included the Marijuana Motives Measure (MMM), which measures social, conformity, coping, enhancement, and expansion motives (Simons et al., 1998). Using t-tests to compare mean differences among class standings, we hypothesized that juniors and seniors will report more enhancement motives, while first- and second-year students will report higher expansion and conformity motives. Lastly, it is hypothesized that there will be no significant difference between coping or social motives by class standing. A limitation of this investigation includes a majority of the population being first-year students. Findings will help us to understand reasons behind marijuana use on college campuses and can guide educational interventions and training provided for college students, as well as, faculty to focus on reducing cannabis use among those who are not intrinsically motivated to do so.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

Funding Sources

None

149 • Emotion Dysregulation Predicts Alcohol and Cannabis Co-Use Among College Students

Trystan Melas

Abstract

Previous research has established that alcohol and cannabis co-use is linked to more negative consequences than the discrete use of either substance. However, there is little research connecting an individual's emotion regulation abilities—the capacity to adequately respond to one's emotional experiences—to alcohol and cannabis co-use. This study aims to investigate the relationship between emotion dysregulation and co-users of alcohol and cannabis. Participants composed of SUNY Geneseo students (N = 150) studying psychology who completed an online survey regarding their alcohol and cannabis use behaviors and emotion regulation behaviors. Binary logistic regressions were used to examine the relationship between the 18-item Difficulties in Emotion Regulation Scale (DERS-18; Victor & Klonsky, 2016), its subscales, and one item pertaining to alcohol and cannabis co-use retrieved from the PhenX Toolkit Ver 39.0 (Hamilton et al., 2011). It was hypothesized that the overall DERS-18 scores as well as the goals, impulse, clarity, and strategy subscales would positively correlate with the alcohol and cannabis co-use item retrieved from the PhenX Toolkit Ver 39.0. The odds ratio for the Total DERS-18 Score is Exp(B) = (1.054), suggesting that those who score higher on the DERS-18—those who are more emotionally dysregulated—are 1.054 times more likely to co-use. The odds ratios for the Strategy, Goals, and Clarity subscales were also significant. These findings are consistent with the existing literature and will be useful in developing interventions aimed at minimizing the risk associated with polysubstance use among college students.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Whitney Brown

Funding Sources

None

36 • Quality of Social Engagement Between Siblings and Friends During Early and Middle Childhood

Abigail Harrington, Alexa Johnson, Alexis Bertrand, Emily Trabulsi

Abstract

In a longitudinal study of 22 white, middle-class American children aged 4 and 7, we investigated social engagement with siblings and friends during various tasks. Analyzing videotaped interactions, we found age, gender, and task effects on both the amount and quality of engagement. While previous research indicated greater time spent with friends than siblings, our study revealed a nuanced view, considering positive, neutral, and negative engagement. At age 4, children showed more engagement with friends, a pattern consistent at age 7 across different tasks. Positive engagement dominated, with boys displaying more negative and neutral engagement at age 4, evening out by age 7. In contrast, girls exhibited slightly more negative and neutral engagement at age 7. Quality of engagement varied, emphasizing the need for nuanced exploration of sibling and friend dynamics as children develop. The study highlights the complexity of interactions and prompts further investigation into contextual factors influencing positive, neutral, and negative engagement.

Subject Category

Social Science Categories: Psychology

Special Topic Information

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

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

This presentation will also be presented at:
Association of Psychological Science
Funding Sources
None

24 • Averted Conflicts Between Siblings and Friends in Childhood and Adolescence

Adele Beltrani, Madeline Sepcaru, Sophia Bobeck, Olivia Biesinger
Abstract
As part of a longitudinal study, we examined sibling and friend-averted conflicts in semi-structured closed-field situations from early childhood, middle childhood, and adolescence. Observed conflicts are exchanges containing mutual opposition or provocation, whereas averted conflicts are oppositional physical or verbal behavior that the partner does not reciprocate. In extending this study to focus on averted conflicts, we expected that averted conflicts would be more frequent in sibling relationships than in friend relationships and decrease with an increase in age. Our data showed more averted conflicts for sibling pairs than friends at all three periods. Overall, there was an increase in averted conflicts from early to middle childhood but a decrease from middle childhood to adolescence. The reduction was more significant for siblings than for friends throughout development. Gender composition of the sibling pairs made some difference in the rate and affective intensity of averted conflicts with siblings and friends. Our results illuminate the multifaceted nature of conflict resolution in sibling and friend relationships, providing insights into developmental trajectories and contributing factors that shape these dynamics over time. This study illuminates the multifaceted nature of conflict resolution in sibling and friend relationships, providing valuable insights into the developmental trajectories and contributing factors that shape these dynamics over time.
Subject Category
Social Science Categories: Psychology
Special Topic Information
Faculty Sponsor Department
Psychology
Faculty Sponsor
Ganie DeHart
This presentation will also be presented at:
American Psychological Science
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

