THE SEVENTEENTH ANNUAL

GREAT DAY



GENESEO wednesday, april 26, 2023

Welcome to SUNY Geneseo's Seventeenth 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 2023, which will be held on Wednesday, April 26, 2023.

The keynote address by Wendsler Nosie Sr., Ph.D. will be held on Wednesday, April 26, 2023, 1:45-3:00pm in Wadsworth Auditorium.

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



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 - S - in this program.

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ABOUT THE VIRTUAL GREAT DAY PROGRAM:

- GREAT Day 2023 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, <u>KnightScholar</u> - freshly redesigned this month! 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 Schedule at a Glance

CONCURRENT SESSION 1	9:00 - 10:15 AM	
1A: Edgar Fellows Panel 1		Bailey 101
1B: Research in Cognitive and Social Psychology		Bailey 102
1C: Geography & Sustainability Studies Session		Bailey 103
1D: Sociology of Wonder Part 1		Bailey 104
1E: Edgar Fellows Panel 2		Bailey 105
1F: Women's & Gender Studies Capstone Projects Session 1		Bailey 201
1G: Creative Arts Session		Bailey 202
1H: Women's & Gender Studies Capstone Projects Session 4		Bailey 203
11: Edgar Fellows Panel 3		Bailey 204
1J: Research Presentations in Geology Part 1		Welles 115
1K: Sustainability Optimization Part 1		Welles 117
1L: Biology Session 1		Welles 119
1M: Narrative Voices and Existential Africa		Welles 128
1N: School of Business Session 1		Welles 131
10: Medical Histories of the 20th Century		Welles 132
1P: Approaches to the Bible as Literature		Welles 134
1Q: History of Mathematics		Welles 138
KICK-OFF COFFEE HOUR HONORING 1-, 10- AND 15-YEAR SPONSORS		
AND PRESENTATION OF 2022 PROCEEDINGS, FEATURING A	9:30 - 10:45 AM	Fraser Library
PERFORMANCE BY THE GENESEO STRING QUARTET		
GENESEO STRING QUARTET (AT KICK-OFF COFFEE HOUR)	9:30 - 10:45 AM	Fraser Library
		,
	10:00 AM - 6:00 PM	MacVittie College Union
GREAT DAY ARTISTS EXHIBIT	10:00 AM - 6:00 PM	MacVittie College Union Kinetic Gallery
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations)	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 204
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 204 Welles 115
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2 2K: Sustainability Optimization Part 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 204 Welles 115 Welles 117
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2 2K: Sustainability Optimization Part 2 2L: Biology Session 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 204 Welles 115 Welles 117 Welles 119
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2 2K: Sustainability Optimization Part 2 2L: Biology Session 2 2M: Self and Community-Based Empowerment in Black	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 204 Welles 115 Welles 117 Welles 119 Welles 128
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2 2K: Sustainability Optimization Part 2 2L: Biology Session 2 2M: Self and Community-Based Empowerment in Black Culture and Art	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 203 Bailey 204 Welles 115 Welles 117 Welles 119 Welles 128
GREAT DAY ARTISTS EXHIBIT CONCURRENT SESSION 2 2A: Edgar Fellows Panel 6 2B: Edgar Fellows Panel 5 2C: Social Science Session 2D: Sociology of Wonder Part 2 2F: Anthropology & Sociomedical Sciences Panel 2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations) 2H: Women's & Gender Studies Capstone Projects Session 3 2I: Edgar Fellows Panel 4 2J: Research Presentations in Geology Part 2 2K: Sustainability Optimization Part 2 2L: Biology Session 2 2M: Self and Community-Based Empowerment in Black Culture and Art 2N: School of Business Session 2	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 202 Bailey 203 Bailey 204 Welles 115 Welles 117 Welles 119 Welles 128 Welles 131
GREAT DAY ARTISTS EXHIBITCONCURRENT SESSION 22A: Edgar Fellows Panel 62B: Edgar Fellows Panel 52C: Social Science Session2D: Sociology of Wonder Part 22F: Anthropology & Sociomedical Sciences Panel2G: Philosophy of the Arts: Answers to UnresolvedQuestions (Flash Presentations)2H: Women's & Gender Studies Capstone Projects Session 32I: Edgar Fellows Panel 42J: Research Presentations in Geology Part 22K: Sustainability Optimization Part 22L: Biology Session 22M: Self and Community-Based Empowerment in BlackCulture and Art2N: School of Business Session 22O: History Directed Studies: Using Unconventional Source	10:00 AM - 6:00 PM 10:30 - 11:45 AM	MacVittie College Union Kinetic Gallery Bailey 101 Bailey 102 Bailey 103 Bailey 104 Bailey 201 Bailey 202 Bailey 203 Bailey 203 Bailey 204 Welles 115 Welles 117 Welles 119 Welles 128 Welles 131
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2Q: Tokenization and Heritage Language Speakers: Experiences Inside the Classroom		Welles 138
2R: Performance as Social Change: Trans Rights and Black Queer Short Films		Bailey 246
2S: Days of Our LIVES		Newton 202
MUSICAL PERFORMANCES (STRING BAND, LOW BRASS ENSEMBLE, JAZZ ENSEMBLE)	11:00 AM - 12:00 PM	Doty Recital Hall
AN EXPLORATION OF ASIAN DANCE	11:00 - 11:30 AM	Multicultural Center Blake Hall
THE POLITICS OF QUEERNESS: A MULTIMEDIA GALLERY	11:30 AM - 12:30 PM	Multicultural Center Blake Hall
Poster Session	11:30 AM - 1:30 PM	MacVittie College Union Ballroom
LITERARY READINGS	12:30 - 1:30 PM	Multicultural Center Blake Hall
KEYNOTE: WENDSLER NOSIE SR., JACK '76 AND CAROL '76 KRAMER ENDOWED LECTURESHIP	1:45 - 3:00 PM	Wadsworth Auditorium
CONCURRENT SESSION 3	3:25 - 4:30 PM	
3B: Initiatives in Sustainability		Bailey 102
3C: Edgar Fellows Panel 8		Bailey 103
3D: Bringing Philosophy to the Real-World: Ethics and Charitable Giving		Bailey 104
3E: Edgar Fellows Panel 7		Bailey 105
3F: Geneseo Changemakers: Presentations by the 2023		Bailey 201
Student Ambassadors		
3G: Black Opera and Black Women in Opera (Flash Presentations)		Bailey 202
3H: Women's & Gender Studies Capstone Projects Session 2		Bailey 203
31: Edgar Fellows Panel 9		Bailey 204
3J: Chemistry Session		Welles 115
3K: Mathematics Session		Welles 117
3L: Biology Session 3: Flash Presentations		Welles 119
3M: Music, Home and Family		Welles 128
30: Humanities and Languages Session		Welles 132
3P: Life and Death in Ukrainian Wartime Fiction: Reading		
Andrey Kurkov's Grey Bees (Flash Presentations)		Welles 134
3Q: Sociocultural Mediators in Spanish: Integrative High-		
Impact Transformational Experiences		Welles 138
3R: Mock Trial Presents the Court Case of the Year		Bailey 246
A CAPELLA HOUR	4:00 - 5:00 PM	MacVittie College Union Programming Space, 2nd Floor
GIFF: GENESEO INSOMNIA FILM FESTIVAL & AWARDS CEREMONY	6:00 - 7:00 PM	Wadsworth Auditorium

2023 GREAT DAY Honors and Proceedings of GREAT Day 2022

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 16th 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:

HISTORY

Justin Behrend



15-YEAR SPONSORS

CHEMISTRY Eric Helms COMMUNICATION Meredith Harrigan



10-YEAR SPONSORS

<u>ENGLISH</u> Alice Rutkowski MATHEMATICS Chi-Ming Tang



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

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BIOLOGY

Tara Sweet

BUSINESS Mark Rider <u>CHEMISTRY</u> Michael Webb

EDUCATION Jennifer Waddington

<u>ENGLISH</u> Sonya Bilocerkowycz Olaocha Nwabara GEOLOGICAL SCIENCES Sarah Gaudio

<u>HISTORY</u> Ling Ma Mohammed Sadegh Ansari

MULTICULTURAL AFFAIRS Charlotte Wade

PSYCHOLOGY James Allen Jennifer Katz

Ben David Aronson Joan Floriano Leah McGray

MUSIC

Rachel Solomon

PHILOSOPHY Jonathan Auyer Brian Barnett

PROCEEDINGS OF GREAT DAY 2022

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 2022 is now available!

Featuring:

- An interview with Dr. Diane Stanitski: GREAT Day keynote speaker, Deputy Directory of the NOAA Pacific • Marine Environmental Laboratory, and proud Geneseo alum
- An interview with students from SUNY Geneseo's Tempestry Project

STAFF: ALLISON BROWN, MAX SPARKMAN, AND DANIEL ROSS STUDENT EDITORS: SPARROW POTTER AND HANNAH LUSTYIK

Students and Faculty Mentors Published in the Proceedings of GREAT Day 2022

MISOGYNY, MONSTROSITY, AND PATTERNS OF POWER IN OLD ENGLISH LITERATURE LAUREN SILVERMAN SPONSORED BY GRAHAM DRAKE, PHD

SAMSON'S PERFORMANCE OF STRENGTH AND SUPERIORITY IN MILTON'S SAMSON AGONISTES ANDERS ISAAC SCHILLER SPONSORED BY SAMUEL FALLON, PHD AND LISA MEYER, PHD

THE IMPACT OF THE AFRICAN DIASPORA ON 20TH **CENTURY DANCE** JAINA DININO SPONSORED BY JONETTE LANCOS, MFA

THE INNOVATIONS OF MODERN DANCE SHANNON ERVAY SPONSORED BY JONETTE LANCOS, MFA

SUGGESTIONS FOR SUNY GENESEO FACULTY TO IMPROVE STUDENTS' EXPERIENCES IN OFFICE HOURS TYLER GRASSO JENNIFER GUZMÁN, PHD

ONE STEP FORWARD, THREE STEPS BACK LAURA MONTES SPONSORED BY MARIA HELENA LIMA, PHD

HOW PATIENT-PROVIDER INTERACTIONS INFLUENCE PATIENT EXPERIENCES EMILY LUMBIS SPONSORED BY MELANIE MEDEIROS, PHD

THE EFFECTS OF DEFORESTATION ON YELLOW FEVER VIRUS TRANSMISSION **MEGHAN SHERIDAN** SPONSORED BY SUANN YANG, PHD

THE EFFECT OF THE PYRAMID SHAPE ON COMPOST SMELL ELIZABETH KLOSKO SPONSORED BY AHMAD ALMOMANI, PHD

The Jack '76 and Carol '76 Kramer Endowed Lectureship

The Rumbling of Holy Places: Protecting the Sacred/Ecological

WENDSLER NOSIE SR., EDUCATOR AND DIRECTOR, APACHE STRONGHOLD

Wednesday, April 26th, 1:45-3:00pm, Wadsworth Auditorium



About Wendsler Nosie Sr. Ph.D., Educator and Director of the Apache Stronghold

Wendsler Nosie Sr., Ph.D., is a former Peridot District Councilman and Tribal Chairman of the San Carlos Apache Tribe, which consists of nearly 17,000 tribal members on the San Carlos Apache Reservation in southeastern Arizona.

He is a <u>Professor in the Practice of Indigenous Knowledge</u> at the American University of Sovereign Nations, where he teaches a range of master's and doctoral program courses to students from around the world.

Nosie was born on the San Carlos Apache Reservation and raised in the traditional Apache way of life. He attended Merritt College in Oakland, CA, and Phoenix College in Phoenix, AZ, and completed the State of Arizona Banking Academy. Nosie earned a doctorate in bioethics, sustainability, and global public health from the American University of Sovereign Nations. Following college, he returned to San Carlos and began his employment as the

Tribal Work Experience program director in 1982. In 1988, he was elected to Tribal Council, which governs the San Carlos Apache Tribe.

Nosie is dedicated to working on behalf of tribal citizens and for the preservation and protection of Native American culture, artifacts, history, religion, and tradition in many ways.

He founded Rural Opportunities of Arizona (ROA), owned, and operated by a tribal member, which provided opportunities for tribal citizens to become skilled in trades and trained for jobs throughout Arizona. In 1995, he established Apaches for Cultural Preservation.

A long-distance runner, Nosie has participated in numerous marathons and half marathons over the years. He founded the Spirit of the Mountain Runners in 2000, which is a traditional runners' organization.

Nosie was re-elected as the Tribal Council representative for the Peridot District in 2004 to serve another four-year term. In 2006, he was elected by the San Carlos Apache People as their Tribal Chairman. In 2010 and again in 2012, he was re-elected to the Tribal Council. He has also been appointed as the San Carlos Recreation and Wildlife director and has marketed and expanded the hunting and recreational area of the tribe.

Music Festival

Geneseo String Quartet (at Kick-Off Coffee Hour)

9:30-10:45am, Wednesday, 26 April, 2023, Fraser Hall Library

String Quartet: Audrey Ryan, Clare Douglas, Piper Beckwith

Musical Performances (String Band, Low Brass Ensemble, Jazz Ensemble)

11:00am-12:00pm, Wednesday, 26 April 2023, Doty Recital Hall

Session Chairs: Ben David Aronson, Monica Hershberger, Bill Tiberio

String Band: Anneliese Campo, Abigail Dove, Michelle Gagliardo**Error! Bookmark not defined.**, Julia Grunes, Bailey Gyllenhammer, Thomas Interrante, Timothy Kresock, Anthony Pirrone, Katie Piscani, Samantha Rompala

Brass Ensemble: Shaun Fitzgerald, Allie Balawender, Matthew Chudy, Colin Lagios

Jazz Ensemble: Adam Comstock, Brennan Borden Mcgory, Brian Shankar, Dominic Rodriguez-Donohu, Erica Hoenig, Harrison Martinez, Joan Karron, Justin Ronzoni, Jack Katz, Jillian Orr, James Flockhart, Kayla Anderson, Kyle Brown, Lauren Braun, Nicholas Versace, Spencer Ruediger, William Carmen

A Capella Hour

4:00-5:00pm, Wednesday, 26 April 2023, MacVittie College Union Programming Space, 2nd Floor Session Chair Monica Hershberger

Between the Lines 4:00-4:12pm Emmelodics 4:12-4:24pm Exit 8 4:24-4:36pm Hips n' Harmony 4:36-4:48pm Southside Boys 4:48-5:00pm

Between the Lines

Mel Dembinski, Aspen Griffing, Julia Yakowyna, Kaitlyn Samsel, Katie Huntley, Hannah Lieberman, Logan Linares, Arielle Beckman, Sarah Mertson, Kate Edwards, Lix Orlep, Keely Culhane, Rebecca Wowk, Jaideep Dhamoon, McKenzie Flynn, Courtney Duggan, Anna Arehart, Jayden Sherman, Melanie Clancy

Emmelodics

Jenna Guyette, Grace McMillan, Madelyn Hill, Lindsey O'Hern, Aidan Hellman, Noah Longshore, Jada Doss, Sparrow Potter, Katie Morgan, Lauren Murphy, Riley Martin, Sarah Dean, Morgan Olsen, Jacob Roberts, Katie Cole, Taylor Bramhall, Sol Rivera, Caroline von Hof, Genna Burke, David Potter, Iana Whitney, Maddie Butler

Exit 8

Hannah Cole, Julia Grunes, Maeve Frost, Abby Rockwood, Nicole Lallier, Kaylie Barbosa, Logan Linares, Penelope Zenhausern, Ellen Crowe, Lucas Piatowski, Kathleen Lewis, Grace MacMillian, David Cross, Aidan Nichols, William Carmen, Olivia Tedford, Regina Cucchiara, Clare Douglas, Eve Angelo, Kieran Thomas, August Fountain

Hips n' Harmony

Khara Simons, Gwen Cunningham, Olivia Aupperlee, Hannah Brewer, Elizabeth O'Connell, Olivia Messina, Peyton Wulkan, London Patane, Cara Pfluke, Mariah Taylor, Olivia Santos, Alexis Bertrand, Hannah Slade, Lona Tucci, Shayda Ramsammy, Mina Klentos, Laruen Stevens, Lillian O'Donnell, Madeline Cheney

South Side Boys

Aidan Hellman, Aidan Nichols, Andrew Bellotti, Bradley Adams, Brian Parrett, Cameron Franke, Carlo Tobia, Christian Tewksbury, David Potter, Dominic Petrucci, Ethan Shaw, Harrison Smith, Ian Suszynski, James Degnan, Justin Robinson, Kameron Greene, Kieran Thomas, Lucas Glomb, Maxwell Worden, Olive Crawford, Robert Beirne, Ryan Silverstein

Celebrating the Arts

GREAT Day Artists Exhibit

10:00am-6:00pm, Wednesday, 26 April 2023, MacVittie College Union Kinetic Gallery

Exhibitors

Hanah Smith, Elise Ellis, Ian Suszynskj, Makayla French, Lona Tucci, Nateya Pappin, Jake Catus, Moira Sullivan, Thomas Churnetski, Carra Lanigan, Aaron Cohen, Anamaria Santos Mendez, Daniella Karcic, Bianca Pietrangeli, Natanya Stark, Megan Powers, Timothy Simmons, Jeremy Sauer, Willow Swan-Scott**Error! Bookmark not defined.**

An Exploration of Asian Dance

11:00-11:30am, Multicultural Center Blake Hall

336 • An Exploration of Asian Dance

Nazari Cooke, Tenzin Tselha, Mandy Xiang

Abstract

Three Chinese Culture Club Geneseo (CCCG) students, Nazari Cooke, Tenzin Tselha, and Mandy Xiang, will perform one minute of Tibetan dance, one minute of Chinese dance, and one minute of hip-hop dance. They will perform with the music and costumes together. The purpose of their performance is an exploration of Asian dance.

Subject Category

Interdisciplinary and Other Categories: Asian Studies

Faculty Sponsor Department

Global of Languages & Cultures and Mathematics

Faculty Sponsor

Jasmine Tang and Chi-Ming Tang

The Politics of Queerness: A Multimedia Gallery

11:30am-12:30pm, Wednesday, 26 April 2023, Multicultural Center Blake Hall

310 • The Politics of Queerness: A Multimedia Gallery

Frances Sharples

Abstract

This gallery will display multimedia poetic pieces inspired by the artist's capstone on the politics of queer poetics. The gallery complements a presentation analyzing the work of many queer poets and theorists and is informed by the literary and creative studies conducted in this capstone.

Subject Category

Arts and Humanities Categories: Literary Arts

Faculty Sponsor Department English Faculty Sponsor Lytton Smith Funding Sources None

Literary Readings

12:30-1:00pm, Wednesday, 26 April, 2023, Multicultural Center Blake Hall

Session Chair Alice Rutkowski

7 • Me, My Dad, and the Whispers in the Air

Erika Vincent

Abstract

A portion of my personal ethnography: Me, My Dad, and the Whispers in the Air. My father passed away of cancer in October of 2021. We had a strange relationship; he was a great father when I was little, but as he got sicker, he turned distant and cold. His passing left me conflicted. I decided to do this ethnography as a form of reflection, piecing together the memories I had with those of others' who knew him and seeing where that left how I viewed our relationship. My key informant was a friend of his in college, Dr. Fletcher, and I spent a good amount of time with him in different settings to do this project. I even camped out in his yard, which me and my dad used to do around the time of an airshow nearby. This ethnography has helped me grow as a person and gave me a new perspective on storytelling, memories, and what it means to be human, and I'm excited to be able to share it with you. Perhaps it can give other people experiencing grief a new perspective as well.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department Anthropology Faculty Sponsor Bruno Renero-Hannan Funding Sources None

109 • The Game of Life: The American Dream House

Patricia Figueroa

Abstract

This paper tells the story of three Ecuadorian women from three different generations and how they've persevered through life during different times in Ecuador and America. One woman, Rose, never left her country while Gladys did and gave birth to her daughter Gabriella in the United States. Is Rose regretful for not taking that leap of faith? Was it worth it for Gladys to leave her whole family behind? Is Gabriella truly better off? What truly is the American Dream? Though very different ways of life, they are all tied together in blood.

Subject Category Arts and Humanities Categories: Literary Arts Faculty Sponsor Department English Faculty Sponsor Alice Rutkowski Funding Sources None

GIFF: Geneseo Insomnia Film Festival & Awards Ceremony

6:00-7:00pm, Wednesday, 26 April, 2023, Wadsworth Auditorium

Session Chair

Joe Dolce

The long awaited, Ninth Annual Geneseo Insomnia Film Festival took place on March 24/25th. Participants had 24 hours to write, shoot, edit, and post a video no longer than 3-minutes in duration using a set of elements provided. Teams competed for prizes against other SUNY Geneseo students in an attempt to create the wittiest, most interesting, and creative video. This was a chance for students of all talents to flex their creative muscles and demonstrate their skills, as writers, actors, videographers, or editors. Submissions were judged by a panel of Geneseo faculty and staff. Now we're inviting you to come see the videos during this special GREAT Day screening and awards ceremony! This event is open to all Geneseo community members and we encourage you to bring family, colleagues, and friends as we recognize the excellence, achievements and talent of our 2023 INSOMNIACS!

This year's Participating Teams were:

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

Returning GIFF Winner: Bridget Kelley

Pity Party: Norah Royce, Kimberly Mistretta, Sarah Roberts, Sarah Wicks

Script Flipt: Jackson Faulkner, Tess Zuchowski, Eleanor Walker, Mariama Koroma

Women of Film Club: Maddie Tavernier, Hannah Lustyik, Kathleen Lewis

MACArons: Madelyn Engel, Cadence Panol, Amber Ellis, Alexandra Messerklinger

The Goys: Jason Salton, Nathan Klaits, Brenna Dunn, Surjit Arnone

Wyo: Dylan Dariano, Nathan Hubbard, Camryn Marshall

MTC4LYFE: Zachary Stetson, Aven Regan, Courtney Duggan, Jessica Mazzeo

The Fellowship: Jacob Haley, Brendan Fuhr, Allison Stenard, Emily Bard

Concurrent Sessions

1A: Edgar Fellows Panel 1

9:00-10:15am, Wednesday, 26 April 2023, Bailey 101 Session Chair Aaron Steinhauer, Physics & Astronomy

55 • Common Farming Exemptions in NYS: A Policy Proposal Against Factory Farming and Animal Cruelty

Emily Payne

Abstract

Common Farming Exemptions or CFE's are a legal loophole in which, like the name suggests, the widespread use of a farming practice equates to legality. As with many aspects of modern factory farming, this practice is scarcely known. This presentation will explore and educate about CFE's in New York State, as well as the harmful effects of factory farming in society and the corporate mentality behind it. It will address the perspectives of animal cruelty and farming practices among New York State residents, and explore how these opinions have formed. The presentation will conclude with a policy proposal against CFE's and an analysis on the future of factory farming within the United States.

Subject Category

Social Science Categories: Geography

Faculty Sponsor Department Geography & Sustainability Studies

Faculty Sponsor James Kernan Funding Sources None

68 • The Effect of Media on the Stigmatization of Individuals Who Stutter

Caroline DePaolis

Abstract

The purpose of this study was to investigate the impact of viewing media depictions of stuttering on perceptions of individuals who stutter. Participants were 79% female and 74% White, with an average age of 19 (SD=1.1). Participants were exposed to clips of an individual stuttering or clips of the same individual not stuttering. Next, participants rated the individual in their video clips on a variety of dimensions, including perceived confidence, communication ability, friendliness, and intelligence. Participants also rated the individual on how fun they would be to hang out with and on how good of a colleague they would make. Results indicated that participants exposed to the stuttering video perceived the individual to be less confident, a less effective communicator, and more friendly compared to participants exposed to the non-stuttering video. No other significant differences were found. These results are partially consistent with research that has found that media stigmatizes individuals that stutter. Explanations for the current findings and directions for future research will be discussed.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Steven Kirsh Funding Sources None

147 • The Effects of Colostrum Quality on Health and Development of Dairy Calves

Madeline Kinsella

Abstract

Understanding dairy calf growth and development is essential to ensuring a consistent supply of high-quality products to consumers. The antibody-rich milk—termed colostrum—administered to calves within their first 24 hours of life has become a key factor in increased calf health from birth through long-term development. This research analyzed the relationship between Brix scores reflecting colostrum quality and vital immunoglobulin and total protein counts and inspects Brix score's direct effect on calf health over a seven-month period. Another aspect of the project investigated new innovations for colostrum administration aimed at decreasing bacteria counts for higher-quality feeding to provide new data to farmers regarding more advantageous procedures. Blood samples were taken from 258 calves between two and three days old to find Brix scores, which were then compared with lab-tested total protein content and immunoglobulin levels, as well as recorded health events. Results expressed a significant positive correlation of higher Brix scores resulting in lower frequency of pneumonia contracted after 90 days of age. A newer colostrum procedure of administration through use of a single O-shaped bag resulted in a higher average Brix score than traditional methods of a reusable pitcher, suggesting that this innovation increases colostrum quality by decreasing the chances for bacteria replication. These results help provide dairy farmers with essential information on the importance of good colostrum management, as well as recommendations for procedures to improve their already existing programs.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Mackenzie Gerringer Funding Sources None

292 • Environmental Impacts on the Ocean S

Cara O'Shea

Abstract

Many people think of the word 'alien' when they hear anything about the Mariana Trench. It seems like the most undocumented zone of the planet, impervious to the reach of humans. It is widely theorized that the Mariana Trench is a realm of its own, uninfluenced by the horrors created by humans. This couldn't be further from the truth. It was recently discovered that the negative consequences of pollution had in fact reached the most untouched part of the planet. Candy wrappers and a plastic grocery bag were found over 35,000 feet below the sea surface, resting on the floor of the deepest part of the Mariana Trench, in Challenger Deep (Street). Plastic waste has humiliatingly defeated humans in the race to the bottom of the ocean, officially spreading human waste to every fathomable corner of the Earth, leaving no place unscathed. We are the biggest threat to the oceanic environment by an incomparable amount to any other living creature. The large-scale, detrimental impacts we've caused, have the potential to destroy the ocean as humanity knows it.