82 • 7-Year-Olds' Aggression and Rough-and-Tumble Play with Siblings and Friends

Anna Shepard, Lena Kiehl, Phoebe Brenner, Rachel Ntor
Abstract
Although physical rough-and-tumble play (RTP) has been widely studied in early childhood, there has been little research on RTP in middle childhood. During middle childhood, physical aggression declines, while verbal and relational aggression become increasingly common and significant. It is reasonable to assume that similar changes may occur in various forms of RTP. However, we know very little about the nature or prevalence of verbal or relational RTP in middle childhood, or about how RTP might be related to physical, verbal, and relational aggression in this age group. As part of a longitudinal study of sibling and friend relationships, we examined aggression and RTP in middle childhood. White, middle-class 7-year-olds from western New York were videotaped at home in separate sessions with a sibling and a same-aged friend. During each session, the children completed a construction task, played an unfamiliar board game, and spent time in free play. Sessions were videotaped, transcribed, and coded for physical, verbal, and relational aggression and RTP. Our study demonstrates the occurrence of multiple forms of RTP in sibling and friend interactions during middle childhood. Partner, task, and gender composition of sibling pairs all made a difference in rates of the various forms of aggression and RTP. RTP and aggression did appear to be related to each other, although the

connections between them varied, depending on partner and gender, as well as the particular forms of RTP and aggression.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Ganie DeHart

Funding Sources

None

53 • Sarcasm and Jocularity in Adolescent Sibling and Friend Interactions

Grant Edmondson, Tyler DiPonzio, Hannah Phillips

Abstract

As part of a longitudinal study of sibling and friend relationships, we analyzed the ways adolescents use jocularity and sarcasm in their interactions. Although verbal irony is pervasive in adolescents' conversations, there has been little observational research on their use of verbal irony, with almost no attention to the influences of the interaction partner. Based on what we know about adolescents' social and linguistic behaviors with siblings and friends, we expected that interaction partner would make a difference in how adolescents used verbal irony. Fifty-three adolescents (26 girls) were videotaped at home in separate 15-minute cooking sessions with a sibling and a same-gender friend; 30 of the sibling dyads were same-gender. The videotapes were transcribed and coded for verbally ironic utterances. Each instance of verbal irony was further coded as sarcastic or jocular, as being used primarily to mitigate or to intensify the impact of an utterance, and for form of counterfactual statement and communicative function. Despite adolescents' reputation for sarcasm, jocularity was considerably more common in both sibling and friend interactions. Interaction partners clearly played a role in the use of sarcasm and jocularity, but individual differences were also important. Further analysis is needed to determine the contexts in which adolescents use sarcasm and jocularity with siblings and 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 Sciences Conference 2024

Funding Sources

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

321 • Chinese-American Adoptee College Students' Concepts of Sibling Relationships

Lauren Martin, Mandy Xiang, Elizabeth Tsang, Lyndon Lowenstein-Niu, Hermei Herman

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

Special Topic Information

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)

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

Lia Carswell, Annabella Vargas, Genevieve Wright, Marissa Clarke, Ariane Dabideen, Alexandra Ayers

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 include: (1) being an enrolled college student between the ages of 18 and 25; (2) self-identifying as Latinx or African Immigrant; (3) have at least one sibling and, for African Immigrant participants, be a first or second-generation immigrant. Immigration status and length of time in the United States will not be factors for exclusion due to the sensitive nature of the topic. Additionally, students studying abroad at SUNY Geneseo will also be included to broaden the participant pool. By conducting this research, we hope to learn more about the way the concept of mental health varies from culture to culture.

Subject Category

Social Science Categories: Psychology

Special Topic Information

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)

145 • Gender and Affiliative/Assertive Language Use by 7- & 17-year-olds with Siblings and Friends

Natalie Thurston, Ameachi Odey, Aaron Cohen, Maisie Slesak, Sadie Stadler

Abstract

Research on gender differences in children's use of affiliative and assertive language has focused primarily on naturalistic observation of interactions with same-gender peers. Studies (e.g. Leaper & Ayres, 2007) have suggested that boys use more assertive language than girls do, and that girls tend to use more affiliative language. Past studies in our lab have suggested that gender differences observed in peer interactions are not always seen in sibling interactions. As a part of a longitudinal study, 7- and 17-year-olds' use of assertive and affiliative language was examined during cooperative age-appropriate tasks. At each age, both tasks were done separately with a sibling and with a friend. Transcripts of these sessions were coded for the presence of assertive and affiliative utterances. Assertive utterances were defined as those used primarily to accomplish a goal, whereas affiliative utterances were those intended primarily to establish or maintain contact with others. Based on previous findings in our lab and contrary to findings by most other researchers, we expected that gender differences would be more pronounced during interactions with friends than during interactions with siblings. Previously reported patterns of girls using more affiliative language than boys held true during interactions with friends, but there were no gender differences in the use of assertive language with friends at either age. Gender effects for assertive and affiliative language use with siblings did not match the previous peer findings at either age. Boys' and girls' use of assertive and affiliative language is more complicated than indicated by past studies.

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

None

386 • The Effect of Task on 7-Year-Olds' Prosocial Behavior Toward Siblings and Friends

Megan Howard, Alyssa Kocher, Tavian Bell, Maddie Rolston

Abstract

Our research focuses on the prosocial behavior of 7-year-olds towards siblings and friends during tasks. We observed that gender, partner, and task influenced the frequency and nature of prosocial acts, underscoring the importance of social context in understanding children's behavior. We focused on how free-play and construction tasks impact prosocial behavior among 7-year-olds with siblings and friends. We documented their interactions and coded videos to identify prosocial behaviors. At this age, children are navigating new social environments and acquiring interpersonal skills rapidly. We anticipated higher rates of prosocial behavior during free-play due to the freedom offered for utilizing newly acquired relational skills. Our study involved 44 white, middle-class families from western New York, with equal gender representation among target children. Prosocial behavior was defined as any voluntary action intended to benefit others. Each child participated in separate free-play and construction sessions with a sibling and a friend, which were videotaped and analyzed for prosocial behaviors, social dynamics, affective intensity, and spontaneity of behavior. We discovered intricate effects influenced by partner, task, and gender. Both girls and boys exhibited more prosocial behavior with siblings than friends, with variations based on task and sibling gender. Prosocial behavior increased during construction tasks, possibly due to the collaborative nature of building. While overall gender effects were absent, interactions involving target child and sibling gender were notable. Our findings highlight the nuanced interplay of gender, partner, and task in shaping children's prosocial behavior, emphasizing the diverse responses of boys and girls to different social demands.

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)

170 • To Report or Not Report: Implications for Victims of Sexual Assault

Nieve Mahood, Adele Beltrani, Cora Orego, Cam LaRosa, Julia Occhi

Abstract

Sexual assault is a widespread problem that disproportionately affects women; one in four women will be sexually assaulted in their lifetime (Morgan & Ouderkerk, 2019), with many of these assaults going unreported. There are a variety of reasons for why a rape victim may choose not to report their assault, including shame, disbelief from law enforcement, and self-blame (e.g., Naseralla & Warner, 2019). Further, Black victims are less likely to report their assault, which may occur because Black victims are consistently blamed more for their assaults than White victims (e.g., Dupuis & Clay, 2013). Our current work seeks to examine how evaluations of victims who do or do not report their assault are influenced by racialized stereotypes found in acquaintance rapes, as well as how reporting decisions impact participant perceptions of assault severity and general endorsement of rape myths. While data collection is ongoing, preliminary analyses reveal that a White victim's assault is seen as equally serious regardless of if they choose to report or not, however if a Black victim reports, their assault is seen as more serious than if they do not. Additional findings related to the impact of participant gender and victim demographics will also be discussed.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Claire Gravelin

Funding Sources

None

290 • Concurrent Neural Activity Predicting Empathy Processing Task Accuracy and Symptomatology

Michelle Fitting, Julia Vaughan, Alexandra Young, Maxwell Mesi, Taryn DeFusco

Abstract

Previous research has investigated the link between emotional processing and internalizing symptomatology. The current study aimed to identify unique patterns of neural activation in response to two different empathy-related tasks. In addition, this study examined whether specific profiles of neural activity and task performance were predictive of internalizing symptomatology. Functional near-infrared spectroscopy (fNIRS) was employed to assess concurrent neural activity by measuring blood oxygenation in the dorsolateral prefrontal cortex during two cognitive tasks. The first task was the Frith-Happe Stimulus Set, which consisted of triangles interacting in various ways. This task measured Theory of Mind, which is one's ability to understand the mental states of another person – or in this case, inanimate triangles. The second task was the EU Empathy Stimuli, which consisted of vignettes of individuals engaging in social interactions. After each vignette, participants were asked to identify the emotion each individual was feeling. Following the conclusion of these tasks, participants completed self-report questionnaires pertaining to various forms of internalizing psychopathology. Analysis consisted of comparing unique patterns of concurrent neural activation with participants' performance on both tasks. Subsequently, patterns of neural activation and task performance were associated with

internalizing symptoms. We hypothesized elevated patterns of neural activation during both the Frithe-Happe and EU tasks to be significantly associated with both greater task accuracy and internalizing symptomatology. Such correlations may shed light on the cost that inefficient use of neural and cognitive resources for empathy processing exerts on internalizing symptomatology.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Michael Lynch

Funding Sources

None

235 • Resting State Neural Activity Predicting Psychopathology and Neural Efficiency during Empathy Processing Tasks

Michelle Fitting, Julia Vaughan, Taryn DeFusco, Alexandra Young, Maxwell Mesi

Abstract

Resting state activity has been shown to be correlated with variations in trait empathy, and has also been demonstrated to predict symptomatology. Our study investigates how differences in resting state neural activity predict concurrent neural activity during cognitive tasks involved in empathy processing, as well as how this relationship correlates to well-being. Using functional near infrared spectroscopy (fNIRS), we monitored blood oxygen levels in the dorsolateral prefrontal cortex during a resting state condition and while participants performed two empathy-related tasks. Resting state neural activity was measured by having participants look at a static fixation cross on a screen in front of them for 2 minutes while being monitored by the fNIRS device. Next, two tasks – the Frith-Happé Animations and the EU-Emotional Stimulus Set – were administered to assess empathy processing. We expect to find two primary groups of elevated and non-elevated activity within the resting state condition. Prior studies suggest that elevated resting state activation indicates hypervigilance that may have cognitive and emotional costs. The current study aims to investigate if this activated group shows heterogeneity in brain activation during empathy-related tasks, and if this variance predicts differing levels of symptoms. We anticipate that some individuals starting in an overly primed state may be able to modulate activation in response to specific task demands, correlating with better outcomes in empathy processing and mental health. Conversely, some initially overactivated may remain vigilant, resulting in less optimal outcomes. The ability to reduce unnecessary activation and appropriately allocate resources may be advantageous.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Michael Lynch

Funding Sources

None

291 • Resting State Neural Activity, Empathy, and Their Association with Internalizing Symptomatology