Subject Category

Interdisciplinary and Other Categories: Environmental Studies Faculty Sponsor Department Geological Sciences Faculty Sponsor Jacalyn Wittmer Malinowski Funding Sources None

1B: Research in Cognitive and Social Psychology

9:00-10:15am, Wednesday, 26 April 2023, Bailey 102 Session Chair Claire Gravelin, Psychology

78 • Examining the Mnemonic Benefit of Signing vs Speaking

Juliana LaBruna, Clarissa Saad

Abstract

How do we make better memories? Memories are an important part of life, from remembering our own personal pasts and important life events to being efficient studiers, able to learn materials quickly and apply new skills. Figuring out how to more efficiently make memories has been one of the major goals in memory research over the past several decades. Though researchers have identified numerous techniques for enhancing memory over the years, when examining ways of improving linguistic memory, there has been an explicit bias towards spoken and written languages. It is estimated that there are 250,000 to 500,000 Americans that use American Sign Language (ASL), and yet very little research has been done on the mnemonic techniques that may serve these individuals. With this research project, we have begun to investigate this issue, specifically investigating the role that signing itself can play in enhancing memory encoding. Research has been focused on ASL learners as well as ASL experts to identify the impact that signing has on memory, and our preliminary work is showing that singing is a memory aid. Indeed, in some other comparison studies, signing seems to be more effective than speaking. Expansion on our current and previous research is also investigating if iconic ASL words aid in further memory enhancement. Overall, we think our research could help further demonstrate the benefits of ASL as well as expand memory enhancement research to underrepresented communities.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor DepartmentPsychologyFaculty SponsorClaire Gravelin and Jason OzubkoFunding SourcesTRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

135 • Getting Your Brain in Order: Functional Changes to Brain Organization After Training in Virtualized Real-World Environments

Madelyn Campbell, Abigail Verhayden

Abstract

One of the key regions in our brain for processing spatial memories is the hippocampus. Recent neuroimaging techniques have found that the biological structure of the hippocampus may result in the hippocampus processing information in specific ways. In order words, different parts of the hippocampus seem to process different aspects of memories and space. We tested whether this organization was indeed the result of biological structure or could be at least partially due to experience. In our experiment, participants were trained to navigate in a neighborhood in Pittsburgh, PA using a Google Street View-like program. We found that individuals who were strong navigators to begin with show standard hippocampal-organization, similar to what past studies have reported. However, individuals who were weak navigators showed more disorganized hippocampal-organization, demonstrating that the organization of the hippocampus can change, and can be improved with training. Together, our results show that the biological structure of the hippocampus isn't the only thing that determines its organization, and that standard hippocampal-organization may be important to successfully navigate in new environments. **Subject Category**

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Jason Ozubko Funding Sources Other Source of Support

144 • The Role of Power on Sexual Assault

Grace Miller, Nieve Mahood, Isabella Robles, Adele Beltrani

Abstract

Rape is a highly gendered crime considered to be driven by power due to gendered sex roles that supports male domination and female exploitations (e.g., Brownmiller, 1975). Indeed, scholars studying "rape culture" identify such environments to be male-dominated and male-governed. Recent work using secondary data, however, challenged this assumption, finding that greater numbers of sexual assaults occur in environments in which men held less power (Gravelin et al., unpublished). Our current work experimentally explores the conflict between theoretical discussions of rape culture and existing empirical assessments. In particular, we assess how manipulations of political, legal, and economic power between men and women impact acceptance for sexual violence and perceptions of safety in reporting sexual violence. While data collection is on-going, preliminary analyses suggest a protective factor of female power on male acceptance of sexual violence. Conversely, power does not appear to play a role in perceptions of safety in reporting an assault; compared to men, women feel less confident that reports of sexual assault will be taken seriously regardless of power framing. Considerations for the implications of our work in the current climate and future directions of our research will be discussed.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Claire Gravelin Funding Sources None

1C: Geography & Sustainability Studies Session

9:00-10:15am, Wednesday, 26 April 2023, Bailey 103 Session Chair James Kernan, Geography & Sustainability Studies

3 • Gasoline Station Geography's Discovered Middle Ground: A Retired Entrepreneur's Reflective Oral Account S

Mailey Geiger

Abstract

Historical appraisal of gasoline stations has previously been limited primarily to their growing association with Big Oil in the twentieth century. Research emphasis has included: branding, architecture, place–product packaging, and the attrition of small independent operators, a withering which reached a crescendo in the 1970s. The middle ground of multiple station independent ownership in regional or metropolitan settings remains largely unexplored. Based on oral sources, this paper traces the emergence and growth of a 134 - station 'empire' of discount retail gasoline stations in mostly, a single city. The Geiger-owned stations achieved recognition without branding, with canny location choices, and impressive price competition. However, their near-ascendancy in the 1970s could not survive a global oil crisis.

Subject Category

Social Science Categories: Geography

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor

Darrell Norris

Funding Sources

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

51 ● Dollar Generalization: Locational Strategies of Dollar Store Chains in Low Density Settings *S*

Naomi LaDuke

Abstract

Dollar stores have quickly become a ubiquitous feature of the American landscape. At present there are more than 41 thousand stores associated with the three major chains and a dollar store for every eight thousand Americans, with striking geographical variations at the state level. There are three thousand people per store in Mississippi but fifty thousand per store in Washington State. The distribution of dollar stores on the state level is associated with factors such as income and distance from the headquarters of the chains. Most Americans enjoy easy access to dollar stores, and some are faced with few if any shopping alternatives. The 'dollar store debate' focuses on the proclivity of the chains to favor low-income settings, notably in inner city food desserts. ILSR for example has mapped the correlation between race and dollar store incidence in four cities. To date, there has been little formal analysis of dollar store locational strategies. My paper combines a regression-based analysis of dollar store incidence at the state level with a focused micro-scale analysis of dollar stores' locations in three regional settings. These are Western New York, West Virginia, and Northwestern Nebraska. At such local scales of reference, the contextual circumstances of dollar stores can be assessed in detail, with for example questions of Main Street viability.

Subject Category

Social Science Categories: Geography Faculty Sponsor Department Geography Faculty Sponsor Darrell Norris Funding Sources None

34 • The Development of ESG Disclosure Framework (Flash Presentation) 💋

Natsuki Takata

Abstract

What did you purchase the last time you went shopping? Were you aware of where it came from, how was it made, and what impact it has on people and the planet? This presentation will address the fundamental concept of ESG disclosure and the problems related to ESG reports, particularly from the consumer's point of view.

ESG stands for Environmental, Social, and Governance. The purpose of ESG criteria is to implement a set of standards to measure the impact of a company's behavior on these three aspects of society, enabling socially conscious investors to screen potential investments.

The original practice of ESG is considered to have started in the 1960s, when some investors began excluding stocks from their portfolios based on businesses' ethics rather than solely on their financial prowess. As we get closer to 2030, the target year of the United Nations' 17 Sustainable Development Goals, ESG performance is gathering attention from many stakeholders – especially from consumers.

Consuming products and services from companies is a form of showing support for their practices through monetary compensation, so it is important for consumers to choose socially conscious companies to "invest" in by reviewing ESG

criteria. However, ESG reporting is an unmatured topic. Today, it is difficult to analyze companies' ESG performance due to a lack of regulation, which causes ESG divergence in terms of measurement, scope, weight, reporting agents, and region.

Learn more about responsible consumption such as checking ESG reports, comparing multiple ESG rates, and paying attention to future improvements.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

Geography and Sustainability Studies

Faculty Sponsor James Kernan Funding Sources None

53 • The Environmental Impact of Fast Fashion (Flash Presentation) 💋

Libby Cook

Abstract

The term "fashion" has been around for centuries, and has been adapted in many ways throughout history. Fashion is a means of individualism and expression that reflects the time and place of a specific context. We wear what we think is "trendy" at the moment, but also cater it to what best suits us. With the works of industrialization and globalization, we are able to purchase these fashionable items at a rate that keeps up with trends. But, with this fast overturn of fashion, comes a substantial impact on the environment. Fast fashion is composed of outsourcing workers from developing countries to make clothing with cheap material at an extremely fast rate, and in result creates an extremely short life cycle for the apparel. This type of fashion generates an environmental issue at every stage of the apparel life cycle, with overuse of water, chemical pollution, and textile waste. The consequences of fast fashion are already seen, with riverways being polluted with dyes and chemicals, and landfills no longer have enough space for wasted textiles. The damage of fast fashion is becoming irreversible, but there is still time to mitigate the impacts on a global and individual scale. Fashion companies need to abandon the model of overproduction & consumption and shift to eco-friendly items that have a lasting impact in your wardrobe. Practices on a personal scale like upcycling and shopping sustainably also have lasting effects that not only save money, but also contributes to one less item going to waste.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

Geography and Sustainability Studies Faculty Sponsor

James Kernan Funding Sources

None

189 • The Presence and Influence of Mercury in Adirondack Lake Ecosystems (Flash Presentation) S

Liz Haley

Abstract

Loons are a special indicator species as they are sensitive to environmental conditions such as air pollution, high mercury concentrations in lakes, human disturbance, and factors related to climate change. Their presence can be indicative of fish composition in a lake and indirectly the stability of the aquatic ecosystem. Although they do not mate for life, Loons return to the same lake year after year to breed. However, changes in their breeding environment can inhibit their reproductive success. The Adirondack Mountain ecosystem has been facing such environmental changes such as increased acid rain, methylation of mercury, and air pollution. As such, the flora and fauna have been reacting to

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fluctuations in habitat quality. It is our duty as stewards to monitor and preserve the distressed flora and fauna, and we can use loon observations as a tool to do so.

Installing monitoring and management guidelines that aid loon reproductive success and survival has compounding advantages because of their role in the ecosystem and their anthropogenic values. Since loon presence is such a close reflection of ecosystem health, their absence can be a call to action. A lot of these subtle environmental changes are invisible to us and incredibly detrimental to environmental health, and they would otherwise persist unseen if it were not for loons. Without them, we would not notice a need for action before it is too late.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department Sustainability Studies Faculty Sponsor James Kernan Funding Sources None

1D: Sociology of Wonder Part 1

9:00-10:15am, Wednesday, 26 April 2023, Bailey 104 Session Chair Steve Derné, Sociology

15 • Wonder in Modern Life Through Animals

Makenzie Pagano

Abstract

Jung believes that individuals living in modern society have lost their primal connection to nature and frames the dissociation from nature as a characteristic of modern society. According to Jung, nature can enchant individuals, and due to our disconnection, people in modern society are unable to experience wonder through nature. He associates being enchanted with feelings of awe, peace, curiosity, and admiration. However, Jung failed to consider how people in modern society still interact with nature, more specifically, our interactions with domesticated animals. Through sociological introspection, I analyzed my own experiences with animals and found that I still experience wonder through nature, despite my participation in modern life. I found that my experiences with animals resulted in the same feelings Jung uses to characterize enchantment, such as curiosity and awe. Therefore, my introspection confirms that Jung failed to realize how we're still able to experience wonder through nature, especially when considering our experiences and interactions with animals.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Steve Derné Funding Sources None

261 • Experiencing Wonder: Through Encounters with Snails: A Sociological Perspective

Chloe Willson

Abstract

Wonder is defined by Jung as proximity and sudden immersion in nature. He talks specifically about modern society and how it has led us away from nature almost entirely; therefore we can no longer experience wonder in the form of

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nature. He also touches on how wonder is experienced as a sudden and unexpected feeling. Though I agree with Jung's statements about nature being a powerful source of wonder, I disagree with his statements of our modern society being so far removed from nature that we can no longer experience wonder through anticipated encounters with nature. Through both my sociological introspection and wonder journal for the first few months of the semester, I will walk through the wonder that I experience through nature, specifically how the wonder that I have encountered with snails exemplifies that we cannot only still experience wonder through nature in our modern society but further we can anticipate wonder in our experiences with nature.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Steve Derné Funding Sources None

23 • Wonder in a Kelp Forest: How an Individual Interspecies Connection with an Octopus can Lead to Self-Transformation

Victoria Fears

Abstract

Arnaud Halloy and Veronique Servais discuss the extraordinary connection that can occur between humans and dolphins within wonder communities, leading to enchantment, intense emotions, and personal revelations. Through the use of documentary analysis of the film "My Octopus Teacher," I found that a similar interspecies connection is revealed between a man and an octopus as they build a relationship within a kelp forest in South Africa. Evidence from this documentary proves Halloy and Servais's point that individuals who experience interspecies connections experience enchantment and self-transformation; however, these theorists argue that such a relationship only occurs between humans and dolphins, and is only legitimate if the individual shares their experience with a larger wonder community. My findings suggest that these profound interspecies connections can form between octopi and humans, as well as on an intrapersonal level rather than within a wonder community.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Steve Derné Funding Sources None

1E: Edgar Fellows Panel 2

9:00-10:15am, Wednesday, 26 April 2023, Bailey 105 Session Chair Lee Pierce, Communication

33 • How Universal is the Contemporary Human Rights Regime? Firsthand Exploration in Senegal

Lia Wortsman Abstract As our world becomes increasingly globalized and politics ever more internationalized, human rights—both national and international—have risen to the forefront of global debate and negotiation. Acting as an increasing source of international legitimacy and judgment, institutionalized human rights have become one of the primary ways in which states—both old and new—are evaluated in the international arena. Are human rights universal or western norms? How universal is the contemporary human rights regime? To answer these questions, I study the status of human rights in Senegal. During my month spent in Dakar this past summer, I explored the country's history of human rights, as well as its foremost ongoing human rights crises—particularly those of the rights of women and children. In conducting research at the West African Research Center and interviewing civilians, I attempted to glean more comprehensive data on the subject, as well as revisit the Western tradition of Occidentalism and its relationship to the universal human rights regime. My study deconstructs past and new attempts not only towards improvement and advancement in Senegal, but in the international human rights community as a whole. My presentation, supported by my critical findings on civil rights infringements and swift social activism suppressions, will explore the evolution of contemporary human rights norms and provide my own suggestions for achievement of a truly universal human rights regime. My research makes major contributions to the academic debate on the universality and cultural relativism of human rights.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department Political Science and International Relations

Faculty Sponsor Raslan Ibrahim Funding Sources None

281 • Face Threats Associated with Racism-Related Communication in the Classroom

Anna Lynch

Abstract

This study utilizes interviews to investigate the research question, what face threats may occur when white students engage in communication related to racism in classroom settings? The participants in this study are white-identifying college students enrolled or previously enrolled in classes with topics related to racism. The interview questions explore white students' experiences participating (or not participating) in conversations about racism. Their responses were then analyzed using the theoretical framework of facework theory. In recognizing the face threats associated with conversations about racism for white individuals, we can work to maximize antiracist engagement and learning for those who do not experience racism firsthand.

Subject Category

Social Science Categories: Communication Faculty Sponsor Department Communication Faculty Sponsor Meredith Harrigan Funding Sources None

41 • Narcotic Poppies and "The Herb of the Immortal": Understanding Opium and Hashish during the Islamic Golden Age (800 A.D.-1200 A.D.)

Zackary Irish

Abstract

This presentation will concern itself with the usage of narcotics such as opium and hashish in early Muslim communities. Many Westerners mistakenly assume that Muslims did not engage with intoxicants due to the Quran's prohibition of alcohol, but this research will argue that these substances were present in pious and professional communities alike.

The omission of direct references to opium and hashish in the Quran left Muslims to decide for themselves the proper uses of these substances, leading to controversies that heavily mirror our own issues today. These events are important to remember as many Muslim physicians made sizable contributions to the medical field involving narcotics, many of which have been forgotten due to the Western domination of science in recent centuries. For example, Muslims were some of the first to use anesthetics during surgeries, and pioneered early treatments for mental illnesses such as chronic depression and epilepsy. Intoxicating substances were also present in Islamic sects such as the Sufi mystics and the famed Order of Assassins in Persia. These groups incorporated mind-altering substances into their practices and beliefs about reality, attracting criticism from both Sharia-abiding Muslims and later Orientalist scholars. The purpose of this research is to investigate the uses Muslims found for narcotics and the subsequent historical debates that arose from their discoveries.

Subject Category

Interdisciplinary and Other Categories: Medieval Studies Faculty Sponsor Department History Faculty Sponsor Mohammad Sadegh Ansari Funding Sources None

74 • Developing and Strengthening Allyship Identity in Emerging Adults: A Workshop-Based Intervention

Ciara Knott

Abstract

The present study examines the effect of diversity, equity, and inclusion (DEI) education on college students' allyship and empathy perceptions. Following a workshop-based intervention, results showed a statistically significant increase in students' allyship along three dimensions: *oppression awareness* (OA), *openness & support* (OS), and *knowledge & skills* (KS). After conducting a series of paired samples t-tests, results indicated a significant difference between students' OA self-reported scores before (M=4.00; SD=0.69) and after training (M=4.56; SD=0.65); [t(42) = -5.24, p < .001]. Results also revealed a significant change in participants' OS scores before (M=3.78; SD=0.63) and after the workshop (M=4.36; SD=0.65); [t(42) = -7.18, p < .001]. Lastly, a significant difference was illustrated between the students' KS scores before (M=3.27; SD=0.70) and after training (M=3.75; SD=0.73); [t(42) = -4.12, p < .001]. Pre-intervention, all bivariate correlations between prosocial actions (PA), prosocial feelings (PF), and cognitive empathy (CE) variables were statistically significant (p < .05), ranging from weak (r = .277) to strong (r = .765) associations with students' scores on the OA, OS, and KS instruments. Post-intervention, most bivariate correlations between PA, PF, and affective resonance (AR) variables were statistically significant (p < .05), ranging from weak (r = .356) to strong (r = .724) relationships with participants' scores on the OA, OS, and KS measures. In practice, exposing college-aged students to a brief, researchdriven DEI workshop may serve as an effective method for strengthening allyship.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department

Psychology; Multicultural Affairs

Faculty Sponsor

Nicholas Palumbo; Charlotte Wade

Funding Sources

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

1F: Women's & Gender Studies Capstone Projects Session 1

9:00-10:15am, Wednesday, 26 April 2023, Bailey 201 Session Chair Maria Helena Lima, English and Women and Gender Studies

131 • Is Accessibility Available to All?

Phoebe Walther

Abstract

Within the special education system, there are three major components of disparity: placement, identification, and discipline. My capstone project aims to bring attention to these disparities, how race, ethnicity, gender, and socioeconomic status are connected, and provide a means to combat them through policy and practice. I will specifically focus on the Rochester area in my research and the disparities within the special education system in the school districts. I will research the discrepancies with race, ethnicity, and gender within the classrooms and students with Individualized Education Plans (IEPs), their identifications, placement within the school (self-contained classroom versus general education classroom), and the discipline plans. An IEP is a document that specifically states a student's classification (i.e. Autism), strengths and areas of growth in all subjects and life skills, their recommended placement within the school, their goals for the year, and services provided such as Occupational Therapy, Speech and Language Therapy, and Physical Therapy. All vary based on identifications and individual student ability however there is a growing disparity between male and female students, and students of color and white students and their placements, identifications, and discipline plans. While presenting this information I will provide recommendations for policies and practices that could help combat this growing disparity.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women & Gender Studies Faculty Sponsor Maria Lima Funding Sources None

164 • Are all NYS Schools Equally Addressing Inequality through Education?

Brianne Hansson

Abstract

At SUNY Geneseo, I have taken classes for three years that taught me how to write lesson plans, manage a classroom using research-based strategies, teach reading, math, science, and social studies based on the NYS learning standards. I have learned the importance of inclusive education and how to teach students with disabilities as well as students of different demographics or learning styles. NYS learning standards are meant to outline what a teacher should teach per grade level in each subject area. Social Studies standards give an outline of what parts of history should be discussed and what themes/concepts should be taught. I will have such standards as a starting point for my Capstone, wondering whether NYS curriculum gives schools enough to teach diversity and U.S history in elementary schools. I will also use what I have learned in a classroom setting and applied to a semester in a student teacher position at two different elementary schools in the Rochester area. My student teaching placements may have both been first grade classrooms, but each environment was very different. Has a SUNY college really prepared me to be a 1st grade teacher at a public school and at a charter school? In this paper I will argue that based on my experience at two NYS elementary schools, not all NYS schools are effectively and equally teaching an inclusive American history and shedding light into inequality and racial justice.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women & Gender Studies

Faculty Sponsor Maria Lima Funding Sources None

276 • Inequitable Education

Iris Kahris

Abstract

A child's education is an incredibly influential factor to the development of their lives as adults. There are a plethora of aspects that play into a child's education from the standard of academics and the topics chosen to be taught, to the community developed, mentors established and various support systems created. For example, I will examine after school programs, athletics and artistic programs in addition to course offerings and physical resources that are available at the respective schools. Throughout this paper I will examine the differences and similarities in school programs between schools with predominantly white students and schools that are predominantly comprised of Black students and students of color. In Buffalo, New York, a historically racially segregated city, the education system highlights the inequalities between the educational system for white students and Black students. As a former Buffalo Public School student, I experienced firsthand the stark differences in education offered to students depending on their race. As a white woman, I have a unique perspective of this disappointing societal issue from my experiences in the Buffalo Public School system. Although this work will focus on inequalities in the education system in Buffalo, NY, I can surmise that the problems in Buffalo will be representative of a larger societal issue in the U.S. as a whole. Additionally, I will divulge into why the inequities matter and the subsequent results of a subpar education system.

Subject Category

Interdisciplinary and Other Categories: American Studies

Faculty Sponsor Department Women's and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

284 • Including Colonization Education into LGBTQ+ Spaces on College Campuses : How Safe and Inclusive are "Safe Spaces"?

Montgomery Offhaus

Abstract

Many queer students of color struggle to find community on a college campus setting. Queer spaces are typically dominated by white representation and westernized perception. Westernization and white supremacy have had an enormous impact on how queer people of color develop their queer identities. Queer Native American and Two-Spirit populations have been villainized, sent to conversion therapy, and murdered for their gender fluid ideologies and spiritual practices. To ignore the history of white supremacy and colonization in queer spaces does an enormous disservice to not only queer students of color, but the entire community at large. In this paper, I will first discuss the intersectional experiences of indigenous and queer communities. I will then argue why queer safe spaces in a college setting need to educate themselves on indigenous feminism and how our understandings of gender in America are based on the white settlers' narrative of cis-heterosexism.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

1G: Creative Arts Session

9:00-10:15am, Wednesday, 26 April 2023, Bailey 202 Session Chair Jonette Lancos, Theatre & Dance

45 • David Bowie: Face the Strange

Alannah Egan

Abstract

Pop icon David Bowie (1947-2016) was a pioneer in the music industry and the arts as a whole. In addition to his innovations in music, Bowie made strides in the effort to further the acceptance of the LGBTQ+ community and the movement for gay rights. In this paper, I argue that David Bowie used his music and androgynous fashion alongside his personal life to commit himself to the cause of LGBTQ+ rights. I also show how Bowie's rise to fame coincided with the Space Age and how he capitalized on the public's excitement over the unknown to illustrate how and why the LGBTQ+ community should be accepted as a valid, integral part of society. This paper explores and solidifies these connections through historical accounts of the time period, personal stories and experiences surrounding David Bowie and the plight of the LGBTQ+ community, theoretical analyses of Bowie's music, and the discussion of studies regarding David Bowie and his social impact. The immediate goal of this paper is to illustrate Bowie's contributions to the movement for LGBTQ+ rights, and on a larger scale, this paper serves to convey the importance of music and artists in furthering the fight for social justice of oppressed groups.

Subject Category Arts and Humanities Categories: Music

Faculty Sponsor Department Music and Musical Theater Faculty Sponsor Monica Hershberger Funding Sources None

203 • Hellfighters and the Castle Trott March (Flash Presentation)

Shamar McFarlane, Alannah Egan

Abstract

Our presentation will consist of short discussion about the score Castle Trott March Composed by James Reece Europe (transposed by Shamar McFarlane, conducted by Alannah Egan) and its relation to the Harlem Hellfighters. We will talk about our experience with learning about the the score through our different mediums. We will explain who the Harlem Hellfighters are and why they commissioned this piece from James Reece Europe. Along with this we will show a video of a performance for the Castle Trott March conducted by Alannah Egan, preformed by the Geneseo Symphony Orcestra.

Subject Category Arts and Humanities Categories: Music Faculty Sponsor Department

Music Faculty Sponsor Leah McGray Funding Sources None

103 • Dance History: Women as Artistic Innovators

Shannon Ervay

Abstract

Historically, dance has evolved because of the contributions of talented dancers and choreographers, an intricate lineage of movement and narratives dating back to the beginning of human history. Often, historic dancers are remembered for their technique and performances, but should also be recognized for the innovation that their artistry had on the purposes of dance and its societal reception. Accurate historic recollection of dance requires understanding and highlighting the achievement of artistic women to empower the future of women in dance. Women have shaped dance today with their performances as dancers, choreographers, and creators, their contributions allowing for new perspectives of dance, as not only a mode of performance and storytelling, but social change.

Subject Category

Arts and Humanities Categories: Dance

Faculty Sponsor Department Dance Faculty Sponsor Jonette Lancos Funding Sources None

167 • Dance Kinesiology and the Physics of Dance (Flash Presentation)

Emily Rennells, Haley Neufeld, Penelope Zenhausern

Abstract

Kinesiology is the study of how the body moves which has a great impact on the study of dance. The physics of dance is related to kinesiology and is regularly experienced and understood by dancers. The physics behind dance movements can be useful, and the overall ideas can affect the way dancers perform and think about each movement. A study was performed where physics concepts were applied to regular movements a dancer would encounter throughout the course of a class. It was found that many different physics ideas can be applied to dance movements and the application of such ideas can help a dancer further their technique.

Subject Category

Arts and Humanities Categories: Dance Faculty Sponsor Department Dance Faculty Sponsor Jonette Lancos Funding Sources None

1H: Women's & Gender Studies Capstone Projects Session 4

9:00-10:15am, Wednesday, 26 April 2023, Bailey 203 Session Chair Amanda Roth, Philosophy and Women and Gender Studies

150 • The Poetics of Queerness

Frances Sharples

Abstract

As poetry grows and evolves, its writers and features become more specialized, and the opportunities poetry as a medium presents expand; queer poetics, an ever-changing practice that has been imagined and reimagined over

centuries, provides an especially unique example of the many ways in which poetry has broadened over time. This presentation will deliver a short history and interpretation of several queer poets and theorists presented through a modern poetic lens, followed by an analysis of how queer poets have broken binaries of all kinds. There will additionally be a gallery of the presenter's multimedia chapbook, inspired by the literary and theory-based studies presented.

Subject Category

Arts and Humanities Categories: Literary Arts

Faculty Sponsor Department English Faculty Sponsor Lytton Smith Funding Sources None

175 • Preventing Sexual Assault: Looking Through the Lenses of Gender and Sexuality

Abigail Ranieri

Abstract

In my presentation for Great Day, I will talk about the semiannual Love Shouldn't Hurt Campaign that the Title IX Office of SUNY Geneseo puts together each semester. This campaign raises awareness of intimate partner violence and sexual assault to students and staff. However, this semester my fellow interns and I decided to take a different direction. For the Spring 2023 semester we are putting together numerous different events throughout the month of April, which is Sexual Assault Awareness Month. Our events include a walk, a "What I was wearing" gallery, an event where members of Greek life can create survival kits for parties, and many other ones. We are hoping to make these events an annual thing for the Geneseo community where all working parts are involved such as students, faculty, and the local community in the town. The Love Shouldn't Hurt Campaign is going to be transformed into something where the Geneseo community looks forward to engaging and participating every year in the event.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies Faculty Sponsor Department Women and Gender Studies Faculty Sponsor Amanda Roth Funding Sources None

206 • The Eight Dimensions of Positive Sexuality: Identifying what Sex Positivity Means

Kassidy Schad

Abstract

Positive sexuality as a term was coined by the Center of Positive Sexuality and can be applied to understand and successfully address a wide variety of important socio-sexual issues, including sexual violence, sex education, erotic labor, and marginalization and injustice toward sexual minorities. Positive sexuality matters because it offers a way to address social issues through sex-positive research and education in a way that is safe, caring, and cautious with open and honest communication. In this presentation, I will discuss my role as an Education Intern at the Center for Positive Sexuality, including an overview of the organization, their mission, and the tasks that I have taken up. In addition, I will discuss the Eight Dimensions of Positive Sexuality, which is a framework that explains what positive sexuality is and how it should be approached and is applicable across all levels of social structure, as well as how this relates to Women's and Gender studies as a discipline.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies Faculty Sponsor Department Women's and Gender Studies Faculty Sponsor Amanda Roth Funding Sources None

308 • Contraceptive Equity Among College Students

Charity Roulo

Abstract

Birth control is an essential aspect of reproductive health care that should be easily accessible among people who can bear children. This, however, is not the case for many individuals. There are many barriers that prevent easy access to birth control, including but not limited to gender identity, socioeconomic status, and other barriers associated with access to general health care.

In this presentation, I will discuss research related to contraceptive equity and barriers to access of birth control among college students. In addition, I will discuss my current internship with New York State Birth Control Accessibility Project (NYBCAP), an organization dedicated to combating contraceptive equity by educating communities about issues related to accessibility and working with college campuses to make different forms of birth control more accessible.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women and Gender Studies

Faculty Sponsor Monica Schneider Funding Sources None

1I: Edgar Fellows Panel 3

9:00-10:15am, Wednesday, 26 April 2023, Bailey 204 Session Chair Michael Mills, National Fellowships & Scholarships

43 • Capitalizing on Social Capital Systems in Development

Carley Salerno

Abstract

Social capital is a vital (and vitally underutilized) resource in Less Developed Countries (LDCs) that are attempting to develop their economies. It is a wealth to which even the poorest of communities have full access, and has a large hand in the equitable distribution of growth's economic benefits.

Social capital enhances connections both within and between groups in society, providing a great deal of value in those communities that take advantage of its benefits. Nonetheless, its huge potential remains unrealized in the predominant developmental paradigms used today.

Abundant theoretical research has been undertaken on types of social capital, its benefits, and its effects on societies. However, the practical aspect of this wealth, or the intentional design and implementation of systems that both produce and effectively channel social capital, is drastically under researched. My paper attempts to address this gap by conceiving a practically applicable social capital generating system, which subverts the pitfalls of traditional ODA and channels both bridging and bonding social capital into linking social capital, which strengthens both social networks and government institutions in tandem.

Subject Category

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

65 • Using American Sign Language in Classroom Management as an Alternative Augmentative Communication Form for Students with Autism Spectrum Disorder in Kindergarten Through Third Grade

Katherine McGoey

Abstract

Some students with Autism Spectrum Disorders (ASD) engage in behaviors that are termed "problematic" in the classroom. Problematic behaviors can include screaming, kicking, hitting, biting, throwing objects, and self-injurious behaviors. Good classroom management often reduces instances of problematic behaviors; however, specialized strategies are necessary when engaging a diverse group of students. For students who are low-functioning on the autism spectrum and experience language difficulties or delays, increasing their ability to communicate may help decrease the frequency of problematic behavior. Augmentative Alternative Communication (AAC) can be used to increase a student's ability to communicate. While there are many forms of AAC, the use of American Sign Language (ASL) may be particularly effective for students with ASD. By selecting functional communication signs for the student and using explicit teaching strategies, ASL increases communication abilities and decreases the frequency of problem behaviors. Students in kindergarten through grade three are learning the rules of social communication and how to interact with their peers. While the teaching of social skills is an essential element at all ages of special education, giving students the tools to communicate early on will prevent future instances of problem behaviors and help establish prosocial relationships with students' peers. ASL is not an effective AAC for all students who experience communication difficulties and are on the autism spectrum. Students need to have at least average fine motor skills for ASL to be considered as an option. Students with these characteristics may benefit from teachers implementing ASL into their classroom management.

Subject Category

School of Education Categories: Childhood Education/Special Education

Faculty Sponsor Department Education Faculty Sponsor Douglas MacKenzie Funding Sources None

73 • "Remember the Ladies" in the Classroom: An Inquiry Unit on the Legacy of America's First Ladies

Ashley Kupiec

Abstract

In an effort to bring more diverse perspectives into the social studies curriculum at the elementary level, educators and curriculum developers must consider ways to bring previously-overlooked voices into United States history. This project seeks to highlight women's role in American society by creating an original, inquiry-based unit focusing upon First Ladies. Longstanding issues with women's portrayal in history include lack of content in general, failure to illustrate the evolution of women's rights over time, and a perpetuation of misogynistic stereotypes. By using First Ladies, students are able to understand women's position in society cross-temporally, as their treatment and achievements often reflect the status of women in general in the time period during which they served. Moreover, the actions of the First Ladies can demonstrate how women have defied gender norms, such as in their employment or their political actions. In this

unit for older elementary schoolers, students will be able to explore the roles First Ladies have taken on over the years, their employment outside the First Ladyship, their political involvement, and their appearances and the reactions of the media and public to those appearances. Finally, students will be challenged to question what the future could look like: what if we had a First Gentlemen, for example? In summary, the ambition of this project is to bring forward some of the lesser-heard voices of American history and create a unique unit of study that will help students to learn the struggles and triumphs of women in our society.

Subject Category

School of Education Categories: Early Childhood/Childhood Education

Faculty Sponsor Department Education Faculty Sponsor Crystal Simmons Funding Sources None

315 • The Integration of Dance Into the Elementary Classroom

Grace Shannon

Abstract

Dance education is a commonality in the lives of countless young children in America. With the most recent studies estimating between 650,00 and 10,400,000 students enrolled in dance classes, the popularity of this extracurricular activity is irrefutable. Despite this, dance as a field is largely under-researched and under-reported. Of the studies that have been conducted, there exists a wide variety of advantages to dance education, particularly in the early childhood, middle childhood, and adolescent stages. This project examines the varying benefits of dance education in different realms of child development, including physical benefits, social-emotional benefits, and academic benefits. In doing so, it aims to establish the significance of implementing dance and dance education in the academic classroom to better support students as both a learning tool and a classroom management tool. To demonstrate this, five model lessons were designed in different subjects (reading, writing, math, science, and social studies) that all meet New York State standards while incorporating dance into the lesson. The goal of this project is to inform educators about the benefits of and best practices for integrating dance in the elementary classroom, regardless of prior experience.

Subject Category

School of Education Categories: Childhood Education/Special Education

Faculty Sponsor Department

Theatre and Dance; School of Education

Faculty Sponsor Jonette Lancos; Sharon Peck Funding Sources None

1J: Research Presentations in Geology Part 1

9:00-10:15am, Wednesday, 26 April 2023, Welles 115 Session Chair Jacalyn Wittmer Malinowski, Geological Sciences

127 • Bedrock Depth Analysis of Ulster and Orange Counties, New York

Alexander Russell, Mai Nguyen-Jeanneret

Abstract

The purpose of this project is to use water well and bore hole depth to bedrock data from Ulster and Orange Counties, NY to create county-specific bedrock elevation raster and contour maps. The data was provided by the New York State Geological Survey. This process included cleaning up any potential errors in the data, including duplicates and

transposed well and bedrock depth values, before converting it to a point feature class in ArcGIS Pro. Digital Elevation Models, at 1m grid spacing, were used to convert bedrock depth values at each point to elevation. A hillshaded relief map was also created to assist with interpretation of the data. The elevation data were interpolated over each county to produce a bedrock elevation raster. Inverse Distance Weighted (IDW) and Topo-to-Raster interpolation methods were used. We determined that, results from the different interpolations were similar and that regions with dense well/bore hole data, (usually located in valleys) more accurately reflected the expected elevation/depth to bedrock based on our surface geologic interpretations. Areas with few or no wells mostly occur in high elevation areas (e.g., Catskills). The landscape geology at those locations indicate shallow bedrock in the upland regions. Therefore, data points with near zero bedrock depth will be added to help bolster the contours in those regions.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department Geological Sciences Faculty Sponsor Nicholas Warner Funding Sources None

214 • Taphonomic Analysis of Drillholes in Bivalves from Conesus Lake, NY

Carlo Tobia

Abstract

This project aims to discover and analyze drill holes in bivalves sampled from a sedimentary core collected from Conesus Lake, the westernmost Finger Lake of western New York. Drill holes are leftover circular-conical cavities made by a predatory feeding structure (i.e. gastropods' radula), which is used to consume the soft tissue of a bivalve. Ecologic records of Conesus Lake indicate no documented carnivorous gastropod species, so this project also aims to determine the taxon responsible for the drill holes. Twenty-six bivalve single valves were selected from 3 to 58 cm depths from the surface of the core. Bivalves were identified at the species level and taphonomic scoring of valve preservation and degradation using a stereo microscope was conducted. Bivalve valves were mounted on SEM stubs and assessed using scanning electron microscopy for detailed drill hole measurements. Measurements were made of the outer and inner diameters of each hole to determine the origin of the drill hole features. Determination of highly frequent drill hole features on bivalves will help us understand the modern food web system and ecologic structure of Conesus Lake through time.

Subject Category Science and Mathematics Categories: Geological Sciences Faculty Sponsor Department Geological Sciences Faculty Sponsor Jacalyn Wittmer Malinowski Funding Sources None

186 • The Geohistorical Record of Anthropogenic and Agricultural Land Use Practices in the North and South Basin of Conesus Lake, Western New York S

Emily Abbati, Julia Rogerson

Abstract

The study aims to address anthropogenic effects, and how they influence sediment chemistry, mineralogy and elemental trends of Conesus Lake. Conesus Lake records past agricultural practices which encouraged continual remediation and monitoring since the mid-1990s. Piston and bolivia cores were collected from the north and south basins to evaluate the sedimentology and agricultural influence on the lake ecosystem. Cores were split, imaged, and analyzed for MS and XRF

using a multi-sensor core logger. One core was sub-sampled at one-cm increments for ²¹⁰Pb dating at St. Croix Watershed Research Station, sediments were then subsampled and processed for phosphate concentration and for XRD analysis. The phosphate concentration was determined using a photometer for the north and south deep basins. Preliminary results indicate a significant sedimentological change towards the recent in which organic content and grain size increases towards the upper 40-50 cm. The north basin shows overall lower concentrations of phosphate in comparison to the south. The south basin shows a dramatic increase in phosphate concentrations starting at 85cm that persists up to 25 cm then decreases toward recent indicating current remediation efforts. The abundance of anthropogenic-related elements in the lake are minimal but show dramatic increases starting at 63 cm, which is believed to be around 1860. Elemental concentrations increased from 63 cm to 30 cm corresponding to multiple MS peak accumulations in the lake. Towards the present, trends display a gradual decline in concentrations caused by the past 25 years of local remediation efforts.

Subject Category

Science and Mathematics Categories: Geological Sciences Faculty Sponsor Department Geological Sciences Faculty Sponsor Jacalyn Wittmer Malinowski Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

239 • Astrochronology of the Hanover Formation, Late Devonian, western New York

Faye Higgins

Abstract

The Hanover Formation in western New York State is composed of interbedded light and dark gray silty shales deposited in a pro-deltaic deep shelf to basin setting on the eastern margin of the Appalachian Basin. Milankovitch-scale and subprecession millennial-scale climatic cycles were detected by changes in bulk magnetic susceptibility (MS). The 30 m thick strata measured in outcrop represents ~800,000 years where the eccentricity, obliquity, and precession oscillations are visible as packages in decimeter to meter thick couplets of black and light gray shales. A 4.87-meter thick interval of the middle Hanover Formation from the West Valley NX-1 core (API#31-009-06740-00-00;830'-846') represents 92,516 years in our calculations. The core was sampled at 1 cm intervals for MS and was analyzed using a Fourier-Transform analysis. From this, cycles at 20, 10-11, 7, 3.2-3.3, and 2-2.05 Ky were detected and interpreted to be precession/sub-precession cycles. Using the MATLAB package *Acycle*, a dataset containing MS values from the entire duration of the Hanover Formation was analyzed with spectral analysis and band-pass filtering. The short eccentricity cycle was isolated and used in age scale tuning to produce a duration of time equal to 816,000 years and an average sedimentation rate of 3.16 cm/Ky. The West Valley core is being tuned to this timescale to develop its astrochronology with a high degree of confidence. Preliminary results from spectral analysis show a 0.57 m cycle is present with 99% confidence within both datasets that can be used for tuning the core.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department Geological Sciences Faculty Sponsor Jeffrey Over Funding Sources None

249 • Changes in Depositional Environment in the Upper Devonian Genundewa Limestone in Western New York based on Fauna and Lithology

Nathan Pembrook

Abstract

Sea level goes through cycles of rising and falling which changes the depositional environment and is conserved within the rock record. Based on this, if the fauna present within the Genundewa Limestone differs from the bottom of the formation to the top, then the depositional environment changed as the Genundewa formed. To measure one of these sea level changes samples from the lower and upper portion of the Genundewa Limestone formation were collected from the Jones Bridge Road outcrop near Geneseo, New York. Fossils were extracted by dissolution of samples in 10% formic acid and selecting fossils from the insoluble residue collected from 0.6 mm and 0.125 mm sieves. Numerous juvenile conodonts were recovered from the genera Ancyrodella, as well as Polygnathus, and Icriodus. Along with conodonts, Dacryoconarida, a cone-shelled marine invertebrate, were recovered, an indication of calcareous oceans at the time of deposition. The presence of Polygnathus and Icriodus indicate a depositional environment on the marine shelf in relatively shallower water. Ancyrodella indicates deposition in offshore deeper water environments. The greater abundance of Ancyrodella in the upper Genundewa suggests shallower water conditions relative to the lower portion, indicating a drop in sea level as the Genundewa formed.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department Geological Sciences Faculty Sponsor Jeff Over Funding Sources None

1K: Sustainability Optimization Part 1

9:00-10:15am, Wednesday, 26 April 2023, Welles 117 Session Chair Ahmad Almomani, Mathematics

274 • Reducing Food Waste on Campus S

Jesse Larkin

Abstract

Nearly 40% of all food in America is wasted, while 34 million people are food insecure.[1] Project Drawdown estimates that reducing food wastage could eliminate 88.5 to 102.2 gigatons of equivalent CO2 emissions by 2050.[2] An optimal solution for this aim is to divert edible food that would usually go to waste to those in need. This project will propose a food waste reduction policy that the college or local institutions could adopt. For example, the college could strive to donate uneaten and leftover food from the dining halls and large events instead of having it go directly to composting. The benefits of successfully implementing such a policy would extend beyond climate change and food insecurity by strengthening community interconnectivity, supporting a culture that values sustainable habits, and providing educational opportunities.

[1] <u>https://www.feedingamerica.org/our-work/reduce-food-</u> waste#:~:text=How%20much%20food%20waste%20is,food%20in%20America%20is%20wasted

[2] https://drawdown.org/solutions/reduced-food-waste

Subject Category Interdisciplinary and Other Categories: Sustainability Studies Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

244 • Optimizing Biodiesel Usage in the Geneseo Egarden ${\cal S}$

Jacob Vogel

Abstract

A big problem with biogas and biodiesel production and supply chains is that they contribute to much of our methane emissions into the atmosphere. More efforts need to be made to reduce Methane leakage throughout the process. In addition, the supply chains for biodiesel and biogas are extensive, resulting in various greenhouse gas emissions throughout the process of turning the various organic materials into the gas or diesel itself. The egarden has the infrastructure and equipment to use biodiesel, however they have struggled to get clearance from the school to begin the process. By beginning the process of producing biodiesel, we would be able to not only provide great research opportunities but also a potential renewable energy solution for Geneseo. The goal of my research is to optimize this process, using various different techniques and strategies to demonstrate that this is a valuable process in both the environmental and financial senses that should be pursued by the school, beginning in the egarden.

Subject Category

School of Business Categories: Economics Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

231 • Sustainable Intensification in SUNY Geneseo's eGarden 😒

Elliot Pecora

Abstract

In this presentation, I will be expanding on the implementation and long-term goals of my project which works to optimize sustainability intensification on campus. More specifically, I will be working with the eGarden to increase yield while avoiding any negative effects on the environment, and even improving soil health, thus resulting in greater food security for students. Nationally, about one third of college students are food insecure, and our eGarden provides a large number of opportunities to provide healthful food for Geneseo students. In recent years, other students have implemented projects which focus on long term soil health and carbon sequestration, a trend which I'd like to continue. We can accomplish this through complementary, alternating, and strategic planting, as well as focusing on vertical growth. My goal is to ensure that this project is accessible to as many students as possible in order to increase the number of students who are not only aware of, but also invested in the eGarden and its future. Through increased student involvement, we can work towards covering more of our on-campus need for plant-based food options, thus improving students' nutrition and lowering carbon emissions.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

165 • Garden Optimization using Artificial Intelligence S

Ben Michlinski Abstract
Gardening suffers from inefficiency and a lack of volunteer help. One potential solution is the addition of automated, efficient processes to gardens. This could lessen the burden of gardening on an already diminishing workforce for SUNY Geneseo's own eGarden. The main idea is an automated sprinkling system which waters plants based on the amount of hydration needed on any given day, optimized for lack of waste. This would be monitored using a garden analytics program, which can suggest optimal resource usage depending on the weather and study trends in plant growth. It would also suggest a need for a removable, raised tarp to provide shade and protection for the plants during times of extreme heat or precipitation which could damage them.

Subject Category

Interdisciplinary and Other Categories: Environmental Studies

Faculty Sponsor Department

Edgar Fellows Honors Program

Faculty Sponsor Ahmad Almomani Funding Sources

None

1L: Biology Session 1

9:00-10:15am, Wednesday, 26 April 2023, Welles 119 Session Chair Suann Yang, Biology

20 • Drivers of Deep-sea Fish Community Biodiversity in Puerto Rican Waters 刘

Chryssanthi Tzetzis, Jacob Calus, Abisage Sekarore, Emily McMahon, AJ Petty, Allison North

Abstract

Biodiversity is a key indicator of the health and stability of ecosystems. The deep waters surrounding Puerto Rico contain a variety of habitats and geological features that house a wide range of organisms. To better understand the factors that drive community biodiversity, two remotely operated vehicles (ROV) and the submersible Alvin were used to survey the regions off the coast of Puerto Rico. Data were collected from the National Oceanic and Atmospheric Administration Office of Ocean Exploration Research (NOAA OER) Expeditions EX1502L3, EX1811, EX2206, the Alvin Science Verification Expedition AT50-02, and the Illuminating Biodiversity Expedition NF2202. This study explored how different environmental parameters such as habitat, depth, temperature, dissolved oxygen, and substrate type influence fish community composition, increasing our knowledge of ecosystem function and biodiversity. From depths ~200 to >6,000 m, fish biodiversity decreased with increasing habitat depth, favoring morphological changes that are advantageous for survival at extreme depths. Although oxygen concentration was not a sole predictor of fish abundance; more fish were observed in lower oxygen concentrations at shallower depths than in higher oxygen concentrations at greater depths. Fish observations varied across water temperature with generally more fish observed in warmer temperature waters. More fish sightings occurred on soft sediments compared to rocky and mixed substrates. This research enhances understanding of fish families and their relationship with environmental factors that could lead to better conservation efforts and practices.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor

Mackenzie Gerringer

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship, Sorrell Chesin '58 Research Award, Other Source of Support, Other External Grant

26 • Does the Changing Season affect the Soundscapes of Freshwater Ecosystems? ダ

Micah Hosley

Abstract

A soundscape is all sounds within a landscape and includes sound produced by living organisms, by humans, or by the abiotic environment. Previous studies have used soundscape data to assess the health and biodiversity of terrestrial and marine areas. These same principles can be applied to freshwater pond environments. This study collected underwater soundscape data from four ponds in the Genesee Valley. Acoustic measures were used to determine changes in the soundscapes across the season in our focal ponds, and to document differences between the four ponds. We found 22 unique sounds from biotic sources across our four ponds in the summer of 2022. Future studies should record pond soundscapes over longer timeframes to get a clearer picture of long-term seasonal soundscape changes and capture the full biodiversity of sound-producing organisms. This study paves the way for future long-term research in small freshwater environments.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Kristina Hannam Funding Sources Geneseo Foundation Undergraduate Summer Fellowship, Dr. Wendell and Barbara Rhodes Research Award

313 • Diagnostic and Clinical Outcomes of Schistosomiasis: An Analysis of Co-infection and Re-infection Data From a Community in Ghana

Tyler Dzuba, David Marx, Wai Cheung Tung

Abstract

Schistosomiasis is a waterborne parasitic infection targeted as a Neglected Tropical Disease by the WHO. *Schistosoma* reach maturity in the blood vessels surrounding the gastrointestinal or urinary tracts of their host and produce eggs that are excreted to common water sources, causing vast community spread. Southeastern Ghana is home to two primary species of schistosomes, *S. mansoni* and *S. haematobium*. Hosts can carry infections of both species simultaneously (co-infection), and can be serially re-infected as a result of re-exposure.

We hypothesize that re-infection and co-infection may cause either worsened or attenuated outcomes relative to a single infection. Either effect may be possible: multiple infections might yield some degree of immunological protection or might lead to compounding effects over time.

Data was collected from 2014 to 2019 at schools in Tomefa, a small, marginalized community near Accra, Ghana, through on-site surveys and blood, urine, and stool samples. Subjects range from 8 to 26, male and female (n = 337). Through a rigorous matching process, subjects' data were reconnected longitudinally for analysis.

Final analysis is forthcoming; preliminary results indicate that schistosomes may proliferate more strongly in coinfection, but re-infection might lead to more complex population dynamics than the dataset is powered to support. Clinical correlate analysis is also forthcoming.

An additional analysis was carried out to determine the impact of climate (rainfall and temperature) on both infection and reinfection rate of the community. Data of the area over time (2014-2019) of the Greater Accra was obtained and correlation analysis was performed.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Susan Bandoni Muench Funding Sources None

279 • Biology Mentoring (Biome) Program: Peer Support for First-year Students

Miranda Fanara, George Konstantinou

Abstract

Over the last few years, student learning has been disrupted multiple times, from in-person to hybrid and online format during the COVID-19 pandemic, and then back to in-person formats. In our prior research, we found that SUNY Geneseo students had difficulties with these transitions, with negative effects on their self-efficacy and mental health. As an intervention to improve student self-efficacy and mental health, we are piloting a peer mentoring program, Biome, for introductory biology students. This program provides advice and guidance to first-year students to create a more welcoming and inclusive environment. During biweekly meetings, students discuss topics related to academic success, being more involved, future career paths, and more. To evaluate the impacts of this new program on current participants, we will conduct three surveys: one asks about expectations going into the Biome program, the second will be halfway through to see if we are meeting their expectations and to evaluate self-efficacy and mental health of students, and the third will ask about improvements we could make to the program and if self-efficacy and mental health have changed. In our presentation, we will discuss how the surveys' results provide us with insight into students' experiences with introductory biology courses and find the best ways to mentor them and improve their college experience. Our presentation will conclude with future plans to expand this program throughout the biology department to reach out to as many students as possible to hopefully improve their mental health and self-efficacy.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Suann Yang Funding Sources Sorrell Chesin '58 Research Award

270 • What factors shape undergraduate students' perceptions of scientists?

Mouhamad Berte

Abstract

The lack of diverse representation of identities in science is linked to the reduced success of students from historically excluded groups. In particular, common science textbooks have little to no diversity in citations of scientists and depictions of identities. In my study, my goals were to learn how students at SUNY Geneseo view scientists, and what factors affect their views. I constructed a survey to ask students about their perceptions of scientists, along with questions to identify the factors that could influence these perceptions. I then analyzed the survey responses using qualitative analysis software. While almost all students reported that they liked learning about science, STEM majors were more likely to consider themselves to be scientists. Regardless of major, women were more likely to report that the representation of scientists that looked like them affected their perception of scientists and the field of science. Strong stereotypes were also expressed, such as envisioning scientists working only in laboratory settings. In this presentation, I also discuss how perceptions are influenced by academic achievement or performance, enjoyment of the subject, and identity as marginalized or privileged. Another barrier to students considering themselves a scientist was a lack of external credentials, such as a degree. My work underscores the importance of increasing diverse representation in science to reflect all people who contribute to the field. In my presentation, I discuss ideas for curricula that teach that there is not just one type of person who can be a scientist.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

Biology

Faculty Sponsor Suann Yang Funding Sources None

1M: Narrative Voices and Existential Africa

9:00-10:15am, Wednesday, 26 April 2023, Welles 128 Session Chair Kodjo Adabra, Global Languages & Cultures

42 • Africa Then and Now: Afro-Feminism and Decolonization

Merrill DiPonzio

Abstract

Despite the fact that the decolonization of Africa is often neglected in American classrooms, it's one of the biggest topics in modern history. It's too often that Americans are faced with a single story about Africa, and it's so important to listen to the voices speaking about their experiences in their countries. Female voices in history tend to be the ones we hear from less and second to the male perspective. However, these women were activists fighting alongside the men for political autonomy and liberation from the European powers that uprooted their traditions and established their own harsh regimes, which contributed to the exploitation of the resources these nations had. African women were important before and after their liberation from Europe. As these countries slowly gained their independence, the role of women changed as well. In this research, I would like to uncover the development of Afro-Feminism to see how it became what it is today and how it compares to feminism before colonization. Feminism looks different in each section of the world because of the various difficulties women had to face, so I would also like to look into the specifics that make up Afro-Feminism, such as nego-feminism which uses negotiation to communicate their needs. I believe I will find that feminism is stronger today in Africa because women feel they can go against traditions more than before; possibly from the empowerment they felt by rebelling against European colonialism. This could possibly have been a catalyst for gender equality.

Subject Category Arts and Humanities Categories: French Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Kodjo Adabra Funding Sources None

198 • Impacts of Colonialism and Birth of Neo-Colonialism through the Lens of Chinua Achebe's *Le Monde S'Effondre* [*Things Fall Apart*]

Carly Burgio

Abstract

Though the era of explicit colonial rule and power in Nigeria technically ended in 1960, the impacts of colonialism and the subsequent emergence of neo-colonialism are deeply embedded in the present. With this in mind, it is critical to examine colonist rule and how its remnants lingered in Nigeria throughout the rest of the 20th century and up until today. In order to fully understand neo-colonialism in Nigeria as it exists in the present, it is necessary to amplify narratives from Nigerian people. Their work and their voices are crucial pillars in the conversation surrounding this topic as emerging scholars aim to join the literary and socio-political discourse. Chinua Achebe's highly acclaimed novel *Things Fall Apart* has been a cornerstone of modern African literature, and the book not only speaks to the turbulence of the years leading up to the end of the colonial era in Nigeria, but to how the foundations of colonialism inherently contributed to disastrous crises in the years following Nigerian Independence. Though the book is originally published in

English, this paper will focus upon the French translation of the novel *Le Monde S'effondre* in order to expand the conversation to and contextualize it within the African-Francophone diaspora. This critical paper carefully examines the origins and impact of neo-colonialism born from colonial rule in Nigeria framed within the context of African Francophone literature; in turn, it will encourage scholars to use scholarship as activism to dismantle harmful social constructs and systems that exist today.

Subject Category

Arts and Humanities Categories: French

Faculty Sponsor Department

Global Languages and Literatures

Faculty Sponsor Kodjo Adabra Funding Sources None

212 • Africanfuturism and Feminism in African Literature

McKenzie Flynn

Abstract

Afrofuturism is not a new "-ism." The ideology that is Afrofuturism has been molded by generations of artists, musicians, scholars, and activists whose purpose is reconstructing "Blackness" in culture. Afrofuturism imagines a future that is not poisoned by the white supremacy that oppresses Black communities. Authors, directors, and artists create works of art, movies such as Black Panther, and novels like The Fifth Season by N. K. Jemisin, that drive the preservation, protection, and promotion of culture to produce a better future. Africanfuturism, a term coined in 2019, is defined as a subcategory of science fiction that centers around African culture, history, and mythology. Nigerian-American author Nnedi Okorafor wrote Noor in 2021, the story of a woman, Anwuli Okwudili, whose body is riddled with technological bodily enhancements after a car accident. After an unlucky experience, she's forced on the run, and the story revolves around the ideas of destiny, body, and technology. In this paper, I connect themes of Africanfuturism and feminism in African literature and discuss their importance in the realm of representation.