Michelle Fitting, Maxwell Mesi, Alexandra Young, Taryn DeFusco, Julia Vaughan

Abstract

Resting state neural activity has been shown to impact trait empathy, but the impact of these activation patterns on empathy processes associated with psychopathology is unclear. Using functional near-infrared spectroscopy, blood-oxygenation levels in the dorsolateral prefrontal cortex are measured during a resting-state and while the participants are completing emotion-recognition tasks. After collecting resting state data, we will administer a Theory of Mind task,

the Frith-Happé Animations Test, in which participants will classify interactions between two animated triangles as mental, physical, or random. Correctly identified mental interactions will be followed by asking which emotion best fits each triangle. Next, we will administer an abbreviated form of EU Empathy Stimuli. Participants will view videos depicting emotionally salient social interactions and identify the emotions present in each video. After both tasks, participants will complete self-report scales to assess internalizing symptoms. Resting state activity will be compared to both the participants' accuracy on each task and internalizing symptoms indicated in the self-report. Data collection is expected to be completed in the upcoming weeks, subsequently allowing the completion of analysis. We hypothesize elevated patterns of resting state activation will predict better emotion-recognition task performance, which in turn will predict internalizing symptoms for some individuals. For these individuals, heightened awareness of the emotional states of others may be a form of hypervigilance and be associated with internalizing problems such as anxiety. Analysis of our data will provide greater insight into the predictive nature of heightened baseline neural activity upon both empathic processing and internalizing symptomatology.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Michael Lynch

This presentation will also be presented at:

Reid Psychology Research Conference

Funding Sources

None

62 • Tetrahydrocannabinol Produces Cognitive Deficits by Altering Development of GABA Neurons in the Hippocampus

Allyson Surowick, Evan Eshenaur, Aidan Riley

Abstract

THC is a potent agonist of the CB1 receptor in humans and rats. CB1 is widely expressed in the developing brain where it regulates neuronal migration, axonal growth, neurotransmitter development and synaptogenesis. CB1 receptors are highly concentrated on inhibitory GABA neurons in the hippocampus, a structure that is critical for learning, memory, and attention. Consequently, exposure to THC during development could disrupt the integrity of hippocampal GABA neurons leading to behavioral impairments. To examine this hypothesis, brains were collected from rats that were exposed to THC throughout the perinatal period. Brains were sectioned and stained for GABA immunoreactivity in the hippocampus. Light microscopy and ImageJ software is currently being used to determine if staining intensity in the dentate gyrus, CA1, and CA3 hippocampal fields is reduced by THC.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Vincent Markowski

Funding Sources

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

341 • Perinatal Use of Tetrahydrocannabinol Impairs Maternal Care and Increases Pup Attrition in Long-Evans Rats

Danielle Roemer, Sharlenn La, Annabella Vargas, Hermei Herman

Abstract

Cannabis is increasingly used by pregnant or breastfeeding women as a type of folk medicine treatment for anxiety, depression, body aches and pains, and to improve sleep. However, the amount of cannabis that is typically consumed for these symptoms contains enough tetrahydrocannabinol (THC) to produce sensory distortions and cognitive impairments. Very little research has investigated the effects of THC on the amount and quality of maternal care. To test this, female rats were administered a single daily dose of 0, 2, 5, or 10mg/kg THC from the first day of gestation until pups were weaned. Pup retrieval tests were conducted 1hr after dosing on postnatal days 1, 3, and 5 and maternal care behaviors were recorded in the home cage. All 3 doses of THC significantly reduced pup retrieval. In their home cage, dams showed a dramatic increase in locomotor activity, repetitive self-grooming, sleeping away from their pups, and pushing or piling of cage bedding for 2hrs after THC dosing. This disruption of voluntary, appetitive maternal care was associated with a significant increase in pup deaths during the first 8 postnatal days. This data suggests that more research should be aimed at the negative effects of perinatal THC use on the mother-infant dyad.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Vincent Markowski

This presentation will also be presented at:

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114 • Juvenile Exposure to Tetrahydrocannabinol Affects Anxiety in Adult Long-Evans Rats

Evan Eshenaur, Aidan Riley, Annabella Vargas, Caleb Clarke, Hermei Herman, Sharlenn La

Abstract

Acute administration of THC has been shown to have 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 hypothesized that exposure during the juvenile period will have sex-specific effects on anxiety when measured in the elevated plus maze (EPM). To test this, rats were administered a daily oral dose of 0, 5, or 10mg/kg THC from postnatal day 22-40 and their behavior in the EPM was recorded after they reached adulthood. The EPM is 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 female rats are more sensitive to the anxiogenic effects of THC.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Vincent Markowski

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National Institute on Drug Abuse grant number 1R15DA042390-01A1 to V. Markowski

63 • Patterns in the Quality of Other-Sex Friendships: Associations with Adjustment

Devin Brazell, Blake Tripodi, Jenna Zon, Lily Finnegan

Abstract

Friendships that are high in positive features and low in negative features are considered the highest quality friendships. Adolescents who have high-quality friendships report fewer internalizing and externalizing problems than adolescents with low-quality friendships (Buhrmester, 1990). Most research focuses on one aspect of friendship quality at a time (e.g., positivity with behavior problems, negativity with behavior problems) instead of the overall quality of the friendship. Moreover, not all low quality friendships are alike, and they may be associated with adjustment in different ways. Same-sex friendships are typically higher in positivity than other-sex friendships (Hand & Furman, 2009), but little is known about how other-sex friendships vary in quality or how that quality is associated with adjustment. The present study examines this with college students. We used cluster analysis to group the students into six profiles based on their reports of positivity and negativity with their closest other-sex friend. Students who had high-quality other-sex friendships tended to have fewer behavior problems. The other profiles varied in their associations with behavior problems.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Karen Mooney

Funding Sources

None

211 • Fear-inducing Stimuli and Emotion-induced Blindness

Sharlenn La, Riley Bowersox, Emma Anderson, Colin O'Neil

Abstract

The current study examined how fear-inducing stimuli affected the processing of subsequent stimuli. Previous research has shown that emotional stimuli can disrupt the processing of other stimuli that appear shortly after emotional pictures (e.g., Emotion Induced Blindness). A rapid serial visual presentation task was used in which pictures of spiders and snakes served as fear-inducing distractors, and we measured participants' ability to identify target pictures in close temporal and spatial proximity to these distractors. Distractors hampered target identification more when they appeared in the same visual field, supporting a spatio-temporal competition account of Emotion Induced Blindness.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jeffrey Mounts

Funding Sources

None

344 • Miming Makes it Memorable? Investigating the Role of Iconic Signs in Memory

Clarissa Saad, Laine Silverman, Mckenna Oley, Sarah Daniels, Madeleine Mann

Abstract

One useful mnemonic technique that can improve memory retention is the production effect: the finding that information is better remembered when it is actively produced (i.e., spoken aloud or signed) than when it is passively received (i.e., read silently). Regarding how signing can help memory, we developed a study to investigate how the "iconicity" of signs could help memory. Iconicity is the extent to which the form of a sign resembles its meaning. For

example, in ASL, the sign for "book" involves holding a closed, imaginary book with both hands, and then opening it with a quick flick of the wrists. The sign for “book” is much more iconic than the sign for other words, such as “justice” or “parent”, because the forms of these signs do not resemble its meaning. We hypothesize that one of the reasons signing may be a highly effective mnemonic is that many signs are iconic of their referent words, meaning that signing can be thought of as “acting out” a word or action. In our study, subjects were shown a list of words that varied in ratings of iconicity (high or low), signed some of the words. Later, their memory for these words were tested. Our results suggest that iconic signs were indeed easier to remember than non-iconic words however, this effect held true for both signed and non-signed items. Overall, iconicity may thus enhance memory, but also may not depend on signing, a concept we are exploring with further research in the lab.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Jason Ozubko

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11 • Emotion Regulation and Social Media Motives as Mediators of Attachment and Problematic Social Media Use

Anna Arehart, Kaela Dimanlig, Nieve Mahood

Abstract

Our study examined the role of insecure attachment on social media addiction and stalking behaviors, with emotional regulation strategies and motives for social media use as mediators. Results indicated that anxious attachment significantly predicted both social media addiction and stalking, whereas avoidant attachment did not. Anxious attachment also significantly predicted emotional dysregulation and deactivation, as well as three social media use motives (fear of missing out, escapism, and validation). Mediation analyses revealed that emotional dysregulation and two social media motives (escape, boost self-esteem) fully mediated the relationship between anxious attachment and social media addiction and partially mediated the relationship between anxious attachment and social media stalking. More specifically, anxiously attached individuals were more likely to experience higher levels of emotional dysregulation, which predicted using social media to escape and to boost their self-esteem. These motives then predicted both social media addiction and stalking. Implications of our results for both our understanding of attachment and problematic social media use, as well as potential interventions 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

Funding Sources

None

350 • Do Campers Who Spent More Years at Residential Summer Camp Focusing on Restorative Practices Report Higher Levels of Empathy?

Haley Dennis

Abstract

Empathy involves the promotion of constructive inter-group relations through perspective-taking and prosocial action (Taylor, 2020). Supporting youth empathy is vital in deterring the cyclical nature of violence, as children comprise the future generation (Taylor, 2020). Indeed, children often act as resources rather than recipients in peace-building efforts (Taylor, 2020). Therefore, further investigation into the mechanisms that underlie empathy in youth is warranted. Camp Stomping Grounds (CSG) is a youth summer camp that promotes radical empathy through restorative practices, implementing unbounded creativity, and encouraging autonomy in daily scheduling. Time at CSG has been shown to enhance empathy in campers (Merrilees, Taber-Thomas, & Klotz, 2023). In light of CSG's mission, it would be valuable to examine whether long-term campers experience heightened empathy when compared to campers who have spent less time at CSG. Data were collected at CSG on camper variables through a post-camp survey. By analyzing data collected thus far, we may be able to draw conclusions on whether CSG fulfills its mission of promoting radical empathy in youth.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Bradley Taber-Thomas

Funding Sources

None

93 • Ecological Assessment of Attention and Emotion

Madison Nuttle, Grace Kanaley, Kaelin Faery, Alise Hale, Rhiannon Friel, Meagan O'Gara