Subject Category

Arts and Humanities Categories: Comparative Literature **Faculty Sponsor Department** Global Languages and Cultures **Faculty Sponsor** Kodjo Adabra

Funding Sources

36 • Faith, War, and Rights of the Child Through the Lines of African Narratives

Lia Wortsman

Abstract

As the field of international human rights has risen in not only popularity but also legitimacy, the rights of the child have remained one of the most contentious topics of debate within the discourse. Expected cultural differences exist between regions of the world in how children are raised and educated, particularly between what many consider the global West and the global South. These are particularly difficult to navigate, as the two schools of universality and cultural relativity remain entirely at odds with one another when it comes to addressing the international treatment of children. However, there exist very real violations of child rights around the world, which are nearly universally recognized by all as severe abuses. In my paper, I explore the international issue of child soldiers within West and Central Africa, and through a comparison of two narrative works, I attempt to provide a better understanding of the experience of the child soldier, and ways in which this crisis can be better addressed. I discuss Ahmadou Kourouma's novel *Allah N'est Pas Obligé* about a boy soldier's experience in the Liberian civil war, as well as the content of the film

Rebelle (War Witch), about a young girl's experience after being forced in the Congolese militia. Through this crossanalysis, I connect the themes of child rights, war, and faith, exploring the role of religion and ancestral faith and mysticism in the treatment of children during times of war in Francophone Africa.

Subject Category

Arts and Humanities Categories: French

Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Kodjo Adabra Funding Sources None

1N: School of Business Session 1

9:00-10:15am, Wednesday, 26 April 2023, Welles 131 Session Chair Avan Jassawalla, School of Business

5 • Impact of a Team Leader's Personality on Virtual Team Effectiveness

Andrew Macpherson, Jennifer Sandle, Isaac Pollock

Abstract

Over the course of the last few years, highlighted by the COVID-19 pandemic, remote team work has exploded in popularity and prevalence all across the globe. This change in dynamic has led to questions about how leaders, their actions, and primarily their personalities, affects virtual team effectiveness. We have implemented Path Goal Theory and The Big 5 Personality types to analyze which personality traits are most conducive to virtual team effectiveness. The findings from our analysis conclude that the best personalities to be held by effective virtual leaders is a transformational leader with openness, conscientiousness, and extraversion. Based on this analysis, we have provided two managerial recommendations. The First is being intentional about interviewing for personality when hiring leaders. Good in person leaders are not always good virtual leaders.

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

16 • Recognizing If Your Employees Are "Quiet Quitting"

Lily Eicholzer, Emily Pietrantoni

Abstract

"Quiet Quitting" is a phenomenon that has been around for ages, however, has just recently seen a spike in occurrences after the Covid-19 pandemic. Many workers struggled having to transition back into the offices/into a hybrid schedule after being fully remote in their homes for so long. The term quiet quitting is a way to describe an employee's actions when they are working in a toxic environment, that provides no push for those employees to put in their full 100% work ethic. There are three main focuses in this research, including compensation/incentives/benefits, the selection process, and the legal environment in the workplace. If there is no growth in compensation and incentives, employees will start to disengage from their work, as there is nothing for them to work towards. In the selection process, generational differences were found to cause tension between employees themselves. Each generation holds different values about their work efforts and culture, which can make a hostile environment if it appears work efforts are not equal among all

of the staff. Within the legal environment, unappreciation of work and poor policies can create burnout. Research was then used to find action steps and recommendations to combat disengagement, burnout of employees and improve the workplace culture. We discuss the types of compensation that should be offered to employees, how to create an effective selection process to find employees who work well with one another, and policies that can be set in the legal environment to prevent burnout.

Subject Category

School of Business Categories: Human Resource Management

Faculty Sponsor Department School of Business Faculty Sponsor Avan R. Jassawalla Funding Sources None

59 • Impact of Remote Work Due to the COVID-19 Pandemic on Working Women's Motivation and Engagement

Sabine Francis, Anthony Sterbens, Shelby Soper, Kerry Dennin

Abstract

Covid-19 has been the cause of change worldwide, one way this is portrayed is the effect on women in the workplace. Women's motivation and engagement regarding remote work has been hindered and women everywhere are experiencing high levels of burnout. HR managers have been experiencing struggles related to keeping women engaged and motivated through remote work. HR managers need to implement new strategies to help increase productivity levels to help maintain a successful business. Also, due to the daily struggles of remote work and the pandemic, there has been a sharp decline in gender equality in the work environment.

Subject Category School of Business Categories: Human Resource Management Faculty Sponsor Department School of Business Faculty Sponsor Avan Jassawalla Funding Sources None

63 • The Impact of Remote Work on Women's Career Advancement

Rachel Denzler, Ashleigh Scheidweiler, Alexis Schiedel, Benjamin Tucker

Abstract

The issue of equality in the workplace for women has been relevant for decades. Women have been, and continue to be, fighting for their rights. One significant legislation of importance to organizations is the Equal Pay Act of 1963, which enshrined into law that women must be paid the same as men for the same work. However, with the rise of remote work, some are saying that there is now a "Zoom ceiling", disproportionately affecting marginalized groups, including women. While remote work existed before 2020, it has since exploded in popularity. Covid-19 had a significant impact on workplaces. With lockdowns and closures, many workers had to switch to remote work. Many organizations have since stuck to a remote or hybrid workplace, due to workers, and specifically women, liking remote work. Women were more negatively affected by this modality shift because they were expected to work while also tending to the duties at home; therefore they had less time for their work, negatively affecting their career advancement. While remote work has some positive outcomes for workers, there are also some drawbacks that may especially affect women's career advancement. There are obstacles faced in both compensation and performance appraisal that directly inhibit women from successfully advancing in their respective fields. Companies should consider implementation of a metrics

dashboard, strong organizational culture, and a promotional review committee. These three managerial recommendations would all work to improve women's career advancement statistics within remote work environments. **Subject Category**

School of Business Categories: Human Resource Management

Faculty Sponsor Department School of Business Faculty Sponsor Avan Jassawalla Funding Sources None

10: Medical Histories of the 20th Century

9:00-10:15am, Wednesday, 26 April 2023, Welles 132 Session Chair Jovana Babović, History

104 • Changing Sex, Maintaining Race: Race, Biopower, and the Medicalization of Gender Variance in Apartheid South Africa 1948-1994.

William Allen

Abstract

The Nationalist Party of South Africa established and maintained the system of apartheid from 1948 to 1994, which attempted to classify and separate populations based on race and white supremacist ideology. While apartheid racial policies have long been studied by scholars, apartheid policies and ideology regarding gender and transgender issues have largely been ignored. This thesis attempts to fill this gap in scholarship regarding transgender issues during apartheid, by examining how apartheid transgender experience interacted with racial, sociomedical, and biopower ideologies. I argue that the Apartheid government attempted to recuperate the subversive possibilities of trans intersubjective experience, by providing a path for mostly White trans people to integrate into the normative gender and racial structures with a process of pathologization and medical "treatment" through Sex Reassignment Surgery, which would eliminate transgender liminality. My analysis draws from a wide array of sources including newspaper articles, photographs, apartheid-era medical journals, and my theoretical framework draws from Foucauldian theories of biopower and queer theory.

Subject Category Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Amanda Lewis-Nang'ea Funding Sources None

252 • "'To Comfort Always': The Fresh Air Treatment of Tuberculosis in the Adirondack Region"

Lexie Williams

Abstract

In this presentation, I will be speaking to the ways in which humans have built a deep relationship with natural landscapes and their romantic interpretation. By using the Adirondack region as a lens in which to understand this relationship, I will explore the curative effects of climate on both mental and physical wellbeing for individuals

experiencing Tuberculosis in the early 20th century. Additionally, analyzing the figures who brought this treatment plan to life and their commitment to the patient-caregiver relationship.

Subject Category

Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Kathleen Mapes Funding Sources None

6 • Taking the Pill: A Feminist Exploration of Birth Control through Modern American History

Anne Symon

Abstract

This paper examines the history of the birth control pill through a feminist lens and considers if it is anti-feminist to be an anti-birth control pill. The Pill became a symbol of autonomy and sexual liberation for many women in the 1960s and remains so today. The paper critiques the lack of nuanced discourse within mainstream feminism surrounding the pill even after Barbara Seaman exposed the adverse side effects to women and lawmakers in 1969. The paper also explores the research gap and provides commentary on the way women historically and currently have been treated by pharmaceutical companies and the healthcare system. While various contraceptive methods may seem to equate to more sexual liberation, I argue that it is merely an illusion of choice because of the harm hormonal contraception does to women's bodies.

Subject Category Interdisciplinary and Other Categories: Women and Gender Studies Faculty Sponsor Department History Faculty Sponsor Jovana Babovic Funding Sources

None

317 • Bippity-Boppity-Balkans: Scholars' Studies of Folk Healing and Witchcraft in the Balkans from the 1970s to 2010s

Elizabeth Wisniewski

Abstract

In this work, Elizabeth Wisniewski analyzes the historiography of folk healing and "witchcraft" in the Balkans by academics from both inside and outside the region. Her work involves analyzing the work of historians and anthropologists from the 1970's until 2017, covering multiple geographic regions and groups, such as Vlach Roma and traditional Macedonian folk healers. This piece argues that historians throughout modern-day academia, such as Joseph Obreski and T.P. Vukanovic, have continuously orientalized historical subjects within the region, perpetuating Western norms of civility and culture onto non-Western subjects. From the hyper-sexualization of men participating in fertility rituals to the belittling of traditional women folk healers, historians have failed to critically analyze folk healing in the Balkans due to their perpetuation of orientalism and, in some cases, nesting orientalism. Conjointly, the study of Balkan folk practices by Western scholars, and even Balkan scholars who practice nesting orientalism, has led to the perpetuation of the Balkan region as a primitive "other," resulting in a lack of critical analysis and study of folk practices in the region. In order to prevent Western gender norms from being imposed on Eastern European subjects, Wisniewski argues historians need to challenge the historical narrative expressed by prior scholarship and give the history of Balkan folk practices the critical analysis it deserves.

Subject Category

Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Jovana Babović Funding Sources None

166 • Exercise in the Medieval Islamic World

Jonathan Ackles

Abstract

Physical Exercise as a Medium of Scientific understanding and Political expression in the Medieval Islamic World (Flash Presentation)

The story of exercise in the Medieval Islamic world is complex and often overlooked. Exercise occupies a strange limbo in the grand narrative of conquest and scientific achievement that the Islamic World is known for. One might assume that either exercise was endemic in a pre-modern society or that it is a modern invention. Both of these ideas don't match the historical narrative. Physical exercise was a part of Islamic medicinal science and political expression. It was a part of therapeutic science through the works of Galen, Avicenna, and Nadir al Tusi. These authors created a widespread dialogue built around the idea of "physical science". The health of one's health and soul. It was a political expression through the health of sultans and emperors. From the Mughals to the Ottomans, the physical strength and vitality of the ruler were linked to the health of their realms. This presentation will describe how the science of physical exercise fits into a broader history of Muslim Science and how it had real-world consequences for Muslim rulers. This will be accomplished by describing historical examples of rulers using the ideas described by Galen and others in their routines. This presentation will also describe forms of exercise unique to the Muslim world. These include massive ring hunts and horse archery.

Subject Category

Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Mohammed Sadegh Ansari Funding Sources None

1P: Approaches to the Bible as Literature

9:00-10:15am, Wednesday, 26 April 2023, Welles 134 Session Chair Jacob Schlau

120 • "An End of All Flesh:" The Tragedy of Paradise in William Faulkner's Absalom, Absalom!

Dylan Walawender

Abstract

This essay discusses the Biblical dialogue and parallels William Faulkner draws upon in his novel *Absalom, Absalom!*. By comparing the similarities between Thomas Sutpen and God's characterization in their constructions of paradise, readers can get a sense of how the moral and social systems of both serve the creators of these designs first and foremost. This results in futile attempts at creating paradise, in which the moral regulations imposed by the fatherly ruler are restrictive, oppressive, and fueled primarily by a desire for a power as opposed to a transcendent notion of

moral law. In this interpretation, God is treated as a literary character whose restrictions on Eden-- to not eat from the tree of knowledge specifically-- are bound purely by morals only in the sense that He establishes the law to keep his own power in tact, and disobedience results in punishment for subverting power, rather than a spiritual notion of morality where Adam and Eve commit sin. In this sense, the Garden of Eden is a space where God projects his desire for power through moral law, where disobediences doom paradise not because of the faults of the inhabitants, but because of the creator's inhibitive regulations. Sutpen likewise attempts to create his own kind of Genesis through what he terms his "design," and yet, his vision of paradise is doomed, for Sutpen and his children's behavior and actions reflect the ways in which power and morality corrupt the very utopias they seek to construct.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Graham N. Drake Funding Sources None

169 • Believing for Beginners: An Analysis of Biblical Interpretation

Nicole Kemmett

Abstract

Jeanette Winterson's *Boating for Beginners* puts a spin on the classic Noah's Ark story and explores the power of authorship and literature in the Bible. By repainting the biblical figure Noah as a boat salesman and con man, Winterson demonstrates how individuals must contemplate authorial intent and historical context when reading any piece of literature, including the Bible. This paper unpacks how characters such as Gloria and Mrs. Munde interpret religious texts and how this relates to the way real people interpret the Bible. Through their character arcs, individuals learn the importance of considering authorial intent and historical context when reading the Bible.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Graham N. Drake Funding Sources None

1Q: History of Mathematics

9:00-10:15am, Wednesday, 26 April 2023, Welles 138 Session Chair Jeff Johannes, Mathematics

295 • A Brief History and Proof of Nash Equilibrium

Thomas Leip

Abstract

The concept of Nash equilibrium, introduced by John Nash in 1950, revolutionized the field of game theory by providing a powerful tool for analyzing strategic interactions between rational actors. This paper provides a historical overview of the development of Nash equilibrium and examines its theoretical foundations and practical applications. The paper also explores the various methods used to prove the existence and uniqueness of Nash equilibria, including fixed-point theorems and variational inequalities. Ultimately, this paper seeks to deepen our understanding of Nash Equilibrium and its role in game theory and social science.

Subject Category Science and Mathematics Categories: Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

296 • Talk'o Bell Curve

Jacob Haley

Abstract

The Bell Curve, Normal Distribution, Gaussian Distribution, this idea has gone by many names but is likely familiar to any STEM student. In this presentation, I will talk about its history, its evolution, and its impacts after its unlikely discovery as a solution to a gambling problem. After its initial discovery by Abraham De Moivre, it was further manipulated by mathematicians like Gauss and Laplace to become what it is today.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

298 • Laplace Transform: What and Why

Jade Shea

Abstract

I will discuss the history revolving around Laplace Transform, a type of integral transform that is used as a tool for solving differential equations. My presentation will cover why and how the Laplace Transform is used for solving differential equations, some background on Pierre-Simon Laplace, for whom the Laplace Transform is named, and a proof of the validity of the Laplace Transform. I will also discuss why the inversion of Laplace Transform is problematic.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

349 • Dirichlet's Theorem

Hannah Carnevale

Abstract

I will discuss the historical and mathematical background of Dirichlet's Theorem. The background of Johann Peter Gustav Lejeunne Dirichlet and Johann Carl Friedrich Gauss's relationship will be discussed as it is relevant to the development of

Dirichlet Theorem. I will go through the modernized proof in detail while providing insight of the historical characters and language Dirichlet used himself.

Subject Category Science and Mathematics Categories: Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

300 • Gertrude Blanch's human computers

Celia Henry

Abstract

Do you ever feel there is a lack of recognition of women mathematicians? In this talk, we will be diving into Gertrude Blanch's contribution to the world of mathematics. She has strong connections in business and mathematics. She is known for being a leader of the Mathematical Tables Project (computing organization) and pioneered algorithm designs for humans and mechanical computers. Coming to this talk with give you information about Blanch's designs and explanations of where she came up with the ideas and how they affected the future of mathematics.

Subject Category

Science and Mathematics Categories: Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

2A: Edgar Fellows Panel 6

10:30-11:45am, Wednesday, 26 April 2023, Bailey 101 Session Chair Aaron Steinhauer, Physics & Astronomy

233 • SUNY Geneseo Student Sexual Health Research

Olivia Khangi

Abstract

College sexual health services, and especially educational programs, are lacking nationwide. Students do not have the resources that they need or want, and college students are a high-risk group for sexual health issues. The purpose of this research project was to identify the strengths and weaknesses of sexual health programming at SUNY Geneseo, as well as how we can improve sexual health services for diverse campus members. This research was conducted using student focus groups to collect qualitative data. Inclusion criteria include 18+ self-identified women who attend SUNY Geneseo. My preliminary research indicates a need for better student education on sexual health, as well as increased student awareness of sexual health resources on the SUNY Geneseo Campus. Themes of our findings include lack of student sexual health education, lack of efficient outreach, lack of appointment availability, as well as feeling dismissed by providers. We also gathered student suggestions for improvement, which will be used in the associated Student Ambassadorship Project to create a deliverable.

Subject Category

Social Science Categories: Sociology

Faculty Sponsor Department Sociology Faculty Sponsor Amy Braksmajer Funding Sources None

112 • Supporting Student Athlete Mental Health: Suggestions for Fostering Mental Toughness at Geneseo

Sarah Dunnigan

Abstract

Mental health struggles generally are stigmatized, and stigma also specifically affects high achieving individuals such as scholar-athletes. The importance of student athlete mental health has gained increased attention following a number of tragic student athlete suicides in 2022. Student athletes are a population who face a unique subset of challenges and are immersed in a specific culture within the athletic environment. One way that athletes can cope with this challenging environment and avoid maladaptive mental health outcomes is by developing mental toughness. Mental toughness is a multidimensional construct that reflects the abilities of athletes to overcome challenges, be confident in themselves, and be able to cope with the emotions and stress of difficult situations. Additionally, there are clear gender differences in athletes' self-reports of mental toughness, with men consistently scoring higher than women. This project explores what mental toughness is, how it can be misinterpreted, potential sources of gender-related differences in mental toughness, and how it can relate to student athlete mental health overall. After conducting a literature review on this topic, interviews with local coaches and athletes were conducted to develop suggestions for how the Geneseo athletic environment can support student athlete mental health.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department Psychology Faculty Sponsor Jennifer Katz Funding Sources None

168 • Barriers That Hinder the Successful Completion of Physical Therapy

Jackie Borland

Abstract

Physical therapy (PT) is uniquely set in healthcare as it can function as both a prevention and rehabilitation service. Because physical therapy covers a wide span of problems related to the musculoskeletal system, it is a service that a majority of Americans will eventually need. Every year, more than 50% of people over the age of 18 develop a musculoskeletal problem that lasts more than three months, meaning that at any point in time nearly 100 million Americans could improve their health and prevent future injury by receiving physical therapy. Unfortunately, the barriers to accessing and completing a PT regiment are high, especially for people with a lack of resources. Studies suggest that only 10% of Americans who could benefit from PT receive it. Unlike many other healthcare services, PT requires multiple visits over the span of many weeks. Only 80% of PT patients return for treatment after their first three visits and a mere 30% complete the entire regimen necessary for complete healing. The elderly, those living below the poverty line, those living in rural areas, and ethnic and racial minorities are overrepresented in the group of those who are unable to receive the full treatment necessary to restore their health. This study explores the many barriers that hinder the successful completion of PT and aims to highlight the need for a widespread change in the field where these barriers are recognized and responded to in a way that allows for universal accessibility for all Americans. **Subject Category** Social Science Categories: Anthropology Faculty Sponsor Department Anthropology and Sociomedical Sciences Faculty Sponsor Melanie Medeiros Funding Sources None

24 • The Production Effect and Political Rhetoric

Ryan Merkel

Abstract

Does saying a political slogan make it more believable? Research has shown that statements read aloud and are remembered better than statements that are read silently. This phenomenon is known as the production effect and research has shown it is a powerful mnemonic technique. Another phenomenon, called the illusion of truth, finds that information that is easier to retrieve from memory is viewed as more trustworthy. Together, these phenomena suggest that reading statements aloud might make them seem more believable or profound. To test this idea, we had participants read political statements and again rated their profoundness. Participants later performed a recognition test on the statements and again rated their profoundness. Results indicated that aloud statements were more profound initially but, surprisingly, not during the later memory test. Further analyses showed that the ideology of statements was interacting with these effects. Both liberal and conservative statements that were read aloud were more profound initially and silently read statements became more profound over time. However, at the later memory test it was conservative statements that were read aloud that had significantly declined in profoundness. This unexpected finding is the opposite of what the illusion of truth phenomenon would predict. It is important to remember that we recruited college students, which are typically left-leaning ideologically, and so we interpret these results as indicating that while ease of retrieval can boost the believability of ideologically-consistent statements, for statements that conflict with one's ideologies, it may have the opposite effect.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Jason Ozubko Funding Sources None

2B: Edgar Fellows Panel 5

10:30-11:45am, Wednesday, 26 April 2023, Bailey 102 Session Chair Ganie DeHart, Psychology

202 • The Value of Ethnographic Fiction

Sarah Roberts

Abstract

This presentation addresses my experiences with a form of experimental writing in anthropology. For my capstone, I wrote a speculative - or fictional - ethnography, writing from the point of view of an inexperienced anthropologist on a trip to an until recently hidden cultural group. Ethnography, the style of writing most commonly used by anthropologists, looks at a community of people from a story perspective and attempts to address an event or challenge, taking into account the background of the people facing it. An ethnographer understands that reactions of people to events cannot be fully separated from the environment around them, their history, and their views on the

world around them as a whole. An understanding of anthropological ideals and the anthropology Code of Ethics are vital in ensuring that no harm is done to the subject people. It is easier for an ethnographer to recognize elements like beliefs, government, history and societal structures and their relationship to each other in real world peoples if they have had practice with fictional ones. The value of speculative ethnography, therefore, as a learning tool to be utilized in the teaching of anthropology is largely untapped in many cases and can, in particular, aid the learning of artistically minded individuals. It also allows for a - comparatively - risk free way to practice reducing the risk of harm to the reputation of real world groups.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department Anthropology Faculty Sponsor Jennifer Guzmán Funding Sources None

225 • Exploration of Knot Mosaics

Nickolas Laine

Abstract

Knot mosaics are a recently developed field of knot theory in which knots are constructed out of a predetermined set of tiles arranged on a square grid. Conventionally, the tiles used would depict strands connected from one edge of the tile to another. Dr. Aaron Heap, a professor at SUNY Geneseo, noticed that if these tiles were replaced with a nearly identical set that had the strands connected from corner to corner, certain knots could be depicted on far smaller mosaics than previously possible. Dr. Heap tasked several undergraduate students with researching these tiles to see what differences would emerge compared to the traditional system, including general space efficiency. Undergraduate Nickolas Laine discovered through over a year of research that while this new set of tiles does not always guarantee a knot can fit on a smaller mosaic, this conjecture still holds for the vast majority of smaller knots. This presentation will discuss the process of establishing and examining new concepts, developing new theorems, and the underappreciated creative joy found within mathematical research. No prior knowledge of mathematics will be required to understand and enjoy the material.

Subject Category

Science and Mathematics Categories: Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Aaron Heap Funding Sources None

307 • The Mozart Effect

Brian Parrett

Abstract

This presentation covers the topics of the Mozart Effect, a brief history of Mozart's life and music as well as his contemporary use as a symbol of genius.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music

Faculty Sponsor

Monica Hershberger Funding Sources None

255 • What Comes Next? A Speculative Future Narrative

Hannah Lustyik

Abstract

For my piece, I researched nuclear semiotics, an interdisciplinary study from the 1990s involving how human beings would leave their legacy behind if the world were to suddenly. The symbols discussed to leave behind were strange and selective—codes hidden in flowers' DNA sequences, councils structured off the Catholic Church to dictate all human information, cats that glow when placed near radiation—all equally baffling in how to convey a world left behind to a world reconstructed. Alongside research of nuclear semiotics, I looked into the Internet as a landscape; as technology advances, online spaces have adopted a new physicality, acting as separate realities for people to cope with troubling times. I imagined a speculative future based on these concepts, with tropes from fantasy, sci-fi, and noir. Through my story, I hope to explore outside of the fear and tragedy the worst possible outcome could result in—I want to explore the hope we can create when we connect with one another.

Subject Category

Arts and Humanities Categories: Visual Arts

Faculty Sponsor Department English Faculty Sponsor Ken Cooper Funding Sources None

2C: Social Science Session

10:30-11:45am, Wednesday, 26 April 2023, Bailey 103 Session Chair Meredith Harrigan, Communication

230 • Journey of International Asian Faculty and White American Student: Transitioning Dialogue beyond the Classroom

Emma Seppeler, Emi Kanemoto

Abstract

Given that social justice related topics are often avoided in the U.S. classroom, this study investigates the dialogue in the classroom and beyond (with)in a predominantly White institution. By using duoethnography, we as an international Asian faculty and a White American undergraduate student address the complexities of dialogue from intercultural communication lenses both inside and outside the classroom. The intersections in our narratives allowed us to have an in-depth investigation of nuanced understanding of identities by featuring: unpleasant feelings that emerge from classroom dialogue, decentering selves from dialogue space, and the challenges of instructor-student dynamics around dialogue process. This research recognizes the need to continue to expand the academic conversation of dialogue space as more than a "safe" space. We conclude with theoretical and practical implications, including faculty-student growth partnership, to foster more reflective dialogue and transformative space beyond the classroom

Subject Category

Social Science Categories: Communication

Faculty Sponsor Department

Communication

Faculty Sponsor

Meredith Harrigan

Funding Sources

Jason and Diana Kyrwood '95 Student/Faculty Research Endowed Summer Fellowship, TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

84 • The Role of Personality and Counterfactual Thinking in Grief Symptom Severity Among Women Who Have Experienced a Miscarriage

Catherine Elliott

Abstract

Miscarriage is a tragically common occurrence which can be incredibly difficult and isolating. In addition, despite the fact that most miscarriages are caused by factors entirely outside of the individual's control, many women feel guilt and wonder if they could have saved the pregnancy if only they had done something differently. Thinking about what could have been is known as counterfactual thinking, which has been associated with poor grieving outcomes. Personality variables, such as perfectionism and neuroticism have been shown to increase a person's propensity to engage in counterfactual thought. This study examined the relationships between personality variables (perfectionism and neuroticism), counterfactual thought, and grief symptoms in women who have experienced miscarriage. We also looked at how benevolent sexism impacted women's propensity to engage in counterfactual thought. In addition, we examine help seeking attitudes and behaviors and their association with grief symptom severity. Both the results and the implications of these results for supporting women who have experienced miscarriage will be discussed.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Monica Schneider Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

247 • A Neurosociological Model for Alzheimer's Disease

Brooke Witherow

Abstract

In understanding any mental disorder, it is imperative to consider how the popular media and scholarly literature define the current medical model. More specifically, for Alzheimer's disease, the description, societal viewpoint, etiology, diagnosis, and treatment protocol are all described to the general public and medical field. There are certain limitations to this model, especially in regards to diagnosis and treatment, and in the social aspects missed in etiology. As a result, a neurosociological model is proposed that addresses these limitations and encourages a broadened perspective of mental disorders. The model proposed serves to improve on these limitations, offer recommendations, and overall promote the intersectionality of medicine, psychology, neuroscience, and sociology.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Anne Eisenberg Funding Sources None

269 • Service as the Bridge between Communities (Flash Presentation)

Steve Anderson, Joseph Morse, James Campanelli, Jared Trout, Yarold Bautista Martinez

Abstract

As a social-service organization, we as MAC are compelled and mandated to attend and engage with a given amount of service events every semester; having been members of MAC for varied numbers of years, we have interacted with a wide range of people and organizations all within 1-hour from Geneseo and have expanded our conception of what it means to be active members engaging in the local communities. The service projects that we have been involved in helped to not only ameliorate gaps in what the organizations and people we were involved with can accomplish, but also grew as individuals and satisfied our moral and spiritual need as humans to do, act, and connect. When engaging with programs and organizations such as Lagom Landing, the Genesee Valley Conservancy, and Recovery All Ways (RAW), we have experienced varying aspects of what it means to be of service and have interacted with different ways to be and perceive our local community. Locations like Lagom Landing and Mills Creek allowed us to interact with nature in ways that we often don't get a chance to or in ways that we previously didn't know how to. Whether it is making maple syrup from sap, building trails, or providing bagged lunches and medical supplies to those in need; Service has shaped the way we interact not only with our local communities, but with the world around us, and it will continue to do so for as long we, as human beings, can stand.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department Sociology **Faculty Sponsor** Yuichi Tamura **Funding Sources** None

2D: Sociology of Wonder Part 2

10:30-11:45am, Wednesday, 26 April 2023, Bailey 104 Session Chair Steve Derné, Sociology

13 • Wonder at Overcoming Anxiety: Feelings of Self, Negative Emotions and Encounters with the Ugly in Wonder Experiences

Kate O'Neil

Abstract

Fuller defines wonder experiences from a positive perspective, with an added emphasis to the beauty of life, the unexpectedness of life, and the inexplicable nature of life itself. He distinguishes wonder from awe when he states: "Wonder differs from awe, however, in that it isn't accompanied by fear or submission. Wonder diminishes the sense of self, yet does so without inducing interpersonal submissiveness" (Fuller 70). However, my experiences addressing anxiety experiences suggested to me how movement away from negative experiences can allow one to see the good from those 'bad ' experiences, which in turn emits wonder. In order to explore this insight, I used sociological introspection. I contemplated the emotions and feelings I had when journaling about my negative anxiety experiences, and how those may be a source of wonder today. I journaled consistently for two weeks, and then continued to check in with my progress once every couple of weeks after the initial period. This was such a transformative process for me that I can hear the excitement in the words I shared. I experience wonder through the knowledge that I can make it out of some of the worst days I face, and because I know I have completely accepted myself for all I am.