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 in social situations have not conducted experiments in true real-world situations, making results difficult to generalize to the real world. 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. For this study, participants will wear PupilCore mobile eye tracking technology that monitors visual fixations throughout the experiment. A pretest activity will be conducted to acclimate participants to the novel social environment. This will then be followed by the TSST, posttest activity, and debrief consecutively. Data from the pre/post test and the TSST will be analyzed for fixations between two confederates, one of which presents as attentive and affirmative (positive) and, the other disengaged (negative). It is hypothesized that more anxious individuals will attend to the negative stimuli more frequently throughout the study, but that this AB will be most significant during the TSST.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Bradley Taber-Thomas

Funding Sources

None

94 • Examining Caregiving Experiences of Social Support Providers After Trauma

Benjamin Sanchez, Jilana Bayley, Natalie Thurston

Abstract

Social support is necessary after trauma (Ruzek et al., 2007). However, difficulty occupying a support provider role may negatively impact the potential benefits friends, family, and romantic partners can offer trauma survivors as they attempt to recover (Klarić et al., 2010), and little research has been done from the supporter perspective. The present

study sought to examine supporter experiences in an online sample of romantic partner supporters (N=513) of traumatic injury survivors recruited online via crowdsourcing. It was hypothesized that partners' support provision experiences (i.e., social support frequency and difficulty) and their sense of caregiver mastery would be associated with perceptions of trauma survivor recovery or nonrecovery. Results suggested a significant main effect of support difficulty (*B* = -.23***) and caregiver mastery (*B* =.36***) on perceptions of survivor recovery. Support frequency was not significantly associated with survivor recovery (*B* = -.07). Additionally, there was a significant interaction of support difficulty and caregiver mastery (*B* = .12**). The study concluded that increased caregiver mastery is associated with survivor recovery, support difficulty is associated with survivor nonrecovery, and that the strength of the relationship between support difficulty and survivor recovery depends on caregiver mastery. Future work should explore caregiver mastery as a potential mediator of the relationship between support difficulty and survivor recovery.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Cassie van Stolk-Cooke

This presentation will also be presented at:

Association for Behavioral and Cognitive Therapies

Funding Sources

None

95 • Associations Between Concerned Significant Others' Depression with Caregiving Experiences Among Romantic Partners of Recent Traumatic Injury Survivors

Jilana Bayley, Benjamin Sanchez, Natalie Thurston

Abstract

Concerned Significant Others (CSOs; i.e., friends, family members, romantic partners) are primary caregiving sources after trauma exposure, and effective support from CSOs is understood to be critical to recovery (Ruzek et al., 2007). However, very little work has investigated how CSO's mental health relates to their caregiving experiences, particularly in the traumatic stress literature. The present study aimed to examine the associations of CSO depression with experiences of caregiver mastery, satisfaction, guilt, and burden in a sample of romantic partner CSOs (N=513) of recent traumatic injury survivors. It was hypothesized that CSO depression would be negatively associated with caregiver mastery and satisfaction, and positively associated with caregiver guilt and burden when accounting for survivor posttraumatic stress symptoms (PTSS) and relevant demographic covariates. Data was collected via MTurk crowdsourcing. Regression analyses were run within a structural equation model which was created to examine the main effects of CSO depression on caregiving experiences, as well as the interaction between CSO depression and survivor PTSS. CSO depression symptoms were significantly associated with greater burden and guilt (B's=.48***, .33***), and lower mastery (B=-.31***). There were also significant interactions between CSO depression and survivor PTSS on caregiver satisfaction (B=.18)*** and burden (B=.08*). Results largely support the hypothesis that CSO mental health influences positive and negative caregiving experiences. Further, the strength of the relationship between survivor PTSS and caregiver burden and satisfaction depends on CSO depression severity.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology

Faculty Sponsor

Cassie van Stolk-Cooke

This presentation will also be presented at:

Association for Behavioral and Cognitive Therapies

Funding Sources

None

96 • Relationship Satisfactions Effect on Social Support Offered to Recently Traumatized Significant Others

Natalie Thurston, Jilana Bayley, Benjamin Sanchez

Abstract

Social support is considered a key protective factor after trauma exposure (Cohen & Wills 1985). However, prior work suggests that social support for posttraumatic stress symptoms (PTSS) can erode over time (Leifker & Marshall 2019). While it is highly likely that the relational health of the support providers and trauma survivors influence social support quality and quantity (Boyers & Simpson Rowe 2018), very little work has been done to examine these contextual factors, particularly from the support provider perspective. The present study therefore sought to examine the interplay between relationship satisfaction and survivor PTSS as they relate to the social support provision experiences of informal support providers. 513 romantic partners of recent traumatic injury survivors were surveyed using online crowdsourcing. Results suggested a significant main effect of relationship satisfaction on support provision frequency (B = .45***) and difficulty (B = -.30***), while accounting for the effect of survivor PTSS (Bs = .16***, .31***). Results were further qualified by a significant interaction between relationship satisfaction and survivor PTSS on support provision frequency (B =-.13**). This interaction was not significant for support difficulty (B = .02). Results suggest that relationship satisfaction is a strong predictor of the frequency and quality of support provided by romantic partners to traumatic injury survivors. Further research should explore whether these effects vary across other types of supporter-survivor relationship types.