Subject Category

Social Science Categories: Sociology **Faculty Sponsor Department** Sociology **Faculty Sponsor** Steve Derné

Funding Sources

None

14 • Classroom, Concerts, and Connections: The Complexity of Interactional Wonder

Abigail Szarowicz

Abstract

Derné et. al acknowledge how individuals experience interactions and what makes the experiences themselves special. Reframing Derné et. al's findings include how interactions affect wonder and the complexity of interactions leading to wonder. It is difficult to truly appreciate a given moment with others because it is impossible to be completely aware of the thoughts, emotions, and experiences of the other individuals. One's mind wanders during conversations, worries about a future inevitable interaction, or carries a deep stain from a previous conversation. Oppositional to this, it is important to recognize that a person also carries their own joy. Choosing to share one's own joy with others is a stunning way to connect. The connection between interactions and wonder is not as simple as giving meaning to wonder experiences through interaction, but rather the creation of connection and from not knowing what others' experiences are. Connecting with others over shared experiences, knowledge, or a particular object formulates a sense of wonder.

Subject Category

Social Science Categories: Sociology

Faculty Sponsor Department Sociology Faculty Sponsor Steve Derné Funding Sources None

27 • "Discovery of the Authentic Self as a Source of Enchanted Love: Enchantment through Moving Beyond Ideals of Gender Boundary Construction"

Bryanna Hargrove

Abstract

Illouz (2012) explored how the process of rationalization in Western culture has led to skepticism of the rigid boundaries of gender construction through which love is understood and negotiated. Consequently, the social scripts which form the basis of enchanted love in Western Culture–eroticism as waste, semiotic certainty, and ambiguity of gender roles–have become harder to subscribe to, causing people to be less able to experience love's enchantment. This paper will argue that Illouz is right that rationalization has led to skepticism of the rigid gender boundary construction that had previously been the basis of enchanted love, but Illouz misses the importance of discovering one's authentic self as a source of enchantment. The researcher used Sociological Introspection as a methodology to explore the role of the authentic self as a source of enchantment. More specifically, the researcher used free writing about their own experiences with gender boundary construction, religion, love, and enchantment, while also looking for enchantment through self-discovery. The findings suggest that enchantment was found through discovering the authentic self as a product of moving away from cultural scripts related to traditional gender roles and expectations.

Subject Category

Social Science Categories: Sociology

Faculty Sponsor Department Sociology Faculty Sponsor Steve Derné Funding Sources None

2F: Anthropology & Sociomedical Sciences Panel

10:30-11:45am, Wednesday, 26 April 2023, Bailey 201 Session Chair Jennifer Guzmán, Anthropology and Sociomedical Sciences

8 • Gender Dimorphism in a Captive Lowland Gorilla Family

Erika Vincent

Abstract

This directed study takes a look into the degree of gendered behaviour among captive western lowland gorillas (*Gorilla gorilla gorilla gorilla*) in comparison to the normative behaviour of wild gorillas. Data presented are based on two months of observation of the gorilla family at the Buffalo Zoo and compared to relevant literature on sexual dimorphism in gorillas. The observed family consists of a silverback male, three adult females (one of which being the offspring of the silverback), and one sub-adult male. I expect to see similar gendered behaviour in captivity as what is standard in the wild, such as a more attentive silverback (Meder 1992) and females spending more time eating (Masi 2009). It is important to look at the differences between captive and wild behaviours in order to continue to use best practices to avoid stress, boredom, and aggression. Looking at gendered behaviour in gorillas specifically may aid in the search for answers as to what can be done with excess males born into captivity who cannot start a family of their own.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Anthropology Faculty Sponsor Kristine Krumrine Funding Sources None

89 • Social and Economic Networks of the Town of Bristol, NY: 1790 - 1840, Research Connected to Burt-Wilder Site, Bristol NY

Natalie Laiosa, Fiona Shackleton

Abstract

The Town of Bristol, NY was officially established at the first Town Meeting held on April 4, 1797. However, the first settlers to arrive in the area came as early as 1789. Receiving land grants from the 1788 Phelps and Gorham Purchase the founding families, Gooding, Codding, and Burt-Wilder, came from Dighton, Bristol County, Massachusetts. Facilitating the network of labor, production, and community service these families became the foundation for the Bristol area through establishing the first businesses and farms. Thus, Bristol NY became an agricultural community connected through family loyalty, religious devotion, and intrafamilial reciprocity. Dictating social and economic relationships this agricultural focus stressed cooperation over competition therefore guaranteeing the well-being of the Bristol community. This paper will attempt to illustrate the social and economic relations within the Town of Bristol during the time period of 1790-1840 using primary and secondary sources such as Dr Vincent's Journal, the genealogy of the founding families, the Town Minute Records from 1797-1837 and 1838-1923, the Congregational Church Subscription Records as well as photographs of artifacts from the Burt-Wilder excavation site.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Anthropology Faculty Sponsor Paul Pacheco Funding Sources

None

4 • *The Silent, Spoken Stress*: How a Lack of Dialogue Perpetuates Vocal Issues and Lowered Quality of Life in Educators

Peighton Cervoni

Abstract

This presentation examines the heavy burden of vocal issues and stress amongst educators in the Southern Tier of New York. Teachers are deemed one of the most at-risk groups of people for contracting vocal disorders according to the International Labor Organization (Araújo et al. 2008). Female teachers are disproportionately affected by vocal issues as caused by both biological and sociocultural factors. This disproportion then translates into their teaching, which then in turn affects their students' learning and their job satisfaction. By incorporating evidence from articles, personal correspondence, and formal interviews with educators of various concentrations, this study demonstrates that teachers suffer from both a pattern of self-blame and an overall lowered quality of life revolving around their vocal disorders. It argues for the incorporation of education and awareness on vocal hygiene within educator's preparatory training and through their teaching career. These are particularly evident in the lack of dialogue and knowledge about vocal discomfort within college preparation and career, which creates a lack of awareness in understanding what the symptoms of occupational dysphonia are. These together enforce feelings of self-doubt and blame in teaching capability and lowers job satisfaction, culminating into a lowered quality of life.

Subject Category

Interdisciplinary and Other Categories: Sociomedical Sciences

Faculty Sponsor Department Anthropology Faculty Sponsor Jesse Bia Funding Sources None

337 • A Brief Presentation on Language and Gender in the Autistic Community

Aurora Merwin

Abstract

By taking a look at just one small corner of the online autistic and neurodivergent community, we can gain insight into the extensive discussions and debates about how important gender is regarding presentation, diagnosis, and stereotype. Paige Layle, a young autistic women who creates content surrounding autism, discusses this role of gender as well as the impact that language has on the people within the community. Topics like functioning labels, person versus identity first language, masking, and Bucholtz's performativity will be focused on.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Anthropology Faculty Sponsor Jennifer Guzmán

Funding Sources

None

348 • Research on Language and Gender

Brianna Cohen Abstract My presentation looks at 'Yandere ASMR' on Youtube. ASMR is an online community of practice that engages with videos and creators. ASMR stands for autonomous sensory meridian response and is a tingling sensation that can be felt in the spine to certain triggers. 'Yandere ASMR' is a subcategory of the whole community, focusing on point-of-view narratives that revolve around a Yandere, typically male, character. 'Yandere' is a Japanese term for a character, who is typically female, that is obsessive/possessive of a significant other or crush. My research exams the goals and values of the creators of these videos, and how they are actually not really ASMR at all.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Anthropology Faculty Sponsor Jennifer Guzmán Funding Sources None

2G: Philosophy of the Arts: Answers to Unresolved Questions (Flash Presentations)

10:30-11:45am, Wednesday, 26 April 2023, Bailey 202 Session Chair Jonathon Auyer, Philosophy

108 • Answers to Unresolved Questions

Patricia Figueroa Abstract We've been working on Unsolved Questions at the end of our Philosophy textbook Subject Category Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

191 • Philosophy of Language in Art

Jacob Zaengle

Abstract

Often seen presented as disparate fields in philosophy, this presentation will work to see how they interact, overlap, and where they may come to grow closer still.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

194 • Unresolved Questions

Julia Tufillaro Abstract My presentation will be my answer to one of the unresolved questions explored in Philosophy of the Arts. Subject Category Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

235 • What is Art? And Other Unresolved Questions.

Mareasa Giudici

Abstract

There is no one true definition of art. There are so many branches of artwork that it is difficult to narrow down the specific attributes that would require each work of art to be classified as art, this does not even begin to include other branches of creative activity such as music, literature, and dance which are all considered to be aspects of art. Working with different genres and mediums like this can also complicate the meaning of art. We will always be changing the definition of art and what is considered to be art. Art is always evolving which means that the definition will also always be evolving. Through the asking of unresolved questions we are able to slowly dissect these unanswerable questions and start to understand what qualifications are used to make artwork.

Subject Category

Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy

Faculty Sponsor Jonathan Auyer Funding Sources

None

240 • Unresolved Questions

Moira Sullivan Abstract My presentation will be my answer to one of the unresolved questions investigated in Philosophy of the Arts. Subject Category Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy Faculty Sponsor Johnathan Auyer Funding Sources

None

258 • Unresolved Question

Emily Lupercio
Abstract
I will be presenting my answer to one of the unresolved questions investigated in the Philosophy of the Arts.
Subject Category
Arts and Humanities Categories: Philosophy
Faculty Sponsor Department
Philosophy
Faculty Sponsor
Jonathan Auyer
Funding Sources
None

264 • Unresolved Questions in Philosophy of Art

Hunter Scholl

Abstract

My presentation will be my answer to one of the unresolved questions investigated in Philosophy of the Arts, specifically the aspects of attention and participation in art.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

342 • Culturally Sensitive Definitions of Art

Elliot Pecora

Abstract

During this talk, I will be arguing in favor of culturally sensitive definitions of art. When considering language differences, the word "art" may have different lexical and stipulative definitions, or even no direct translation altogether. There is also the possibility of a language forming multiple words for art, with no all-encompassing term for our "art," which would reflect a culture very different from the contemporary United States. Furthermore, cultural connotations may cause some cultures to separate art, craft, and technology differently than others, or refuse to separate certain practices. It is vital to consider the fact that art is not created in a vacuum. While we can speak about this in a historical sense, we can also extend this idea culturally. Especially considering the technology of the 21st century, cultural exchange has shifted artistic ideas and ideals. Now that we can access so many forms of art from a vast array of cultures nearly instantly, the artworld has more chances than ever to grow as well as equalize.

Subject Category

Arts and Humanities Categories: Philosophy Faculty Sponsor Department

Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

293 • PHIL 225 Philosophy of the Arts: Answers to Unresolved Questions

Jacob Schlau

Abstract

In response to our class discussion on the unresolved questions, I'd like to comment on the intentionalism of multiple authors and considering how media is transferred and translated when artists work together on one product.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department Philosophy Faculty Sponsor Jonathan Auyer Funding Sources None

2H: Women's & Gender Studies Capstone Projects Session 3

10:30-11:45am, Wednesday, 26 April 2023, Bailey 203 Session Chair Amanda Roth, Philosophy and Women's & Gender Studies

153 • Justice Beyond Prisons?

Cliona Morrow

Abstract

Living in the United States, we have long accepted the traditional, retributivist, carceral model of justice as a fact of life; we look to it both to achieve 'justice' and to mitigate a myriad of social problems. Although incarceration and the prison system are considered the golden standard, I believe we should rethink the ways our society punishes those who have committed wrongs. While there are occasional examples of more humane prisons, the prison system as a whole is ineffective, inhumane, and antiquated, and it does not serve either the interests of the punishers or the punished. Instead, to advance as a society, we must consider alternative models of justice in place of incarceration, specifically restorative and transformative justice. However, while I believe that alternative and restorative justice are the best means of achieving justice, I also recognize that the enactment of these models in our country is highly implausible, because our society prioritizes the hegemonic carceral system over more humane forms of justice. As a whole, the United States sees incarceration as more valid, legitimate, and effective when contrasted with alternative justice systems, which are seen as less tough and less effective.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women & Gender Studies

Faculty Sponsor Maria Lima Funding Sources

None

290 • Congressional Rhetoric and Repercussions

Trevor Farrell

Abstract

In the past, the two staple political parties in American politics have each had the responsibility of determining what members of their own party serve on congressional committees. However, this trend was reversed when the

Democratic speaker of the house voted to remove Representatives Marjorie Taylor Greene and Paul Gosar from their respective committees. Recently, Representative Ilhan Omar's valuable perspective on the Foreign Affairs committee was silenced by the GOP. These three representatives were all removed from their committees for past statements and actions that undermined their ability to delegate objectively. However, the rhetoric for which these representatives were punished varies drastically. Why is it that Republicans are willing to punish Democrats/ideological progressives for antisemitic, racist, homophobic, and xenophobic remarks, but not members of their own party? Why are leftist progressives disqualified for valid, informed worldviews? How does the treatment of Congresswomen of Color intersect with the problem of American democratic legitimacy? Through exploring the rhetoric from both conservative and progressive representatives and repercussions for both sides of the spectrum in cases of controversy, my project will document the experiences of congresswomen of color for the purpose of exploring how their identity seemingly affects their ability to contribute effectively to the American governing body.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies Faculty Sponsor Department Women's and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

294 • "The Trouble With Normal"

Colleen Spencer

Abstract

The nuclear family has been seen as the standard in our society. Although this is commonly just accepted, we should think about other possibilities for structuring families and for parenting. Parents in polyamorous relationships have shown that there is not one single way to live, love others, or to raise children. They continue to reconstruct what being a family can mean or look like. Thinking about alternative family structures also brings up questions about parenting responsibilities being shared by people other than biological parents. In our society, the structure of the nuclear family also reinforces certain social issues such as sexism and classism, so there are motives to seriously question if this structure is serving or harming our society. Although it may be difficult to imagine anything different, we can look to other cultures where families and parenting look different and see that this isn't the only way for us to think about families.

Subject Category Interdisciplinary and Other Categories: Women and Gender Studies Faculty Sponsor Department Women's and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

309 • Criminalizing Survivors

Hannah Mathieson

Abstract

This project aims to examine the contemporary criminalization of survivors of intimate partner violence, specifically focusing on Black women. This topic is extremely important as both intimate partner violence and the over-representation of Black women in the criminal justice system are major structural issues that negatively impact Black women. However, for such a prevalent issue there is very little research specifically focusing on the unique experiences of Black women. I will discuss risk factors leading to violence, societal factors contributing to violence, and factors

deterring Black women from reporting violence. While doing so, it's important to understand the structural and societal barriers that keep Black women from securing justice. I will then discuss current policy and establish ways it can be changed to benefit Black women. We must understand the additional barriers forced upon Black women by existing structural inequality. This can include factors such as immigration status or socio-economic status. Other relevant topics include self-defense and coercion, policing and arrest policies, and programming for incarcerated Black women. The main outcomes of this project include a deeper understanding of policy and how it perpetuates the angry Black woman stereotype to continue the cycle of injustice. Any programming should be trauma informed and made specifically for criminalized Black women so that the process can be both gender and culture conscious. It is essential that this and other policy changes occur so that criminalized Black survivors have access to resources and support without having their experience undermined.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

2I: Edgar Fellows Panel 4

10:30-11:45am, Wednesday, 26 April 2023, Bailey 204 Session Chair Lisa Meyer, Sociology and Edgar Fellows

211 • Restorative Justice in Schools

Hailey Cullen

Abstract

This presentation displays the research completed by Hailey Cullen under the guidance of Dr. Michael Rozalski on restorative justice practices in schools for her Edgar Fellows Honors Capstone Project. The presentation first delineates what restorative justice is: its origins and the core components of its philosophy. Then, the presentation delves into how schools began to use restorative justice practices as an alternative or complement to traditional, punitive policies that have often been proven to be both ineffective and disproportionately harmful to certain groups of students. The presentation then highlights the research done on the effectiveness of implementing restorative justice practices in schools, noting the benefits and potential challenges to its implementation. Finally, the presentation illustrates how teachers can implement restorative justice practices in their classrooms at an individual level by providing strategies and practical tools they can use. While this presentation is geared towards those involved in education, anyone can find benefit in using restorative justice practices to restore relationships and promote social equity in any place.

Subject Category

School of Education Categories: Childhood Education/Special Education

Faculty Sponsor Department School of Education Faculty Sponsor Michael Rozalski Funding Sources None

50 • Defending and Cultivating Diverse Literature for English Language Arts Classrooms

Samantha Miller Abstract This project explores the concept of diverse literature as it is applied to the English Language Arts (ELA) secondary classroom. I begin with a definition of the word diverse, including what it encompasses in terms of representation of students and backgrounds, and the increasingly visible need to include these identities within the classroom curriculum. I lead into reasoning for including such texts in the classroom, focusing primarily on the benefits for students, including student motivation, engagement, and social-emotional learning. Lastly, this research is supported by current recommendations and resources for potential usable texts, ways to evaluate these texts for their accuracy, and suggestions for including them in the curriculum. This is done in guidance with New York State and the National Council of Teachers of English recommendations, and is especially important ongoing political debate over book and diversity censorship. The goal of this project is to act as a beginning step towards cultivating the resources, background information, and mindset necessary to support students of backgrounds in accessing the ELA classroom in equitable ways.

Subject Category

School of Education Categories: Adolescence Education: English Faculty Sponsor Department School of Education Faculty Sponsor Kelly Keegan Funding Sources None

346 • Regiospecific Green Syntheses for Pyridoquinoxalinones S

Nicolas Elia

Abstract

With the climate crisis becoming increasingly severe, there is an urgent need to develop and implement processes for a more sustainable future. Since solvents comprise around 85% of the waste involved in chemical syntheses, a transition to green solvents that are biodegradable, non-toxic, non-ozone depleting, and noncarcinogenic – like ethyl lactate – is essential to making chemical syntheses in the pharmaceutical industry more environmentally friendly. Green syntheses for pyridoquinoxalinones were investigated for their extensive use in therapeutics for cognitive, neurological, and psychiatric disorders, as well as for prospective cancer treatments. Reaction conditions such as polarity of the ethyl lactate solvent, concentration of substrate, presence of a catalyst, temperature, and pH were explored to maximize the regiospecific yield of 2-Methylpyrido[2,3-b]pyrazin-3(4H)-one or 2-Methylpyrido[3,4-b]pyrazin-3(4H)-one when reacting ethyl pyruvate with 2,3-Diaminopyridine or 3,4-Diaminopyridine, respectively. Yields for 2-Methylpyrido[2,3-b]pyrazin-3(4H)-one using a 10:1 ethyl lactate to water solution. A maximum yield of 71% was achieved for 2-Methylpyrido[3,4-b]pyrazin-3(4H)-one using a less polar, 43:1 ethyl lactate to water solution with a lactate catalyst. Both yields are competitive with their traditional syntheses in methanol or chloroform, respectively, and surpass their traditional syntheses in purity and sustainability.

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)

333 • DEIB in Education

Kailey Sewell Abstract Diversity, equity, inclusion and belongingness are key topics of civic learning. These efforts started to become more prevalent after the rise of the Black Lives Matter movement in 2020. As New York State, the United States, and the world start to realize the need for creating spaces for underrepresented groups, we must seek to become active learners and listeners. Especially in the realm of education, it is imperative that we create environments that are open and accepting of children and families from all backgrounds. College campuses have already started adopting mission statements, initiatives and discussion tactics about the importance of these concepts and putting in the work to ensure that they are implemented to bring about institutional transformation and reform. To do so, we need to educate ourselves on the ideas of DEIB. There is pushback against teaching these ideals. Legislators are aiming to eradicate teaching of crucial topics and historical events that shape the society we live in. To combat this ignorance, I propose more education. Preparing teachers to engage in conversations surrounding these topics in education and become fiercer advocates for their students will inevitably help pre-service teachers feel more confident to face these things in the field. By infusing more courses or course material surrounding DEIB into our pre-service teacher education program, we are setting our students up for success in the current state of education. These topics help incorporate the lived experiences of students into the classroom and transition toward educational equity.

Subject Category

Interdisciplinary and Other Categories: Edgar Fellows

Faculty Sponsor Department Education Faculty Sponsor Crystal Simmons Funding Sources None

2J: Research Presentations in Geology Part 2

10:30-11:45am, Wednesday, 26 April 2023, Welles 115 Session Chair Jacalyn Malinowski, Geological Sciences

192 • Clastic/Volcanoclastic Remnants in Western Elysium Planitia, Mars: Investigation of Stratigraphy beneath the InSight Lander

Amy Laubenstein

Abstract

The Interior Exploration using Seismic Investigations, Geodesy, and Heat Transport (InSight) spacecraft landed in the Western Elysium Planitia, Mars in 2018. InSight rests on lava plains within a degraded crater. The lander is equipped with a seismic instrument that analyzes the stratigraphy beneath the Martian surface. A unique low-velocity unit ~30 m was discovered beneath the lander, displaying weakly consolidated material that could represent a clastic or volcanoclastic origin. Importantly, it may represent a relatively young and unique pulse of sedimentary or pyroclastic activity on the northern plains of Mars. However, there is no surficial evidence of this material in the immediate vicinity of InSight. Through geologic mapping using MRO CTX images, MOLA, and HRSC topography data, we discovered a highly erodible geologic unit in Western Elysium Planitia that is consistent with a clastic or volcanoclastic origin, which occurs several hundred kilometers south of the lander, near the planetary dichotomy. We describe this unit as the 'fluted, layered terrain'. It underlies a smooth, densely cratered terrain that has similar geomorphic and albedo characteristics to the lava plains beneath InSight. An analysis of the cumulative frequency of impact craters on each unit demonstrated that while the 'fluted, layered terrain' is older than the smooth terrain, it does not retain craters, confirming that it is easily eroded under Martian conditions. This research provides stratigraphic and geologic context for the seismic stratigraphy recorded below the InSight lander. The low-velocity unit beneath InSight may be a thin remnant of this highly erodible material.

Subject Category

Science and Mathematics Categories: Geological Sciences Faculty Sponsor Department Geological Sciences **Faculty Sponsor** Nicholas Warner **Funding Sources** TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Other External Grant

286 • Evaluating ASTER Satellite Imagery and Spectral Angle Mapper for Depth to Bedrock Mapping

Kaleb Hotaling

Abstract

This study explores the distribution of surface bedrock exposures within Ulster and Orange counties in New York State as a part of an ongoing New York State Geological Survey project to generate county-wide depth to bedrock maps. By analyzing data from multiple bands of the electromagnetic spectrum, including visible and near-infrared (VIS-NIR), we distinguished between different types of vegetation, identified areas of bare ground, and detected changes in land use over time. Multispectral data from the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) was analyzed using the software ENVI. Regions of Interest (ROIs) were classified based on land use cover, including vegetation, bedrock, agriculture, water, and pavement. The spectral characteristics of each ROI were averaged, and the Spectral Angle Mapper (SAM) function was used to find spectral matches throughout the landscape. SAM accurately identifies bedrock exposures in upland/highland localities but misidentified pavement as bedrock in lowland urban environments. Matches of exposed bedrock in rural localities will be used to inform the NY State survey's bedrock depth map.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department Geological Sciences Faculty Sponsor Nicholas Warner Funding Sources None

215 • Sedimentary analysis of Coconut Walk unclipped pottery, Belize

Cadence Mannino, Emilia Rio

Abstract

Because pottery bodies are often a mixture of natural materials, they can be studied and described in a manner similar to sedimentary rocks. Such an approach was taken with select potsherd samples from Ambergris Caye, Belize. 4 samples of Coconut Walk unslipped pottery were studied to determine the dominant and accessory minerals and to describe the fabric of the samples using transmitted and reflected light and electron microscopy. All samples are poorly sorted (i.e., they have a wide variety of grain sizes). The larger particles are dominated by subrounded quartz grains that are highly fractured. The average size of these large particles range from 0.06 to 1 mm, and in general range from medium silt to coarse sand. Also present are calcite grains that were more angular, with their edges following cleavage planes. Smaller opaque minerals were present in all samples (11 to 163 microns). Scanning electron microscopy combined with electron dispersive spectrometry indicated that these small grains include rutile (TiO2) and a rare earth phosphate. The rare earth phosphate grains are important to note because they contain a significant amount of uranium, neodymium, and gadolinium. These grains were disseminated throughout the pottery bodies and so are unlikely connected to any surficial soil contaminant. The distribution of minerals and the fabric was uniform throughout the pottery body.