Subject Category

Social Science Categories: Psychology

Special Topic Information

Faculty Sponsor Department

Psychology

Faculty Sponsor

Cassie van Stolk-Cooke

This presentation will also be presented at:

Association for Behavioral and Cognitive Therapies

Funding Sources

None

SCHOOL OF BUSINESS

88 • Determinants of Financial Literacy at SUNY Geneseo

Alexis Kruzicki, Isabella Nicastro

Abstract

Through surveying the SUNY Geneseo student body, we plan to explore what determines the level of financial literacy among students at SUNY Geneseo. The survey contains questions that address students' demographics, academic background, family support through college, personal finance experience, and a financial literacy quiz. The sample size is 403 respondents, which is 10% of the population at SUNY Geneseo. We have noticed many students struggling on campus with the basics of personal finance and want to address the growing concern of how this could affect their success through college and in the future. We are interested in how the students' family or academic background is associated with their financial literacy. Based on this exploration we plan to make some policy and curriculum suggestions on how we can improve the overall understanding of personal finance at SUNY Geneseo. Based on this research we plan to design a curriculum that will be offered to all students through the Geneseo Opportunities for Leadership Development (GOLD) program and will address the largest educational gaps that were identified in the survey. This course will be evaluated by administering the same financial literacy quiz following completion of the course and will offer insight into whether or not there is a substantial change in the students' personal finance knowledge.

Subject Category

School of Business Categories: Data Analytics

Faculty Sponsor Department

School of Business

Faculty Sponsor

Byeong-Hak Choe

Funding Sources

School of Business

305 • Unraveling the Impact of Artificial Intelligence on Human Society: A Multidisciplinary Exploration

Marcus Lewis, Matisse Domeck

Abstract

This presentation explores real-world applications of AI, ranging from professional sports strategy formulation to marketing strategies for consumer products like the iPhone. This presentation will consist of emphasizing the symbiotic relationship between AI and human decision-making, it underscores the necessity of human oversight and accountability in AI-driven decision processes. Additionally, the presentation underscores the approaches to comprehend the multifaceted impact of AI on human society. By fostering dialogue across diverse domains, it aims to navigate the evolving landscape of AI adoption while safeguarding human values and societal well-being.

Subject Category

School of Business Categories: Data Analytics

Special Topic Information

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

Faculty Sponsor Department

School of Business

Faculty Sponsor

Byeong-Hak Choe

Funding Sources

None

260 • Exploring the Determinants of Happiness Across Nations

Jack Gramlich

Abstract

The pursuit of happiness is a fundamental aspect of human existence, and understanding the factors that contribute to happiness across nations is of paramount importance. This proposal aims to investigate the determinants of happiness using data from the World Happiness Report. By conducting econometric analysis, we seek to identify the key drivers of happiness and shed light on how policymakers can foster happier societies. The topic of happiness transcends cultural, social, and economic boundaries, making it a universally relevant and compelling subject of study. With profound implications for public policy, economic development, and societal well-being, I want to study the most important determinants when it comes to a country's overall happiness ladder score to see what really drives happiness.
The article I am using to support this motivation is: "The Pursuit of Happiness: Exploring the World's Happiest Countries and What Makes Them So" It talks about the data from the 2021 World Happiness Report, stating that the 6 main variables are income, healthy life expectancy, social support, freedom, trust, and generosity.
The academic Journal I am using is: "Determinants of Subjective Well-Being: A Cross-National Analysis" This scholarly article presents a rigorous analysis of the determinants of subjective well-being using data from the World Values Survey and other sources. Drawing upon econometric methods, the study identifies key factors such as income, social relationships, health, and governance quality that influence individuals' happiness levels across countries.

Subject Category

School of Business Categories: Economics

Special Topic Information

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

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mansokku Lee

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None

200 • How Aging Populations Affect the 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 to the young, working population, 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 offset the increase in spending. Increases in taxes usually lead to the average household bringing home a smaller amount of their paycheck, decreasing their disposable income.

Another component of the OADR is the birth rate. Since 2010, in the U.S, the average birth growth rate is -0.92% per year, meaning that the birth rate has been steadily declining over time. The OADR tends to rise as the birth rate falls since the elderly population would increase at a higher rate than the working population.

It is dangerous for the OADR to rise too quickly since funds for other government programs, such as those beneficial to younger populations, may be shifted to elderly programs to support the increasing population.

By comparing the trends in the OADR and certain economic variables such as elderly employment rate, and government spending, we seek to make relevant policy suggestions to ease these predicted issues.

Subject Category

School of Business Categories: Economics

Faculty Sponsor Department

School of Business

Faculty Sponsor

Mansokku Lee

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Dean Johnston Student Research Assistantship

SOCIOLOGY

165 • Accessibility is for Everyone

Kaitlin Anzalone

Abstract

Everyone can support accessibility including little things that you can change or add to your everyday routine that may make a huge impact for others. This project aims to share accessibility tools for use in the classroom to address different forms of ableism and how to combat them. Faculty adoption of “best practices” for accessibility vary to a wide degree at Geneseo. How can social norms about accessible pedagogical practices become more widespread? We apply ideas from scholarship on the role of social networks to the practical problem of spreading norms aimed at improving classroom accessibility. The structure of a social network affects the spread of behavior because network ties are the pathways through which behavioral norms propagate. Research on “complex contagions” has concluded that a small number of

“seeds” (initiators of a new behavior) can trigger a cascading adoption of a new norm when they are transmitted through multiple independent interactions. We developed and, at the Diversity Summit, pilot tested the introduction of new educational materials about an easy-to-use tool (closed captioning) meant to address a common accessibility issue faced by students in the classroom. We review and consider the effectiveness of this type of network propagation strategy for encouraging behavioral norms meant to improve accessibility, and introduce several additional future directions for spreading information about accessibility through Geneseo’s social network.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department