Subject Category

Science and Mathematics Categories: Geological Sciences Faculty Sponsor Department Geological Sciences Faculty Sponsor Dori Farthing Funding Sources None

130 • Yellowstone Obsidian Spherulite Mineralogy

David Loewenguth

Abstract

Obsidian samples collected from the Upper Falls area in Yellowstone National Park, Wyoming, contained millimetersized white to light grey spherulites. These samples were described and studied with a scanning electron microscope (SEM) and X-ray diffraction (XRD) to determine chemistry and mineralogy. Previous studies suggested that common minerals in obsidian spherulites could be quartz polymorphs, clinopyroxene, fayalite, anorthoclase and sanidine. SEM data shows that the obsidian chemistry consisted of (in order of abundance) O, Si, Al, K, Na, Ca, Fe, Mg, while the spherulite chemistry consisted of O, Si, Al, K, Na, Fe. Micron-scale Al flecks were present on the obsidian surface. Initial XRD analysis of hand-picked samples of spherulite suggested that Sanidine (KAISi3O8) is the dominant mineral. these spherulites are likely due to devitrification processes where amorphous glass partially crystallizes.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department Geological Sciences Faculty Sponsor Dori Farthing Funding Sources None

291 • Evidence of Melt Depletion and Metasomatism of the Mantle: A Study of Ultramafic Xenoliths from Dish Hill Volcanic Center, California

Jack O'Donnell

Abstract

The Dish Hill Volcanic Center near Ludlow, California, lies in the Mojave province, just west of the North American cratonic boundary. Since the Jurassic, this region has been affected by the subduction of the Farallon plate. This study examines a suite of ultramafic mantle xenoliths carried to the surface in Plio-Pleistocene age basanite lavas. Characterizing the textures and mineral chemistries of fourteen xenoliths by energy dispersive x-ray spectroscopy (EDS) element maps and area analyses will inform our understanding of how subduction affects the composition of the sublithospheric mantle of the overriding plate. The peridotite samples in this study are spinel Iherzolite, harzburgite, dunite, and olivine websterite, with a dominant allotriomorphic granular texture. Two samples contain amphiboles with kaersutite-pargasite composition, occurring as pargasite rims around embayed and sieved spinels and as a vein of euhedral kaersutite oikocrysts and 1-2mm euhedral apatites. Microcrysts of euhedral clinopyroxene occur in association with the amphiboles. Olivine and spinel compositions for most samples have depleted Mg# (Mg/(Mg+Fe)*100); however, the kaersutite vein sample has olivines relatively enriched in Fe. The Cr# (Cr/(Cr+AI)*100) of spinels in all xenolith samples show variability independent of their Mg# and rock type, though all Cr#s measured are considered depleted. Most xenoliths have spinels with high Mg# and low Cr#, similar to abyssal peridotites, but some have relatively Fe-enriched spinels with depleted Cr#. This presentation will discuss the evidence for how fluid-rock interactions or melting in the mantle above a subducting slab may change mineral chemistries.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor Sarah Gaudio Funding Sources None

2K: Sustainability Optimization Part 2

10:30-11:45am, Wednesday, 26 April 2023, Welles 117 Session Chair Ahmad Almomani, Mathematics

152 • Hybrid Algorithm of Particle Swarm Optimization and the Nelder-Mead Method 💋

Yuki Watariguchi

Abstract

We utilized a hybrid algorithm combining the Particle Swarm Optimization and the Nelder-Mead Method, both of which are recognized optimization methods, in the context of artificial intelligence. We conducted a comparison of the performance of this algorithm with other hybrid optimization techniques. Our analysis focused on evaluating the rate of convergence and accuracy of both methods using data and performance profiles.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

350 • Bioenergy Via Cable Bacteria 💋

Nicole Stango

Abstract

Taking into consideration the continual depletion of fossil fuels, the deposition of greenhouse gasses, and the energy demand worldwide, it is apparent that an alternative, more sustainable source of energy is needed. There are several alternative sources of energy including bioenergy, which is defined as renewable energy produced by living organisms. This project focuses on Cable bacteria and their potential to produce bioenergy for more sustainable living. Cable bacteria of the family Desulfobulbaceae are multicellular, filamentous microorganisms that can span a distance over one centimeter individually and are well known for their ability to conduct electricity via the transportation of electrons. Centimeter distances are significant for a single bacterium to cover, however, cable bacteria have the ability to connect to one another to form networks that conduct electricity via their unique electron transporting nature. Consequently, implementation of technologies that utilize Cable bacteria for power can be implemented and prove to be a feasible solution.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department Sustainability Faculty Sponsor Ahmad Almomani Funding Sources None

174 • Fractional Derivatives in Image Processing 💋

Daniel Fiutko

Abstract

The purpose of this project is to discuss fractional derivatives and their applications. Although many mathematicians have worked on fractional derivatives, I will primarily focus on the Riemann-Liouville definition and how it is related to the gamma function. Understanding the Riemann-Liouville definition will allow us to explain why fractional derivatives are important and what their applications are. More specifically this project will discuss the advantage of using fractional calculus in image processing. This process has helped in the development of image enhancement, image denoising, and multiple other image fields.

Subject Category

Science and Mathematics Categories: Applied Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

76 • Greschorin circle's and their applications $\boldsymbol{\mathscr{D}}$

Scott Ward

Abstract

Exploring greschorin circle's and using complex numbers in matrix calculations. Will also be exploring practical applications of the topic

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department

Mathematics

Faculty Sponsor

Ahmad Almomani Funding Sources

None

2L: Biology Session 2

10:30-11:45am, Wednesday, 26 April 2023, Welles 119 Session Chair Travis Bailey, Biology

172 • Localizing Shh in Zebrafish Retinal Regeneration

Katie Morgan, Skylar Morello, Haley Coombs, Adrianna Licata

Abstract

Zebrafish are freshwater fish that are 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 involved in 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). Following the genetic pathway which allows for retinal cell regrowth in zebrafish could potentially be to mammalian organisms if properly understood. It is currently known that the Sonic hedgehog (Shh) pathway is what causes this regeneration (Thomas, 2018). A particular gene of interest in this pathway is Ptch2, this gene is what kickstarts the development of new cells. This gene also allows the pathway to overexpress, which is what facilitates differentiation of newly developed cells (Nuesslein-Volhard, 2000). The overall goal of the project 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 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)

113 • Optimization of protein expression and purification of R2Bm mutant proteins

Julia May, Abbey Hanes, Julia Chapin, Samantha Dumitrescu

Abstract

Long Interspersed Elements (LINEs) are retrotransposons found in eukaryotic genomes. Active LINEs are occasionally responsible for diseases including cancers, hemophilia, and muscular dystrophy. Transposition of LINEs begins with DNA cleavage activity of an endonuclease, which releases a 3'-OH group. Reverse transcriptase uses the 3'-OH and reverse transcribes RNA into cDNA at the target site; known as Target Primed Reverse Transcription (TPRT). R2 elements from Bombyx mori (R2Bm) belong to an earlier branching group of LINEs with a single Open Reading Frame (ORF) consisting of reverse transcriptase (RT), endonuclease, and nucleic acid-binding domains. These elements insert into a fraction of the multi-copy 28S rRNA genes. Site-directed mutagenesis was used to mutate highly conserved regions within the RT and Thumb region of R2Bm. These conserved regions are hypothesized to be involved in nucleic acid binding, which is critical for TPRT. Double alanine substitutions (e.g. HRKK to HRAA, RK to AA, and KPQ to APA) were made directly in the Histagged wild-type expression vector and the mutant constructs were transformed into BL21 cells and plated on LB with Kanamycin for selection. Single Kanamycin resistant colonies from the mutants were grown in LB with Kanamycin media and mutant R2Bm protein expression was induced using IPTG. Mutant purification was optimized using affinity chromatography. We conclude that we successfully optimized the expression and purification of the mutant proteins and the amounts of mutant proteins purified were similar to that of the wild-type R2Bm protein.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department Biology Faculty Sponsor Varuni Jamburuthugoda Funding Sources None

79 • My First-year Course-based Undergraduate Research Experience (CURE) Testing a Protein We Designed

Isabel Reitano-Stayer

Abstract

The goal of our Course Based Undergraduate Research Experience (CURE) was to design, build, and test a new enzyme. We based our design on the enzyme BgIB, an enzyme that cleaves β -D glucosides. We changed the sequence of BgIB at position 25 from Aspartate (abbreviated D) to Histidine (H) because it was predicted to lower the binding energy of BgIB for its substrates. Our prediction was that the D25H mutation would make BgIB better. We built the altered enzyme using Kunkel Mutagenesis in E. coli bacteria to produce D25H BgIB mutant protein. We sequenced clones of our designed DNA to confirm that mutagenesis took place. We transformed BL21 cells and induced protein expression of the

mutant. We purified the protein from the bacteria by affinity column chromatography. We tested the catalytic efficiency of the mutant enzyme to cleave 4-nitrophenyl- β -D-glucopyranoside, which turns yellow upon cleavage. We measured substrate conversion by 420 nm light absorption using microwell plate spectroscopy. We compared the Michaelis Menten kinetics of wild-type to D25H enzyme. We had setbacks that we overcame.

Subject Category Science and Mathematics Categories: Biochemistry Faculty Sponsor Department Biology Faculty Sponsor Travis Bailey Funding Sources

None, Other Source of Support

2M: Self and Community-Based Empowerment in Black Culture and Art

10:30-11:45am, Wednesday, 26 April 2023, Welles 128 Session Chair Olachoa Nwabara, English

62 • Senegalese Perspectives in Sustainability: Redefining Progress Through the Lens of Afro-Identities

Yarold Bautista Martinez

Abstract

My research is centered on understanding locality and regional communities and the ways in which communities and the individuals that are part of those communities perceive and affect positive and sustainable change. Despite challenges with foreign perspectives of what it means to be sustainable, the conceptualization of progress in Senegal – particularly in Dakar, Toubacuta, Sepo Island, and Ndem–, is consistently tangible and community-based. Based on this conception of progress, Senegal is progressing towards a more sustainable future with local, regional, and community efforts. From my sources and research, I was able to highlight community, cooperation, and tangibility as the three principles most relevant and commonly referenced, described, and outlined as crucial or essential to finding sustainable solutions and progressing equitably and sustainably. This study examined secondary sources from the West African Research Center in Dakar, Senegal, along with in-depth interviews of community members in the areas mentioned to bring in the lived experiences to provide rich context (methods, perspectives, narrative) about the ways Senegalese people practice sustainability on a regular basis, towards community-based notions of progress.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

English, Africana Studies, and WGST

Faculty Sponsor

Olaocha Nwabara

Funding Sources

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

32 • Reform, Reframe, and Re-educate: Combatting The Erasure of the African Diaspora in The Dominican Republic

Lidabel Avila

Abstract

Over the span of five centuries, social and political movements have assisted in the censorship of African diasporic history in the Dominican Republic, both in and out of its educational environments. From Christopher Columbus'
invasion of the island of Quisqueya (Hispaniola) in the 15th century, to Rafael Trujillo's dictatorship in the country from 1930 to 1961, both the Dominican Republic and Haiti have endured the rigid impacts of the island's colonial influences, including their national division and ongoing tensions. As a result of this Eurocentric dominant leadership, several values taught within Dominican and Dominican-American households and schools are rooted in anti-Black, colorist and anti-Haitian views. Furthermore, these values often bleed into other moral and social standards taught as a part of the 'culture.' This paper serves to provide historical connections between systematic anti-Blackness in the Dominican Republic, and the communal, educational, emotional, and spiritual principles that have risen from it. By reforming some of these principles—utilizing contemporary and historical findings that bridge diasporic gaps—they become a mechanism of freedom and resistance against Eurocentric oppression and repression. In establishing context for this cultural framework, this paper will also offer strategies for educational reform within and beyond Afro-Latinx homes and schooling communities.

Subject Category

Interdisciplinary and Other Categories: Black Studies
Faculty Sponsor Department
English
Faculty Sponsor
Olaocha Nwabara
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

17 • Adichie and African Womanism

Lauren McCormick

Abstract

Chimamanda Ngozi Adichie has always been a symbol for the ideals of female empowerment. An outspoken feminist Adichie is always very vocal about her ideas but has never called herself an African feminist or African Womanist believing that feminism should be universal but her writing provides diverse ways of thinking about empowerment beyond her goals. When we examine Adichie's works we see how overcoming trauma and oppression to get back to the community plays a huge role like Ifemelu overcoming her own negative self perception to find Nigerian community through her blog (Americanah), Kambili overcoming her father's trauma to relate to her aunt (Purple Hibiscus) and Olanna overcoming her own problems to teach and assist refugees (Half of a Yellow Sun). This research examines the values of African/Black feminisms and African womanism, how those principles have been exemplified in Adichie's literary work and how her writings are useful to the African Woman. It also discusses the impact Adichie has had on African womanism, African feminism and how her writing has contributed to the movement. We look through most of her seminal pieces such as Americanah, Purple Hibiscus and Half of A Yellow Sun and how themes such as silence, development standards of beauty, body image and identity have been used to exemplify the experience of the African woman. We discover how Adichie uses her own personal experience to convey a message of self empowerment and confidence in one's identity.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Olachoa Nwabara Funding Sources None

39 • Eradicate the Black Blight for the Present & Future of American Education

Makayla Williams Abstract This paper presents/argues the current state of ways of teaching Black beings and authors in higher education. Linguistic justice for all Black literature and the teachings of Blackness in higher education classrooms is pivotal for the educational experience of Black students. Tackling normalized erasures to forefront honesty – ideas of Blackness being in American Literary education but actual Black cultures are ignored– is necessary when teaching Black students in a way that is reflective of their real world experiences' as human beings. Its must be acknowledged that the current ways of teaching Black literature and scholarship is often framed by a common and generalized history and preservation of a legacy of White superiority in English, writing and standards. Reflecting a need to decolonize the way English Language Arts is taught in higher education, so that Black students can justifiably connect to their academic spheres and see Blackness equally valuable and deserving of respect as Whiteness when taught and talked about in all English and literature classrooms. This research uses the researcher's institution as a case study; interviewing English faculty and scholars to gain their perspectives on the engagement with Blackness at our college. Actualization of a framework of critical thinking about all facets of the lives of Black students experiences in America, who's racial catagaration bleeds into todays' academics. Honest and critical ways of teaching erased Black culture, literature and challenging misleading scholarship in college teachings is the only future for the American educational system.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Olaocha Nwabara Funding Sources McNair Scholars Program Support

28 • The Unspoken Reality of Our Communities: How We Are Conditioned to Build Better Communities for All Those Except Us

Genesis Flores

Abstract

My research focuses on multicultural communities, specifically Black and Latino communities and examines how social structures lay the groundwork for how communities function, and how these structures affect the functionality of said communities. I want my writing and research to not only discuss the issue, but also be used as a resource to help improve difficulties experienced in my community, modeling methods equally useful in other communities. My project focuses on New York City, specifically the Bronx, because of its numerous neighborhoods that are segregated by culture, racial and ethnic background. Additionally, I am from the Bronx so I have seen how these structures have changed. I incorporate and highlight the lived experiences of my fellow community members in order to bring in other perspectives, to shape the improvement that is needed. In discussing the background and technicalities of how the community functions, I use findings from interviews with my former teachers and classmates and participant observation to propose realistic solutions using existing resources in these communities (e.g. contact the only bookstore in the Bronx, actively use recreational centers and college help centers, reach out to NYDOE about effectively providing a Culturally Responsive Sustaining Education and Teaching). It takes a lot of emotional strength to get out of the vicious cycle filled with settling and not taking action, though it may be comforting, the younger generations need to see how they can make use of their resources and education. That encouragement and representation starts in the community they live in.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Olaocha Nwabara Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

2N: School of Business Session 2

10:30-11:45am, Wednesday, 26 April 2023, Welles 131 Session Chair Mark Rider, School of Business

303 • The 'Green' CPI: The Cost of Green Consumerism in the Developed World and its Determinants \mathcal{S}

Maeve Reed

Abstract

As our planet and environment rapidly deteriorate and high levels of consumption in society continue to skyrocket, green consumerism becomes increasingly important. There are several popular theories among the general public about why many have not adopted more green approaches to consumption. Most notably, high prices and low usability come to mind. But are these truly green consumerism's primary inhibitors? Is it possible that high prices are not what is causing low levels of adoption, but in fact, other factors are leading to low levels of adoption, which in turn, leads to low demand and higher prices? The goal of my research is to better understand the determinants of the cost for green consumer's market basket, adopted from the Bureau of Labor Statistics' Consumer Price Index (and the EU equivalent), we are able to estimate the true additional cost associated with a green approach to consumption. After creating this estimate, we can explore which explanatory variables are most closely correlated with the cost of green consumption. Some determinants of interest include the countries' involvement in global climate agreements such as the Paris Climate Accords, per capita income, and the Economist Intelligence Unit's Democracy Index.

Subject Category

School of Business Categories: Economics

Faculty Sponsor Department School of Business Faculty Sponsor Christopher Annala Funding Sources None

208 • Pawsibilities, Pitch Deck (Flash Presentation)

Brooke Halm

Abstract

Life after college can be isolating due to the lack of opportunities to meet like-minded people while traversing living in a new city. Meet-up app users are not satisfied with their current offerings, like Bumble BFF, because of its blurred intentions and lack of safety net. Pawsibilities aims to connect a community of dog owners to share a love for their furry friends in a safe and secure environment. By equipping our community members with features like location partnering with nearby dog-friendly spaces, geolocation technology, differentiated profile metrics, and in-app safety measures, we bring owners together so they can build meaningful relationships that last a lifetime.

Subject Category

School of Business Categories: Entrepreneurship

Faculty Sponsor Department School of Business

Faculty Sponsor Mark Rider Funding Sources None

205 • Assisted Psychotherapy Retreat Center

Caleb Clarke

Abstract

This presentation will outline a design for an assisted psychotherapy retreat center. Assisted psychotherapies use psychoactive compounds such as Psilocybin or MDMA in a monitored and controlled environment to help treat psychiatric conditions including Major depression, PTSD, OCD and substance abuse. Preliminary research has shown that this technique has profound benefits for patients. The retreat center will offer patients an extended stay which will capitalize on critical periods of neuroplasticity. Research will also be conducted in order to optimize the treatment protocol. The business plan will be implemented after it becomes legal in the coming years.

Subject Category

School of Business Categories: Entrepreneurship Faculty Sponsor Department School of Business Faculty Sponsor Mark Rider Funding Sources None

20:History Directed Studies: Using Unconventional Source Reading to Tell New

Stories

10:30-11:45am, Wednesday, 26 April 2023, Welles 132 Session Chair Justin Behrend, History

132 • Hungry for more than Freedom: Jamaican Maroons and Food Politics

Jack Kirby

Abstract

This paper focuses on the food history of maroons in Jamaica. More specifically, it analyzes the ways in which food was political in Jamaican maroon society. In the existing historiography, the preeminent scholars of Jamaican maroons argue that maroons had little political agency in their negotiations with the British. I argue that the lens of food shows a political agency that those scholars have largely left out. To arrive at this conclusion, I mainly relied on 18th and 19th century historians as primary sources. I also utilized maroon treaties, law codes, and court records as primary sources.

Subject Category

Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Justin Behrend Funding Sources None

141 • Punk and Perestroika: Voicing Resistance at the End of the USSR

Nathan Klaits

Abstract

This paper focuses on Siberian punk band, Grazhdanskaya Oborona. Founded in 1985, the band broke up in 1990 due to growing mainstream appeal and the end of totalitarian Soviet discourse. The liberal atmosphere of the Soviet Union during perestroika undercut GrOb's ability to voice criticism. Commercialization as well as a broadening audience also

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diluted the band's message and eventually caused it to break up. Referring to fanzines, interviews, and scholarly research, the paper presents the struggle of GrOb, as well as the Siberian punk scene more broadly, to voice criticism as rock commercialized and the authoritarian discourse of the mid 1980's broke down.

Subject Category

Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Jovana Babovic Funding Sources None

151 • Laborers and Laundrymen: Sinophobia and the Formation of American Masculinities

Adam Comstock

Abstract

This paper analyzes pre-existing scholarship and primary sources to connect 19th - 20th anti-Chinese sentiment to the notions of masculinity in the Americas. It takes a trans-national approach, examining Chinese labor migrations to both Anglo- and Latin-America and the effect they had on notions of gender. The paper argues that frontiersmen in the Americas, many of whom engaged in non-normative gender and sexuality practices, used anti-Chinese xenophobia to reinforce traditional masculinity. Connecting phenomena of race, gender, and sexuality, it takes an intersectional approach to history.

Subject Category Arts and Humanities Categories: History Faculty Sponsor Department History Faculty Sponsor Ling Ma Funding Sources None

2P: Literary Women: From Medieval England to Modern Canada

10:30-11:45am, Wednesday, 26 April 2023, Welles 134 Session Chair Kayla Stewart

18 • Esther: A Flawed Hero

Sheridan Morgan

Abstract

Through her poem "Esther," prominent female Canadian poet Isabella Valancy Crawford presents her interpretation of the Story of Esther, choosing to focus specifically on the characterization of the aforementioned Biblical figure. While most tend to view Esther as a hero of the Jewish people, Crawford examines the internal struggle she faced when debating the pros and cons to providing them salvation. Through this exploration of Esther's emotions, the reader gets a very real glimpse of a darker fate, had the Queen not decided to use her newfound power and status to expose the villainous plans of Haman to her oblivious husband, King Ahashverosh. It is easy to disregard Esther's flaws and focus solely on her heroics, but Crawford chooses to humanize her, making her an imperfect person who does not live in a world of black and white, but in shades of gray.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Graham N. Drake Funding Sources None

52 • "A lady wyth a sparhawke on her honde": Women and Falconry in Arthurian Literature

Elizabeth Roos

Abstract

Throughout Arthurian literature, falconry is often featured in the backgrounds of scenes and sequences. From as minimal of an appearance as a character described holding a sparrowhawk in Sir Thomas Malory's *Le Morte d'Arthur*, to the protagonist fully transforming into a merlin and spending the night in a falconry mews in T.H. White's *The Once and Future King*, hawks and falcons are almost everywhere. Falconry, or the practice of hunting wild quarry with trained birds of prey, has a long and lengthy history of appearance in Arthurian literature; however, what may not be as observable are how these appearances pertain to the positive and/or negative portrayal of women in King Arthur's story. At first glance, there may appear to be no correlation—what could a bird, an animal, have to do with the treatment of women in texts such as *Le Morte d'Arthur* or *The Once and Future King*? More than one might think.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Graham N. Drake Funding Sources None

161 • (Un)canny

James Ambrosio

Abstract

An attempt to put that which can not quite be put into words into words, (Un)canny uses Bennet and Royals, An Introduction To Literature, Criticism And Theory to applaud Margaret Atwood for her hyperbolic portrayal of a foreign man moving to Canada in her short story, "The Man From Mars." Bennet and Royle present a criteria for "the uncanny" in their chapter of the same name that calls attention to defamiliarization, recurrence, automatism, the ghost, the uncanny meaning of the word itself, and Atwood aces the test. In her commentary on the dangers of our personal projections, lines become blurred between perpetrator and victim. Following a shift in the main character that pushes her far beyond the familiar, this essay describes the most uncanny twist where Atwood's "Christine" transforms into the very thing she fears most.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Graham N. Drake Funding Sources None

2Q: Tokenization and Heritage Language Speakers: Experiences Inside the

Classroom

10:30-11:45am, Wednesday, 26 April 2023, Welles 138 Session Chair Susana Castillo-Rodríguez, Global Languages and Cultures

40 • Discussion panel with Dr Castillo-Rodriguez.

Gaetan Jean Louis Abstract I will be discussing my experience as a multilingual individual in a monolingual academic environment with Dr Castillo-Rodriguez and other people in the panel. Subject Category Arts and Humanities Categories: Literary Arts Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Dr Susana Castillo-Rodriguez Funding Sources None

46 • Tokenization and Heritage Language Speakers: Experiences inside the Classroom

Ricardo Mujica Abstract I will be presenting as a person from Ecuador who has experience the challenges of being bilingual in a monolingual classroom. As well as some ideas we can implement to create a better and more diverse environment for all students. Subject Category Arts and Humanities Categories: Spanish Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Susana Castillo-Rodriguez Funding Sources None

110 • Tokenization and Heritage Language Speakers: Experiences Inside the Classroom.

Karla Mejia, Gaetan Jean Louis**Error! Bookmark not defined.**, Michelly Meza-Benitez, Ricardo Mújica Abstract

Heritage speakers (HS) are a minority that, despite homogeneous representations, have diverse experiences regarding receptive and productive heritage language skills, with individual and varying degrees of exposure to formal heritage language literacy skills. As a minority group, HS are perceived through the lens of inclusion and diversity, particularly in educational settings. However, once placed in the foreign language courses, HS join second language learners in the classroom environment, triggering challenges that are commonly studied through the lens of methods of instruction and pedagogy. In the search for how to best teach and accommodate HS in the classroom, other aspects of the heritage learner experience, such as linguistic and raciolinguistic ideologies or tokenization acts, are often obliterated or avoided. In this panel session, we bring individual and classroom experiences from HS, second language learners, and instructors to talk about how they embody, represent, utilize, and feel about the dynamics created by their presence, representations, and expectations.

Subject Category Interdisciplinary and Other Categories: Linguistics Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Susana Castillo-Rodriguez Funding Sources None

2R: Performance as Social Change: Trans Rights and Black Queer Short Films

10:30-11:45am, Wednesday, 26 April 2023, Bailey 246 Session Chair Mark Broomfield, English

87 • Performance As Social Change: Trans Rights and Black Queer Short Films

Jonell Maldonado, Corina Tulevech, Nicholas Inferrera, Molly Brown, Iliana Papadopoulos, Isabelle Parisien, Mark Broomfield

Abstract

Performance as Social Change is a high-impact course designed for students interested in understanding the role arts play in advancing social change through interdisciplinary coursework. In their final group project—a short film about Trans Rights, students explore the discrimination against trans people, the intersection of homophobia, transphobia, and racism, and advocate for moving the Gay/Trans Panic Defense from a state issue to a federal issue so that it could be outlawed in every state and federally enforced.

Subject Category

Arts and Humanities Categories: Visual Arts Faculty Sponsor Department English Faculty Sponsor Mark Broomfield Funding Sources None

2S: Days of Our LIVES

10:30-11:45am, Wednesday, 26 April 2023, Newton 202 Session Chairs Sarah Kelly, Hannah Sullivan

314 • "Days of our LIVES"

Melissa Mitchell, Holly Gates, Marissa VanLieshout, Zachary Mogavero, Cody Schlageter, Sam Hardy, Dakota Pilc, Sarah Pope, Rachel Skidmore, Jackson Breen, Shania Guyett, Emily Link

Abstract

Join the SUNY Geneseo ARCGLOW LIVES program for a day filled with presentations, a poster board walk through and a look into the "Days of our LIVES," here on campus. Our students are excited to see you there and share the exciting things we do in the LIVES program! We can't wait to see you all there!

Subject Category

School of Education Categories: Childhood Education/Special Education

Faculty Sponsor Department

School of Education

Faculty Sponsor Jennifer Waddington Funding Sources None

3B: Initiatives in Sustainability

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 102 Session Chair Dan DeZarn, Office of Sustainability

218 • Happenings of the e-Garden 💋

Mai Nguyen-Jeanneret, Natsuki Takata, Madison Bulkley

Abstract

The e-Garden has seen many interns through its time. At almost 10 years, the garden has transformed with new ideas and initiatives that students bring in. This presentation will showcase the work done by some of the most recent student interns, members of the Garden Committee in the Office of Sustainability. During and post COVID-19, the structure and size of the Office of Sustainability has grown, and the e-Garden shows it all.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department Office of Sustainability Faculty Sponsor Dan DeZarn Funding Sources None

102 • Geneseo Compost Program: Why You Should Compost S

Kayla Andersen, Yarold Bautista Martinez, Marissa Terry, Dante Herbel, Jordan Davis, Katelyn Adis Abstract

The purpose of this presentation is to educate the student body on compost: the decomposition process and the status of the Geneseo Compost Program. Composting diverts organic waste such as food scraps, plant matter, and paper products from the landfill to decompose and create nutrient-rich soil rather than adding to the landfill and emitting methane. We will discuss the origins of the program and our goals for the future. For now, the Geneseo Compost Program is primarily student-run by members of the Office of Sustainability. The Office is operating through a directed study class called Campus Sustainability Leadership led by Dan DeZarn, the Director of Sustainability. Within this class, there are 28 students split into specialized subcommittees that work to make the Geneseo community a more eco-friendly place. The compost committee has six students: Kayla Andersen, Yaro Bautista Martinez, Marissa Terry, Jordan Davis, Dante Herbel, and Katelyn Adis. Twice a week we drive around campus picking up and dropping off little green buckets filled with compost from the Union, residence halls, and academic buildings; then we dump them at the compost pile and clean them for the next run. Our mission is to increase compost across campus through educational workshops, publicity, media promotion, and student engagement. In this presentation, you will learn the process of composting, its environmental benefits, what exactly you can compost, and where to bring it. If you would like to become more involved in sustainability on this campus there will be opportunities offered during the presentation.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

Office of Sustainability Faculty Sponsor Dan Dezarn Funding Sources

3C: Edgar Fellows Panel 8

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 103 Session Chair Michael Mills, National Fellowships & Scholarships

66 • The Sexual Stigma: The Impact of Purity Culture on HPV Vaccination Attitudes

Bridget Moyer

Abstract

Human papillomavirus (HPV) is the most common sexually transmitted infection among sexually active individuals. Those infected are at risk for developing cancer of the genitals, cervix, anus, or throat. While the vaccine is safe and effective, as of 2020 only 58.6% of adolescents in the United States were up to date on HPV vaccinations. Endorsing Christian Nationalist values is one of the top predictors of vaccine hesitancy in the U.S. The HPV vaccine is especially contentious among Christian Nationalists due to its relation to sexual health. The influence of purity culture has created a culture of fear regarding sex and a focus on preserving feminine honor. Mothers of adolescent girls in this group show a strong belief that the vaccine will promote promiscuity, despite several studies suggesting otherwise. Programs to increase vaccine uptake rates must consider this group and its beliefs to increase HPV vaccination coverage.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Jennifer Katz Funding Sources Other Source of Support

170 • Empathy, Mental Health, and the Brain

Thomas Griffin

Abstract

For my capstone project, my lab team and I investigated the associations that exist between mental health, the ability to accurately empathize, and brain activity in the dorsolateral prefrontal cortex, an area of the brain associated with decision making and reasoning. To this end, we designed a procedure where participants completed two empathy tasks while their brain activity was measured. In order to distinguish between different components of the empathy process in our investigation, the tasks selected activated distinct empathic abilities. The first measured theory of mind, the ability to take the perspective of another, while the second measured accuracy of emotion recognition in a social context. After completing these tasks, participants then filled out a mental health self-report form. Using these data, we analyzed associations that existed between accuracy in the empathy tasks and patterns of brain activity, investigating if those patterns of activity were tied to mental health scores. It is hypothesized that higher empathy scores will be associated with distinct patterns of brain activity, with these patterns then associated with greater symptoms of psychological conditions like social anxiety and depression. Preliminary results and implications of the study, as well as future directions, will be explored at the conclusion of the presentation.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Michael Lynch

Funding Sources

None

188 • Measurement of Diffractive Pion Production

Alex Ball

Abstract

Neutrinos only interact with matter using the weak force, so it is impossible to directly observe the composition of a beam of neutrinos. Instead, the composition of a neutrino beam must be determined from the reactions that can occur when neutrinos come into contact with atoms. Finding the probability of each of these reactions is the core mission of the MINERvA experiment at Fermilab in order to assist current neutrino oscillation experiments. Diffractive Pion Production is a reaction that frequently occurs in the MINERvA detector. This entails a neutrino weakly interacting with a proton via a Z-boson, followed by the Z-boson becoming a π^0 meson in the strong field of the proton. The probability of diffractive pion production as a function of the energy of the emitted pion as well as the four-momentum squared of the recoiling proton was found using data from the MINERvA detector and simulations of the detector. First, the simulation results were rescaled in order to match the data. Then, to determine the reaction probability, the distributions of end-state particle energies were extracted from the distributions of energy deposited in the detector during the reaction. This was done utilizing a migration matrix which relates the true energies of the end state particles to what would be deposited in the detector according to the simulations. Several regularization techniques were applied to the matrix to reduce uncertainty. Finally, an efficiency correction was applied to correct for the fact that the MINERvA detector can't fully capture all events.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department Physics Faculty Sponsor Thomas Osburn Funding Sources None

287 • Exploring the Potential for Pottery Class to Improve Overall Mental Health

Lily Qian

Abstract

Engagement in art has been recognized to alleviate mental health concerns including stress, depression, and anxiety. In recent years, the increase in mental health awareness and concerns in colleges have overwhelmed the support systems that are available on campuses, resulting in longer waiting times, limited consultations, and other obstacles when obtaining mental health support (Saha et. al, 2022). To alleviate the burden placed on the limited mental health support systems, colleges could potentially turn towards more holistic approaches to target the problem before it begins. Utilizing art classes to improve mental health may hold promises as it brings together the art and social aspects. This primarily qualitative research focuses specifically on the mental health of students and instructors in pottery classes. I conducted surveys accessible to all the students, held in depth interviews with instructors, and observed classes in the Avon region of Livingston County. It is predicted that pottery classes offer an environment for meditation and social interactions, which are indicative to improving mental health. There is evidence suggesting that art exercises increase mental health capacity and mediate access to healthy mental states (Martin & Colp, 2022). Some restrictions to introducing pottery classes exist, including material costs and the strength required to work with clay. Incorporating hands-on, creativity based classes into college curriculums may be a plausible method to improve the mental health of college students while simultaneously addressing mental health concerns before they get worse.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Sustainability Faculty Sponsor Dan DeZarn Funding Sources None

3D: Bringing Philosophy to the Real-World: Ethics and Charitable Giving

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 104 Session Chair Amanda Roth, Philosophy

86 • PHIL 130 Charitable Giving Project Results & Analysis–Group 1

Daniel Tompkins, Madison Bragg, Eric Morehouse

Abstract

Student groups will discuss the parameters, results, and learning takeaways associated with an active learning project assigned in Phil 130 Ethics during spring 2023. The project–Effective Altruism and Charitable Giving–asks students to work

Subject Category Arts and Humanities Categories: Philosophy

Faculty Sponsor Department Philosophy

Faculty Sponsor Amanda Roth Funding Sources None

128 • PHIL 130 Charitable Giving Project Results & Analysis–Group 3

Timothy Hillanbrand, Cassandra James, Alexander Dellaratta

Abstract

Student groups will discuss the parameters, results, and learning takeaways associated with an active learning project assigned in Phil 130 Ethics during spring 2023. The project–Effective Altruism and Charitable Giving–asks students to work together in applying philosophical concepts, ideas, and arguments to make real-world decisions about charitable giving.

Subject Category

Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy Faculty Sponsor Amanda Roth Funding Sources Other Source of Support

197 • PHIL 130 Charitable Giving Project Results & Analysis–Group 2

Nicolette Farago, Alex Jacobsen, Bryce Daskiewich Abstract

Student groups will discuss the parameters, results, and learning takeaways associated with an active learning project assigned in Phil 130 Ethics during spring 2023. The project–Effective Altruism and Charitable Giving–asks students to work together in applying philosophical concepts, ideas, and arguments to make real-world decisions about charitable giving.

Subject Category Arts and Humanities Categories: Philosophy Faculty Sponsor Department Philosophy Faculty Sponsor Amanda Roth Funding Sources Other Source of Support

3E: Edgar Fellows Panel 7

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 105 Session Chair Lee Pierce, Communication

142 • Creating a Podcast to Make Research about Reproductive Justice More Accessible

Taylor Hansen

Abstract

In this presentation I will explain how I created a podcast about the findings from my research about reproductive justice. In this study, reproductive justice was understood as the right to have children, the right to not have children, and the right to have children in a safe and dignified environment. Starting from recommendations about what efforts should be made to promote reproductive justice, this project sought to find out what grassroots organizations are currently doing. In order to understand how grassroots organizers are addressing reproductive issues today, I interviewed eight leaders who are conducting this work in Western New York, predominantly in Rochester and Buffalo. From this work, three main findings emerged. The first is that there is an extensive list of barriers that prevent people from accessing reproductive health care including limited clinics, lack of transportation, crisis pregnancy centers, and limited funding. Secondly, grassroots organizations and health care providers are working to combat these barriers by encouraging voter registration, expanding clinic hours, increasing education, and centering Black and brown bodies in the work they do. Finally, it was clear that the leaders I interviewed center joy in their fight to make care accessible to all. I was motivated to make these results accessible by creating a podcast. The main goal was to communicate my research process and share the results in a way that could be understood by anyone.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department Anthropology Faculty Sponsor Jennifer R. Guzmán Funding Sources None

150 • The Poetics of Queerness

Frances Sharples

Abstract

As poetry grows and evolves, its writers and features become more specialized, and the opportunities poetry as a medium presents expand; queer poetics, an ever-changing practice that has been imagined and reimagined over centuries, provides an especially unique example of the many ways in which poetry has broadened over time. This

presentation will deliver a short history and interpretation of several queer poets and theorists presented through a modern poetic lens, followed by an analysis of how queer poets have broken binaries of all kinds. There will additionally be a gallery of the presenter's multimedia chapbook, inspired by the literary and theory-based studies presented.

Subject Category

Arts and Humanities Categories: Literary Arts Faculty Sponsor Department English Faculty Sponsor Lytton Smith Funding Sources None

163 • Investigating the Capabilities of a Solar Thermal Air Heater

Noah Longshore

Abstract

A solar thermal air heating system was created at SUNY Geneseo's eGarden in order to test the capabilities of such a system as a sustainable alternative to traditional interior heating methods. The solar air heater was constructed using both new and refurbished materials and was designed as an updated version of a previous experimental project. Alongside the solar air heater, an Arduino based data collection system was created allowing comprehensive temperature, pressure, and insolation data from as many as ten sensors to be collected simultaneously. Experimental trials on the system showed significant results, with power output efficiencies rivaling some commercially available units.

Subject Category Science and Mathematics Categories: Physics Faculty Sponsor Department Physics Faculty Sponsor Stephen Padalino Funding Sources Other Source of Support

273 • Authoritarian Regimes and Discursive Legitimation Practices: Egypt after the Arab Spring

Hannah Cole

Abstract

This honors thesis discusses how authoritarian regimes strategically utilize discourse such as human rights, women rights, climate change, and nationalism to legitimize themselves to their domestic and international audiences. Current studies of legitimation do not consider such discourse as related to regional power dynamics nor the power of narrative building, character of regime legitimation, as related to regional state preeminence. My analysis seeks to combine the study of discursive legitimation to the dynamics of hegemony. Referring to the case of post-Arab Spring Egypt, such research creates a link between the Abdel Fattah el-Sisi regime's utilization of discourse as a vehicle to legitimize their authoritarian governance. Examining contemporary narratives surrounding ideas like deregulation of hijabs, increased support in climate change, and nationalist rhetoric touted by the Sisi led government, this paper links such discursive practices to domestic and hegemonic legitimization of the regime.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations

Faculty Sponsor

Raslan Ibrahim Funding Sources None

3F: Geneseo Changemakers: Presentations by the 2023 Student Ambassadors

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 201 Session Chair Melanie Medeiros, Anthropology and Center for Integrative Learning

49 • The Pantry at Geneseo: An On-Campus Resource for Food Insecurity S

Matthew McGowan, Shelby Soper, Halie Cardon

Abstract

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. Our ambassadorship addresses these issues in a number of ways, primarily through our main question, how might we expand the usage of The Pantry amongst Geneseo students and provide resources to decrease food insecurity on campus? Some of our goals throughout the ambassadorship is to reach more students through The Pantry, and create an overall awareness of food insecurity. With that comes a need for acquiring a larger storage space, another one of our project goals. We also aim to find a more reliable food source for the growing number of students who are using The Pantry. In our presentation, we will briefly discuss the issue our ambassadorship seeks to address. We will describe our project, provide data to show how prevalent the issue is, and discuss progress we've made thus far.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department Center for Integrative Learning Faculty Sponsor Melanie Medeiros Funding Sources Student Ambassadorship, Student Ambassador Award

184 • Genny Thrift ダ

Lauren Verde, Jessica Mazzeo

Abstract

The harmful fast-fashion industry releases high levels of greenhouse gas emissions, generates a copious amount of textile waste, and permits inhumane working conditions in order to maximize profit. Genny Thrift reduces the negative environmental and social impacts of the fast-fashion industry by collecting clothing donations and providing high-quality, affordable, secondhand clothing to Geneseo students within walking distance of campus. For our ambassadorship, we are expanding the operations of Genny Thrift with the goal of transitioning from a "pop-up" model to having a permanent space for Geneseo students to purchase clothing. Our Great Day Presentation will detail the steps we have taken to make this transition as well as detail the success of our first pop-up sale of the semester. While detailing the progress we've made and the impact we've had on the Geneseo Campus Community, we will also include hardships we have faced along our way. This process has been extremely promising, rewarding and an incredible learning experience that we are excited to continue throughout the rest of the year. Our presentation will not only convey the steps we have taken but the growth we have experienced both as individuals and as a team, as we learn valuable lessons that will forever affect our lives going forward.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program Faculty Sponsor Department Center For Integrative Learning Faculty Sponsor Melanie Medeiros Funding Sources Student Ambassadorship

64 • Rural Transgender Poetics

Elliot Pecora

Abstract

According to 2014-2017 data from the CDC, about 16% of transgender people live in rural areas, which is equal to the number of heterosexual and cisgender people who do (MAP 2). Yet, a 2019 study by the Movement Advancement Project shows that rural transgender people experience challenges through increased visibility, fewer alternatives, and less support structure and resources. Additionally, legal marginalization has been worsening in recent years, as NPR states in a 2022 article: "... over the past two years, state lawmakers introduced at least 306 bills targeting trans people, more than in any previous period. A majority of this legislation, 86%, focuses on trans youth" (Nakajima, Jin). Thus, over the course of 2023, as the awardee of the SUNY Geneseo Keith '11 and Joanna '13 Walters Artist-in-Residence Ambassadorship, I'll be holding a number of in-person and online poetics workshops which focus on TGNB+ writers. Through these, I hope to center transgender voices, build community for rural transgender people, and encourage self-expression. Additionally, I'll be creating my own collection of poetry which is informed by my own experiences growing up transgender in a rural area. Through sharing my work on my website and social media pages, I hope to encourage other trans writers to do the same, especially those who are lacking a large in-person community. In this presentation, I'll discuss the problem my ambassadorship seeks to address, describe my ambassador project and what I hope to accomplish, and discuss the progress I've made on my project.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department Center for Integrative Learning Faculty Sponsor Melanie Medeiros Funding Sources Student Ambassadorship

234 • Improving Geneseo Sexual Health Education and Outreach: James Houston '80 Ambassadorship in Innovation

Olivia Khangi

Abstract

College sexual health services, and especially educational programs, are lacking nationwide. Students do not have the resources that they need or want, and college students are a high-risk group for sexual health issues. My preliminary research indicates a need for better student education on sexual health, as well as increased student awareness of sexual health resources on the SUNY Geneseo Campus There must be higher standards for student knowledge of resources on campus as well as safe sex practices. Sexual health education must be up to date, diverse, and effective for the targeted population. My project looks to create a strong educational and outreach program for the sexual health resources at SUNY Geneseo. In my presentation I will be reviewing my research findings as well as my progress in planning and implementing my program.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Amy Braksmajer Funding Sources Student Ambassadorship

125 • "32/23: Remembering Kelsey and Matthew" a Documentary Podcast

Rocio Ruiz, Sparrow Potter

Abstract

How might we as Geneseo community members honor and remember the lives of Kelsey Annese and Matthew Hutchinson? I am producing a podcast that will allow the Geneseo community to honor the lives of Kelsey Annese and Matthew Hutchinson by spreading love and support to others, just like they did in this community. This podcast will also remember these two individuals for who they were and what they embraced rather than associating them with the tragedy surrounding their death. Their story also teaches us as listeners the importance of having conversations on mental health.

In this presentation, we will talk about what exactly goes into creating this podcast – ideas, interviews, music, editing, and marketing.

Subject Category

Arts and Humanities Categories: Philosophy

Faculty Sponsor Department

Center for Integrative Learning Faculty Sponsor

Melanie Medeiros

Funding Sources

Student Ambassadorship

306 • Educational Inequity Watch

Laura Wright

Abstract

Educational inequalities are a prevalent issue that perpetuates systemic racism throughout our society. More often than not, we see our education system divided and segregated, with schools that are predominantly white and schools that are predominantly BIPOC. The schools that have a significant number of BIPOC students receive fewer educational resources, such as access to technology, quality textbooks and honors courses, funding, extracurricular activities and clubs, and highly qualified teachers. This impacts them not only when they get into college but also throughout their college experience.

This project aims to spread awareness about the educational inequities that BIPOC students face. In an effort to do that, I will be conducting surveys, interviews, and focus groups where BIPOC college students will share their experiences in the K-12 education system and how it affected them in college. After collecting all the data, I will create a website that will share the selected interviews about the inequities that BIPOC students faced in their education system.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department Center for Integrative Learning Faculty Sponsor Melanie Meridos Funding Sources Student Ambassadorship

180 • Financial Literacy Game

Bryce DeFazio

Abstract

Financial illiteracy, a lack of knowledge and skills of financial concepts necessary to make informed decisions regarding personal finance, is a critical issue that affects millions of people in the United States, leading to financial difficulties. One of many concerning statistics that demonstrates a massive problem of financial illiteracy is that 60% percent of Americans live paycheck to paycheck. This project aims to address this problem by developing and distributing an innovative and engaging card game to high schools that teaches personal finance concepts through gamification. Over the course of 2023, I will be gathering research, conducting surveys, creating this game, and distributing the game to high schools for free. The card game is designed to be interactive and fun, making it an effective tool for teaching students about managing money. The game is tailored to high school students, incorporating real-world financial situations that they are likely to encounter in their lives, but is useful for all ages. By using a game-based approach to financial education, the project aims to provide students with a hands-on learning experience that is both enjoyable and educational. The game's distribution to high schools across the country will help ensure that financial education reaches a wider, younger audience and students can access the game at no cost. This approach will increase access to financial literacy education, especially for underprivileged students who might not have access to financial literacy programs. The ultimate goal of this project is to empower students by giving them fundamental financial knowledge.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department Center for Integrative Learning Faculty Sponsor

Melanie Medeiros Funding Sources

Student Ambassadorship

134 • The Study Guide: A SUNY Geneseo Study Space Website

Paris Interdonato-Carreras

Abstract

2023 Student Ambassador, Paris Interdonato-Carreras, will give an overview of her Ambassadorship Project, walk through the process of its creation, and discuss its significance within the SUNY Geneseo community. Her project is creating a website that has pictures and descriptions of every study space offered on campus. This project is meant to make the SUNY Geneseo environment more accessible and inclusive, especially for those with cognitive and physical disabilities.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros

Funding Sources

Student Ambassadorship

3G: Black Opera and Black Women in Opera (Flash Presentations)

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 202 Session Chair Monica Hershberger, Music

325 • Haiti, Opera, and African American Culture

Piper Beckwith

Abstract

In 1915, the United States occupied Haiti, with many Americans justifying the invasion after the political unrest sparked by the assassination of the President, Jean Vilbrun Guillaume Sam. Following the debates surrounding the U.S. occupation in Haiti during the American Presidential election in 1920, along with the critical report "Self-Determining Haiti" by James Weldon Johnson, criticism of the occupation increased. Haiti and Haitian culture became a prominent topic in many music compositions as the topic of the U.S. occupation gained more publicity. Many of these composers did not take the time to research the culture of Haiti, and the resulting cultural inaccuracy inadvertently weaponized the events happening in Haiti to perpetuate the stereotypical belief that Haiti is a primitive, violent country. Aided by the zeitgeist of the Harlem Renaissance, many black composers used the events in Haiti as a chance to celebrate Haitian culture and, in turn, African American culture. In this flash presentation, I will explore two operas, Clarence Cameron White's *Ouanga!* (1932) and William Grant Still's *Troubled Island* (1949), and how these two black composers utilize both the Haitian Revolution and opera influenced by the Harlem Renaissance to celebrate African American culture.

Subject Category

Arts and Humanities Categories: Music Faculty Sponsor Department Music Faculty Sponsor Monica Hershberger Funding Sources None

326 • Harriet Tubman on Stage and Screen

Giana Cheri

Abstract

On February 27, 2014, Nkeiru Okoye's *Harriet Tubman: When I Crossed That Line to Freedom* premiered at the Irondale Center in Brooklyn, New York. Set in the 1820s on a plantation located on the Eastern Shores of Maryland, the opera features a primarily Black cast demonstrating the daily lives of enslaved people and how Harriet Tubman risked her own life to save others. Many other adaptations of Tubman's legacy have come to light, including *Harriet*, directed by Kasi Lemmons. Like Okoye's opera, this 2019 movie demonstrates Tubman's determination and strength as she risked her life to save others despite criticism from other enslaved people and violence from white men. As slavery continued in the United States, enslaved people began to make music that demonstrated their strength through the present and hope for the future, which were later designated as "Negro Spirituals." In this flash presentation, I highlight the works of both Okoye and Lemmons and analyze Tubman's abilities as a hero and activist for the mistreatment of enslaved people and how she became a voice for the oppressed. I also analyze how Negro spirituals helped enslaved people never lose hope and how their songs become messages from future generations to come, through personal interviews and presentations from former colleagues and mentors.

Subject Category Arts and Humanities Categories: Music Faculty Sponsor Department Music Faculty Sponsor Monica Hershberger Funding Sources None

327 • From Porgy and Bess (1935) to Margaret Garner (2005)

Alannah Egan

Abstract

Porgy and Bess, an opera by George Gershwin (a white man) based on the 1925 novel Porgy by DuBose Heyward (also a white man), premiered on Broadway in New York City in 1935. The opera *Margaret Garner* by Richard Danielpour and libretto by Toni Morrison (a Black woman), is based on Morrison's novel *Beloved* and premiered in Detroit in 2005. *Porgy and Bess* tells the story of two disadvantaged Black people in Charleston, South Carolina and has sparked controversy regarding authenticity and the ethics of writing about the struggles of Black people in America by those without personal experience with these issues. *Margaret Garner* portrays the horrific truths of slavery through the life of Margaret Garner, an enslaved woman who killed her child to save her from a life of slavery. This opera also portrays the life of a Black woman in America, in this case written by a Black woman. In this flash presentation, I illustrate the importance of authentic representation of Black characters are portrayed in each opera, and how these differences relate to the lived experiences of those writing the stories - that of a white man versus a Black woman who has direct connections to issues of race in America. This presentation argues for the importance of incorporating true Black stories and experiences into the representation of Black experiences to prevent stereotyping and provide authentic stories illustrating America's racial inequalities.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department Music Faculty Sponsor Monica Hershberger Funding Sources None

328 • From The Mother of Us All (1947) to Harriet Tubman: When I Crossed That Line to Freedom (2014)

Megan Mueller

Abstract

Composers and librettists of opera often seek inspiration from the life they know or the lives of others that peak their interest; they cite historical events such as the Underground Railroad and the Women's Suffrage Movement that are then re-lived on stage by the cast and its audience. Black Americans' unique experience of oppression in the United States took hold during the enslavement of Africans, reshaped during the Civil Rights Movement, and persists today through the Black Lives Matter Movement. Beyond the stories told in our American textbooks, there are Black women and Black feminists whose significance has been systemically erased. In my flash presentation, I will examine the representation of Black women from First Wave to Third Wave feminism in operatic settings and how their courage during monumental events have contributed to the diverse success in the present-day United States. My operas of focus are *The Mother of Us All* (1947), an opera about Susan B. Anthony which I will use as a testament to the exclusion of Black women from mainstream feminism during the First Wave, and *Harriet Tubman: When I Crossed That Line to Freedom* (2014), an opera that premiered during the Third Wave and symbolizes Black power both in the early and modern days of U.S. history.

Subject Category

Arts and Humanities Categories: Music Faculty Sponsor Department

Music Faculty Sponsor

Monica Hershberger Funding Sources None

329 • Examining the Experiences of Black Women in Opera and Black Women in Jazz

Erica Hoenig

Abstract

In my GREAT Day presentation, I focus on the relationship between black women in jazz and black women in opera. Although jazz and opera are two differing genres, black people have faced segregation as well as ostracization for entering the elitist white dominated opera scene, or for being apart of the genre created by their ancestors which is jazz music. Dating as far back as the time of Elizabeth Taylor-Greenfield and Sissieretta Jones, black women in opera had very limited opportunities to perfect their art like white opera singers had and were constantly compared to female white opera singers or nicknamed in ways that dehumanize them with Sissieretta Jones being dubbed "The Black Patti" and Elizabeth Taylor-Greenfield being dubbed "The Black Swan". When compared to the struggles black women in jazz faced, although these singers did have a little more opportunity as it was "socially acceptable" for them to sing jazz, their struggles laid in how sexualized black women in jazz were with Billie Holiday being seen as a sex object and Mary Lou Williams, a black jazz pianist being sexually assaulted on the way to a recording session. When viewing the struggles faced by the women of these genres, I argue that they faced differing kinds of segregation, racism, and ostracization by either trying to make their way in a white high-art form, or by going against this high art-form by performing jazz which was seen as a low-class style of music.

Subject Category

Arts and Humanities Categories: Music Faculty Sponsor Department Music Faculty Sponsor Monica Hershberger Funding Sources None

330 • Camilla Williams: Opera Singer and Civil Rights Advocate

Vanessa Urbina

Abstract

Camilla Williams was born on October 18, 1919. She was an American opera singer who became the first African American woman to sing a lead role with a major United States opera company. She was mentored by Geraldine Farrar, a respected opera singer who starred in the Metropolitan Opera Company's production of Puccini's *Madama Butterfly* in 1944. Two years later, Williams made her professional opera debut as Cio-Cio-San in the New York City Opera Company's *Madama Butterfly* production.

Not only was Williams a very successful opera singer, but she was also heavily involved with the Civil Rights Movement. Her career as an opera singer and her involvement with the Civil Rights Movement go hand in hand. She married civil rights lawyer Charles T. Beavers who worked closely with prominent leaders such as Malcolm X. In 1963, Williams went on to sing the National Anthem at the Lincoln Memorial where Martin Luther King, Jr gave his famous "I Have A Dream" speech. In my presentation, I plan to highlight Williams' role as Cio-Cio San and how people of color are often used to depict other people of color, and the controversies surrounding a Black woman playing a Japanese woman opened conversations about cultural appropriation. I also plan to highlight how her career as an opera singer gave her exposure to her talent as well as showing the public her beliefs by fighting for Civil Rights.