Sociology

Faculty Sponsor

Michael Restivo

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None

THEATRE AND DANCE

220 • Designing Comedy: A Case Study of SUNY Geneseo’s Lucky Stiff

Eleanor Kephart

Abstract

Lucky Stiff is a musical about a man on a journey to discover what it is like to be alive. This story of adventure and love is told through the songs, dialog, and our 1980s comic book-inspired set. We slowly relieved bright colors and sharp patterns within the set to show how new experiences and romance can bring color and interest into the world. The musical starts with Harry Witherspoon working at a boring shoe store; in a mostly black and white world. As Mr. Witherspoon embarks on a whirlwind adventure to Monte Carlo, more color and comic book-inspired patterns are added through pull-away drops and bold furniture. This is done to show Mr. Witherspoon's journey as his life becomes more interesting and he finds joy in everything. This production is unique in its defined style and engages the audience with its comedy, music, and ever-evolving set.

Subject Category

Arts and Humanities Categories: Theatre

Faculty Sponsor Department

Theatre and Dance

Faculty Sponsor

Rosalind Isquith

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Index of Student, Faculty, and Staff Participants

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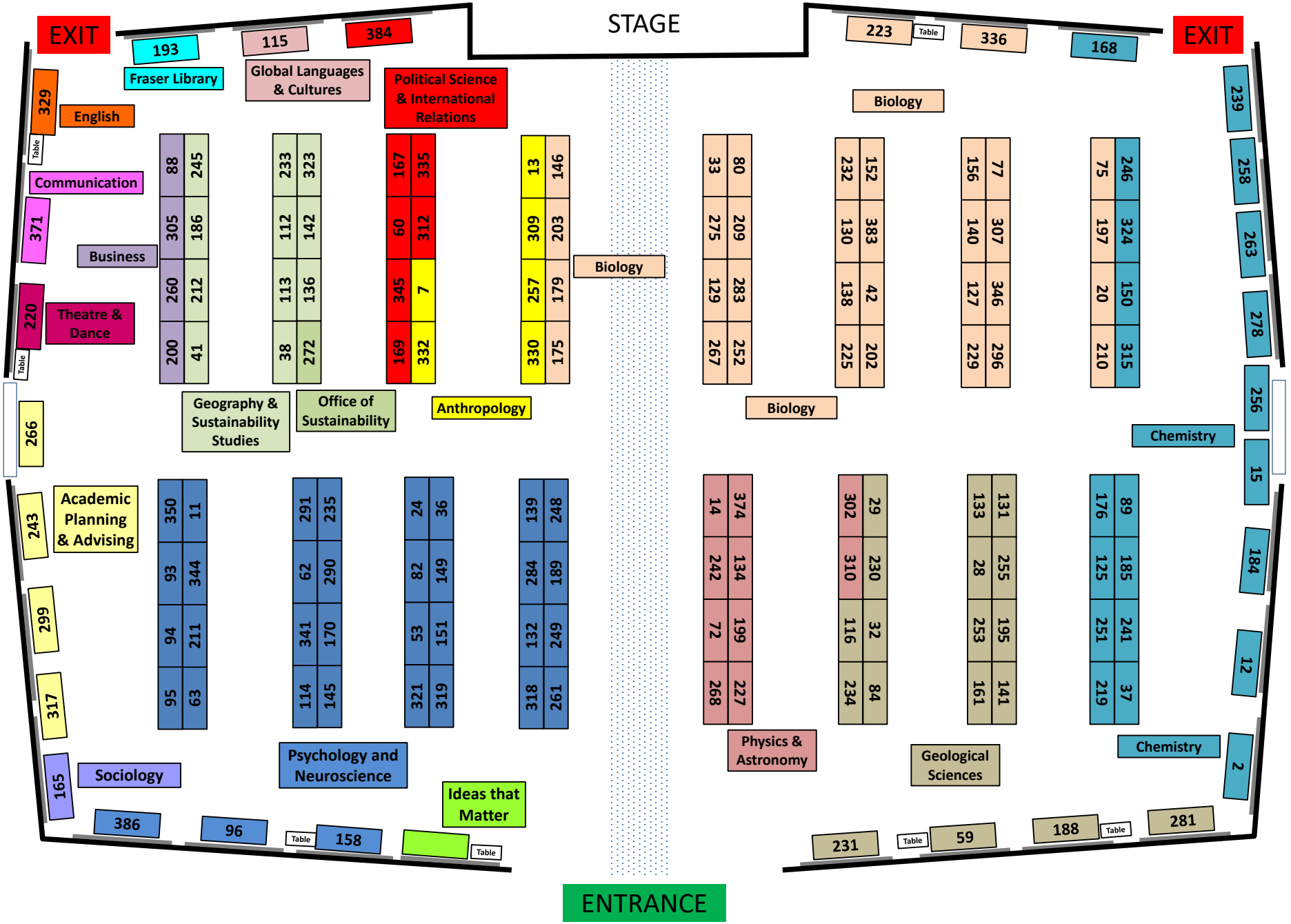
GREAT Day 2024 Poster Locations



Posters are grouped by department/topic and are identified by **abstract submission number**