Subject Category

Arts and Humanities Categories: Music Faculty Sponsor Department Music Faculty Sponsor Monica Hershberger Funding Sources

3H: Women's & Gender Studies Capstone Projects Session 2

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 203

Session Chair

Caroline Woidat, English and Women's and Gender Studies

262 • Black Sustainability: Intersectional Community Approaches S

Yarold Bautista Martinez

Abstract

Sustainability rejects universals and binaries. A region's actions cannot be pinned as either completely unsustainable or sustainable; instead, sustainability functions both as a scale and an index. One aspect of sustainability which is often forgotten is the locality component, which in turn emphasizes the specific needs of a community and the tangible sustainable practices that its members can do and aim to engage in. Communities often differ in climate, ecosystems, social systems, and socioeconomic opportunity; as a result, communities tend to vary in how they conceptualize progress and how they approach action plans and strategies. To understand black conceptualizations of how societies and communities can become more sustainable, I will research programs, initiatives, and objectives initiated by people of color that have impacted their communities, with a particular emphasis on those initiated by women of color. Using sustainability and black studies frameworks, I will evaluate the ideas, initiatives, and goals set out by these communities and thematically categorize them based on the areas of sustainability that were engaged. Using qualitative content analysis, I will review the scholarship addressing the sustainability and social state of the regions referenced, and map these approaches in the greater context of how they conceptualize sustainability and the region's progress towards achieving their goals.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women's & Gender Studies Faculty Sponsor Maria Lima Funding Sources None

259 • Resource Racism

Chloe Willson

Abstract

The level of resources provided to students in schools varies based on the area that the school is in and what students are attending these schools. In this project, I will dive into the stark differences seen throughout the different school districts, explicitly comparing inner-city schools in Rochester and their neighboring suburban school districts; areas of resources available to struggling students. More specifically, my capstone will paint a picture of how intersectionality is intertwined throughout this topic and the results show how components such as race, class, and gender have a direct effect on resource availability, for students with possible learning disabilities or even students struggling with mental health. The need for assistance from their educators is immense and it is clear that minority students who reside in the innermost parts of the city of Rochester are not able to receive that help as quickly as others. I will dissect these disparities through a review of academic literature and shine a light on the hazy topic that is resource disparity in the education system.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department Women and Gender Studies Faculty Sponsor Maria Lima Funding Sources None

137 • History of Reproductive Injustice

Helena Henry

Abstract

The United States healthcare system has been unequivocally racist and sexist towards Black women. This has induced trauma to the point where most Black women do not have a primary healthcare provider. This predicament is most prevalent in reproductive and sexual healthcare for Black women. Disparities exist in every aspect of Black women's access to sexual healthcare. The majority of contraceptive deserts exist in Black communities, and Black women are two to three times more likely to die during childbirth than white women. These problems are invisible to those who are not impacted by them. This is due in part to the lack of education involving the historical context of how Black women were experimented on during slavery and the long history of forced sterilization they endured. This information is necessary to understand why there is mistrust in the medical field by Black women. To understand their trauma and come to a solution on how to fix the flaws within the medical system, we must understand how and why it became this way. I will be providing a structured timeline on the history of how and why the institution of reproductive healthcare has failed Black women, and why it is still impacting them today.

Subject Category

Arts and Humanities Categories: History

Faculty Sponsor Department

Women and Gender Studies

Faculty Sponsor Maria Helena Lima Funding Sources

None

271 • Colorism within the Black Women Community

Natasha Frank

Abstract

Who are we, where did we come from, and how can we change? Being an African American individual today, it is not only imperative to your identity and what you portray yourself but also knowing who you are and where you fit in. My project will center on how black women are discriminated against by both outsiders and members of their own community based on skin tone. In terms of colorism's role in the prejudice against people of color inside their own communities, I want to draw attention to the discrimination committed by black women themselves against other black women. Although black women experience colorism in the black community, black men seem to be blessed with a different scale. The media, popular culture, education, books, and articles have all depicted colorism. Both Latinxs and African Americans continue to experience significant effects from colorism. There needs to be a solution to breaking this cycle of colorism. This will perhaps be a way to end white supremacy.

Subject Category

Interdisciplinary and Other Categories: Women and Gender Studies

Faculty Sponsor Department

Women's & Gender Studies

Faculty Sponsor Maria Lima Funding Sources None

3I: Edgar Fellows Panel 9

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 204 Session Chair Lisa Meyer, Sociology and Edgar Fellows

181 • A Geologic Analysis of the Northeastern Conesus Lake Watershed and Soils 💋

Katherine Burns

Abstract

This research aims to analyze the impacts of the northeast subwatershed that is the main source of sediment and water delivery for the northeastern basin of Conesus Lake. The sediments in the north Conesus Lake basin are distinct from the rest of the lake. Using ArcGIS and LIDAR, the northeast watershed was mapped using the New York State GIS Program Office data. From the bedrock and surficial geology of the watershed, three locations along the northeast stream input were selected for soil core analysis. A sedimentary core from a single location in the north basin was used for comparison with the soil cores from the northeastern subwatershed. Using techniques of smear slides, X-Ray Diffraction (XRD), X-Ray Fluorescence (XRF), and Scanning Electron Microscopy Energy Dispersive Spectroscopy (SEM-EDS), this study characterizes sediment delivered to the north basin of Conesus Lake by direct comparison to subwatershed soils in the mapped northeastern watershed.

Results indicate that the compositions of the subwatershed soil and the lake sediment are compositionally consistent, while some anthropogenically contributed elements show variation in distribution. Concentrations of dolomite were found in the soil and lake cores as a detrital mineral, while calcite appeared authigenically in both sets of cores. Proportions between the two minerals in the soil cores were used to make inferences about sediment transport and in situ precipitation of sediments in the lake. Soil diatoms only appear distal from the lake with low diversity and abundances. Similarly, aquatic diatoms are sparse stratigraphically in the north basin of Conesus Lake.

Subject Category

Science and Mathematics Categories: Geological Sciences

Faculty Sponsor Department

Geological Sciences

Faculty Sponsor

Jacalyn Wittmer Malinowski

Funding Sources

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

275 • Comedy Through the Ages

Kay Nocerino

Abstract

This presentation is a look into the history and evolution of comedy in the theatre world. The specific styles of theatre being discussed will be Ancient Greek comedies, Ancient Roman comedies, Shakespeare comedies, Commedia dell'Arte, comedy of manners, sentimental comedies, absurdist comedies, dark comedies, musical comedies. The goal is to see how the world around us affected the things we found funny. Looking at these styles all at once will help us to see how comedy has changed but also how it has stayed the same. There will also be a performance done on May 8th at 7:30 in the Brodie Hall Studio. This performance will include scenes from each style of comedy that will be presented. Hope to see you there!

Subject Category

Arts and Humanities Categories: Theatre Faculty Sponsor Department Music and Musical Theatre

Faculty Sponsor

Rachel Solomon Funding Sources None

283 • Alice By Heart: A Journey Through the Stages of Youth, Love, and Loss

Marion Avila

Abstract

Just as opera once took Europe by storm, musical theater has gained immense popularity over the past decade or so. I believe that this is due to the ability of musical theatre to identify with and reflect the values and life experiences of the younger generation. *Alice By Heart*, a 2012 folk-rock musical by Duncan Shiek and Steven Sater, uses the story of "Alice in Wonderland" to do just this. *Alice By Heart* portrays a young and relatable protagonist, Alice Spencer, learning to face her own maturity as she copes with the trauma and grief that comes from saying goodbye to her childhood best friend, Alfred. This musical not only explores growing up and grief as abstract concepts, but also mental health and trauma as a whole, something that almost all young people today have or will struggle with as they move into adulthood. My project utilized a multidisciplinary approach to prepare and present a showcase of musical selections from the show that represent Alice's emotional journey. I further explore the elements of trauma, grief, and adulthood and how these forces act on the characters of the show in my accompanying paper.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department Music and Musical Theater

Faculty Sponsor Joan Floriano Funding Sources None

3J: Chemistry Session

3:15-4:30pm, Wednesday, 26 April 2023, Welles 115 Session Chair Jeffrey Peterson, Chemistry

133 • Leveraging Third Generation DNA Sequencing Technology to Explore Role of Epigenetics in Round Scad Fish under Global Climate Stress

Ashley Felber, Owen Frank, Sophia Altman

Abstract

Global climate change has been a recent pressing issue that has been seen to have environmental impacts on various ecosystems. Such environmental changes induce stress-related heritable traits without changes to the genome's coding, a concept known as epigenetics. DNA methylation plays a key role in these cellular responses to environmental stress. The Round Scad fish is an affordable source of protein for common citizens in the Philippines, but is currently facing rapid decline both in population and average 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 epigenetic response to stress due to global climate change. Samples of fish DNA from the Philippines were collected and isolated. Using nanopore MinION, a portable third generation DNA sequencing technology, we are able to obtain initial DNA sequences. This technology has the advantage of directly identifying methylated nucleotides using built in softwares. Here, we shall report on the initial data comparing it with DNA methylation patterns in stress response genes of the model organism, Zebrafish. We anticipate that long term findings from this project will provide information critical to managing Round Scad and other marine fish facing similar environmental stressors.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department Chemistry Faculty Sponsor Salvador Tarun Funding Sources Sorrell Chesin '58 Research Award, Other Source of Support

227 • Investigating the Impact of SARS-CoV-2 Spike Protein-Coated Gold Colloid on Reversible Aggregation: A Study of Nano-Size Dependence and the Influence of ACE2

Madison Kieft

Abstract

In our research we attempted to observe the behavior of SARS- CoV-2, also known as the virus of COVID-19, spike protein (s-protein) over nano-gold colloid under the presence of ACE2 (angiotensin converting enzyme 2). ACE2 is known to bind the s-protein and facilitate infection. We prepared the s-protein coated gold-colloid ranging between diameter, d=10 nm and 100 nm. The SPR (Surface Plasmon Resonance) band was found to be sensitive to the aggregation and exhibited red shift at pH ~3. The peak of the SPR band was monitored alternatively at pH ~3 and pH ~11 repeatedly for 10 cycles. As for d >30 nm, reversible aggregation was enhanced as an effect of ACE2. Currently, we are investigating the temperature dependence of the reversible aggregation. SERS (Surface Enhanced Raman Spectrum) are currently being collected and analyzed.

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)

246 • Why We Should Care About G4 DNA

Alexander Michaels, Sameela Haidari, Courtney Fetzer

Abstract

G-quadruplex (G4) DNA are non-canonical higher order DNA structures formed from guanine rich sequences, made up of stacked G-tetrads stabilized by non-Watson-Crick (Hoogsteen) base pairing and K+ ions. G4 is known to have significant impact on various cellular processes including DNA recombination, replication, initiation, and repair. In recent years the scientific community has gathered an increase interest in the study of G4. This is due to its potential as an anti-cancer therapeutic agent. Through this presentation, we seek to explain the basis behind this idea. Additionally, the progress of the McKnight laboratory will be detailed. In this work, a variety of G4 structures were investigated. This was done by probing the G4 structures with a variety of known and novel compounds such as quinacrine, TMPyP4 and NDI derivatives. Using the biophysical techniques of isothermal titration calorimetry (ITC), fluorescent displacement, thermal melting, and circular dichroism (CD) spectroscopy, the binding characteristics of these compounds to G4 DNA were investigated. If a compound can successfully bind to and stabilize G4 structures gives hope to be used as an anti-cancer 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), Sorrell Chesin '58 Research Award

285 • Protein Corona Formation and Aggregation Process of Amyloid beta 1-40 Coated Gold Nano-Colloids

Eli Barbour

Abstract

The nano-gold colloid aggregates ranging between 10 nm and 100 nm in a diameter (d) were formed by externally and stepwise inserting Amyloid beta 1-40 peptide (Ab1-40) up to ~2 nano moles with ~10 pico moles increment under pH ~3.8 at 25 ± 0.3 oC. The detailed investigation process of the protein corona formation and building of gold colloid (d = 20 nm and 80 nm) aggregates were confirmed by the red shift of the absorption of Surface Plasmon Resonance (SPR), lpeak, as a function of the amount of Ab1-40, C(Ab1-40), and the lpeak as a function of C(Ab1-40) was explained by a sigmoidal plot describes a rise and an asymptote The extracted parameters proposed two different aggregation processes of Type I observed for d = 20 nm and that of Ttype II observed for d = 80 nm. The Surface Enhanced Raman Scattering (SERS) imaging is in progress to capture the conformational information of the peptides forming the aggregates.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Kazushige Yokoyama

Funding Sources

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

223 • An Approach for In-Situ Detection of Amyloid Fibril Formation by Surface Enhanced Raman Scattering

Joshua Thomas

Abstract

The attempt at in-situ detection of externally initiated gold colloid aggregates in the middle section of the hippocampus of the Long Evans Cohen's Alzheimer's disease(AD) rat model has been conducted through the Surface Enhanced Raman Scattering (SERS) method. A significant number of modes that were previously reported in SERS shifts for Alzheimer-diseased rats and human brain tissue, implying the presence of amyloid fibrils (Amyloid fibrils are the hallmark biomarker protein for AD). In comparison with existing methods: the amyloid fibrils with beta-sheet conformations identified previously in AD mouse/human brain tissues were involved in a formation of the gold colloid aggregates.

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)

3K: Mathematics Session

3:15-4:30pm, Wednesday, 26 April 2023, Welles 117 Session Chair Caroline Haddad, Mathematics

216 • Inverse Problems in Finance

Emily McNeil

Abstract

Inverse problems are widely used in several disciplines. In particular, inverse problems have a very important application in finance. We solve the following inverse problem: given the values of an investment over time, calculate the variable interest rates over time. We solve this problem by using several methods and present numerical implementations of our solutions using MATLAB.

Subject Category Science and Mathematics Categories: Applied Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Andrzej Kedzierawski Funding Sources

None

217 • Eigenfaces: A Linear Algebra Approach to Facial Recognition

Ryan Mitchell

Abstract

Facial recognition is a versatile tool that can be used for surveillance, criminal identification, and even unlocking your phone. Software for face detection is often developed with advanced machine learning techniques. However, some of the same goals can be achieved with the use of linear algebra.

One method of facial recognition called "eigenfaces" can be used to create an algorithm that uses a large database of stored images and eigenvalues of vectorized image matrices to identify an individual in the database fairly accurately and efficiently. The method is most effective when a larger database of images is available for the algorithm to test images against, for example, the Yale Face Database which includes 165 images. Most recently, this method was used to accurately identify 50 members of the SUNY Geneseo track and field team with excellent results.

If time permits, an exploration into the method of Singular Value Decomposition will be discussed to further increase the effectiveness of the algorithm.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Caroline Haddad Funding Sources None

324 • Denoising of Audio Signals using Wavelet Transformation

Andrew Mosbo, Michelle Gagliardo Error! Bookmark not defined.

Abstract

Audio signals are simply sound waves. Microphones or other audio recording devices have a 44.1 kHz sample rate. This means that a device takes 44,100 samples a second of the sound. This turns a continuous wave into a discrete wave. It is obvious that the quality of recording is important. With some audio, there can be noise. Noises can have different sources, such as electronic noise and acoustic noise, but have further classifications such as white noise and narrowband noise. How do we remove it? Well, there is a way using discrete wavelet transformation to filter out the noise. With

these come different thresholding methods. Which methods work best with which noises? We can measure that using S/N, or signal-to-noise ratio.

Subject Category Science and Mathematics Categories: Applied Mathematics Faculty Sponsor Department Mathematics Faculty Sponsor Caroline Haddad Funding Sources None

347 • The History of the "t-Test" in Statistics

Harrison Dignan

Abstract

A t test is a statistical test used to compare the means of two groups, discovered in the early 1900s. The results of a t test help mathematicians accept or reject a hypothesis. This paper goes into depth on the history of the t test.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

3L: Biology Session 3: Flash Presentations

3:15-4:30pm, Wednesday, 26 April 2023, Welles 119 Session Chair Mackenzie Gerringer, Biology

37 • Science Communication Microcredential Project Lightning Talks

Chryssanthi Tzetzis, Emily McMahon, Ashleigh Cummings

Abstract

Geneseo's new microcredential in Science Communication offers students the opportunity to engage with scientific topics and extend their knowledge and findings into the community at large. In this lightning talk panel, students will share their ongoing microcredential projects on a variety of topics of their choosing. Projects include art exhibits, brochures, and children's workbooks that communicate science in fields such as dentistry and marine biodiversity. The panel will then feature a short open Q&A regarding the Science Communication microcredential program.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Mackenzie Gerringer Funding Sources None

149 • Bosmina longirostris of Conesus Lake and its Feeding Preference

Jacob Pueschel

Abstract

Bosmina longirostris is relatively small cladoceran, abundant in Conesus Lake. With its translucent body, the feeding habits of this animal can be easily studied through microscopic fluorescent observation of the gut. One of Conesus Lake's dominant cells, a roughly 1-micron photosynthetic bacterium known as Vulcanococcus, was used to study ingestion and clearance rates in comparison to latex beads of equal size (1-micron size). Members of the Vulcanococcus lineage have been shown to produce cyanotoxins. Using food substation and dialysis tubes, we showed Bosmina has a 5-fold preference for the one-micron latex beads over the Vulcanococcus, based on clearance rate. These results suggest that the ability of Bosmina to feed on Vulcanococcus is suppressed, but so far, we do not have experimental evidence to explain this phenomenon. This research was funded by an undergraduate summer fellowship during the summer of 2022.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Isidro Bosch Funding Sources Geneseo Foundation Undergraduate Summer Fellowship

3M: Music, Home and Family

3:15-4:30pm, Wednesday, 26 April 2023, Welles 128 Session Chair James Kimball, Music

136 • Growing Up Turkish

Destina Tas

Abstract

This presentation is about my experiences growing up in a Turkish family where music played a large role. It all began with lullables and my dad singing me to sleep and as I got older music become more present in my life. Around the age of 5 I began Turkish school where I learned poems and Turkish children's songs. In present day I am thankful for the presence of Turkish music and culture in my life. A large part if this goes to my father who would always sing to me and still loves to perform his family and friends.

Subject Category

Arts and Humanities Categories: Music Faculty Sponsor Department Music and Musical Theater Faculty Sponsor James Kimball Funding Sources None

30 • Music That Fuels a Family

Brooke Woodard Abstract This is part of a panel presentation about music from home. An essay about music through different generations and how the music from each generation carries on to the next. Simple things like dancing in the kitchen have roots deeper in the ground than one would think. Even if the religious and folk music has fizzled out, even if no one in the family can play the banjo anymore, even if the family that has started the musical traditions are no longer here... the music that fuels the family is still alive and well, spilling through each generation to come.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department Music and Musical Theatre Faculty Sponsor James Kimball Funding Sources None

201 • Growing Up with Woodstock

Regan Russell

Abstract

Woodstock has gone down in history as three days of peace, love, and music, but the location of this historical event has been forgotten by many. Bethel, New York was the host of the original Woodstock and has also been my hometown for the past 18 years. The impact of this event on the town lives on today. Woodstock has continued to shape Bethel and its residents since 1969.

Subject Category

Arts and Humanities Categories: Music

Faculty Sponsor Department

Music and Musical Theatre

Faculty Sponsor

James Kimball

Funding Sources None

30: Humanities and Languages Session 1

3:15-4:30pm, Wednesday, 26 April 2023, Welles 132 Session Chair Brian Barnett, Philosophy

1 • A Defense of Pastafarianism: An Analysis Into the Discrimination Against Atheists and a Proposed Solution

Aspen Griffing

Abstract

I attempt to bring to the forefront a group that is discriminated against but their discrimination is not known very well, being Atheists. I address how Atheists have been discriminated against in the past and currently through a linguistic, legal, and social lens. I then introduce Pastafarianism, a satirical religion that I believe has the ability to address this discrimination through what I dubbed the "Flying Spaghetti Monster test". I go through how it works, its uses, and possible limitations, and I call the reader to check their own biases using the test.

Subject Category

Arts and Humanities Categories: Philosophy Faculty Sponsor Department

Philosophy

Faculty Sponsor Brian Barnett Funding Sources None

334 • Selling Out Nature: How Romanticism has been Corporatized Within Contemporary Media

Casey Sherman

Abstract

Romanticism is one of the most highly claimed literary themes within modern study, as it is representative of the human spirit and its connection to the world around us. Unfortunately, however, modern media has not respected the importance of this theme or its legacy. Rather than a means to heighten our connection with nature, contemporary media has often been more than willing to use Romanticism as a tool to line their pockets.

From dry one-liners by Thoreau to barely enjoyable Triple-A and Blockbuster titles, Romanticism deserves better. Thus, its modern day issues should be addressed and ultimately corrected.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Funding Sources None

22 • How and why learning a language

Florence Julia

Abstract

My presentation will be in three parts: - First , why learning a language ? -Second , all the benefits you can get from it -Third , practical advice on how to do it **Subject Category** School of Education Categories: Adolescence Education: English **Faculty Sponsor Department** Global Languages and Cultures **Faculty Sponsor** Jasmine Tang **Funding Sources** None

3P: Life and Death in Ukrainian Wartime Fiction: Reading Andrey Kurkov's Grey

Bees (Flash Presentations)

3:15-4:30pm, Wednesday, 26 April 2023, Welles 134 Session Chair Sonya Bilocerkowycz, English

318 • Against Inspiration, Against Obstacle: Disability as a Single Facet of a Multi-Dimensional Life in Andrey Kurkov's *Grey Bees*

2023 Geneseo Recognizing Excellence Achievement and Talent Day • 17th Annual

Nina Fichera

Abstract

As readers, we often expect that when a character has a disability, that will be the primary focus of their story, or else will be an "obstacle" for them to overcome. Andrey Kurkov's novel *Grey Bees*, however, frames the main character's disability as a simple fact of his life. In this paper, I analyze how the novelist does not use the main character's disability to make him more inspirational, and does not use his disability as an obstacle that must be overcome to gain happiness. Kurkov's inclusion and description of the main character's disability as a single aspect of his life allows room for a more realistic, multi-dimensional portrayal.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

319 • Putin' on a Blitz: How Political Discourse in Media Shapes Character Interactions in Andrey Kurkov's Grey Bees.

Spencer Jurgielewicz

Abstract

Many symmetrical and asymmetrical factors shape warfare and its outcomes, including political discourse in media. This impact is seen in the novel Grey Bees by Andrey Kurkov (translated by Boris Dralyuk), which follows a Ukrainian man, Sergey Sergeyich, who lives in Donbas in the "gray zone," a sort of no man's land between the Ukrainian and Russian positions. Throughout the novel, Sergeyich attempts to stay apolitical and out of conflict; however, no matter where he goes, or who he encounters, the politics of the war follow him. In this brief analysis, I examine how characters who meet Sergeyich stereotype him, put him down, and even discriminate against him, and how these interactions reflect political discourse present in television and other media within the text. While this is a fictional story set in wartime Ukraine, I argue that its portrayal of the media's effects on interpersonal encounters is worthy of study for all as it could have detrimental global impacts, especially within the context of the current crisis in Eastern Europe.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

320 • Title: The Grey Man; The resilience of Sergey Sergeyich in Andrey Kurkov's Grey Bees

Jonathan Ackles

Abstract

Abstract: This paper is interested in how resilience and adaptation manifest in a character who does not consider himself a war refugee, despite the fact that other people do perceive him as such. Sergey Sergeyich, the protagonist in Andrey Kurkov's novel Grey Bees, displays resilience in multiple ways. Each strategy is unique to the particular settings and social contexts he encounters during his journeys, but there is a recurring theme in which Sergeyich's flexibility is equated with "greyness"—a mutable, unassuming color. Importantly, I argue that Sergeyich's resilience is depicted as an inner strength and is not dependent on physical abilities.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

323 • Forced Open Doors: The Cross-Cultural Male Expectation of Female Hospitality

Sara French

Abstract

Criticism is rightly directed at narrative in which female characters inhabit assisting or supportive roles to the male protagonist's adventure, rather than existing as full characters themselves. In Andrey Kurkov's Grey Bees, the male protagonist, Sergey Sergeyich, travels from the grey zone in the Donbas region to the Crimean Peninsula. During his journey, he meets three women in three different villages, each of whom welcome him into their home, because it was what was expected of them. Whether the obligation is undergirded by emotional or cultural-norms, these women feel the need to look after Sergeyich. I argue that Kurkov's portrayal invites readers to question why and where these expectations derive from, and how they reflect intersectional concerns across Ukrainian and Crimean Tatar cultures.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

331 • Kurkov's Food for Thought

Julia Yakowyna

Abstract

Andrey Kurkov's novel Grey Bees is not only a story of living through war time, but a look into the depth of Ukrainian culture, identity, and traditions. Kurkov emphasizes food and shared meals as one prominent cultural element that created lasting impacts on the novel's characters. In this essay, I analyze the importance of traditional foods and shared meals, and how they are able to create character depth and growth within the protagonist Sergey Sergeyich. Throughout the novel, Kurkov depicts Sergey on a journey through "The gray zone" of Ukraine, or the zone of hostilities in Eastern Ukraine, into a smaller central Ukrainian village, and finally into Crimea. As we watch Sergey move through these different regions, we see him share both traditional Ukrainian cuisine and traditional Crimean Tatar cuisine with the people he encounters. These encounters create complex shifts in Sergey's emotions and decisions, allowing readers to look deeper into the central role of food in Ukrainian cultural identity.

Subject Category

Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

332 • Xenophobia and Acceptance: Belonging Concerns More Than One Person

Anna Tessier

Abstract

Andrey Kurkov's novel Grey Bees follows the experiences of a politically neutral citizen who is at home in the "grey zone" between Ukrainian and Russian armed forces. But when the protagonist leaves the grey zone and travels into central Ukraine and later to Crimea, he faces varied levels of acceptance as an outsider. In this essay, I map the increasingly hostile behavior that the protagonist experiences on his journey, noting how no matter where he feels he may belong in the moment, the exclusive mindsets of others always dictate where he does and does not belong. I argue that Kurkov's depictions of xenophobia escalate throughout the novel, with such attitudes toward the main character first being exhibited by random individuals, and eventually by Russian occupying authorities in Crimea. The text invites readers to consider the real-world implications of both interpersonal and government-sanctioned exclusion practices.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

340 • "They Recruited my Bees?": Dreams as a Manifestation of Trauma in Andrey Kurkov's *Grey Bees*

Matthew Chudy

Abstract

On the outside, Sergey Sergeyich is a man making the most of his life despite the war raging around him: he tends to his bees and takes care of his home while bombs explode around him. On the inside though, a deep trauma remains. So how does Andrey Kurkov portray Sergey's lasting trauma in *Grey Bees*, even when Sergey himself does not see it? In recurring moments in the novel we see how Kurkov uses dreams to reveal the horrifying memories that torment Sergey, and how acting unaffected by the war does not mean you are not scarred. In this talk I will address how the experiences of war in Ukraine can appear in the night, and the effects it has on the people who suffer.

Subject Category

Arts and Humanities Categories: English

Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources

None

343 • Life-Long Terror: Societal and Psychological Effects of War in Andrey Kurkov's Grey Bees

Michaela Lewis-Hardies

Abstract

Popular retellings and depictions of war often focus on the physical aspects of it: the crumbling buildings and the lives lost. But Andrey Kurkov's *Grey Bees* shines a spotlight on the internal effects of how war can infiltrate a person's mind and the minuscule, unseen, and undiscussed ways it majorly impacts social interactions that aren't as commonly portrayed in media. Often happening in ways we do not expect. In this paper, I analyze how Kurkov depicts human

psychology and social interactions during wartime, focusing on the impact of tedious prolonged isolation, normalized routine violence, and lingering mental health concerns such as PTSD.

Subject Category Arts and Humanities Categories: English Faculty Sponsor Department English Faculty Sponsor Sonya Bilocerkowycz Funding Sources None

3Q: Sociocultural Mediators in Spanish: Integrative High-Impact Transformational

Experiences

3:15-4:30pm, Wednesday, 26 April 2023, Welles 138 Session Chair Susana Castillo-Rodríguez, Global Languages and Cultures

190 • Student Panel: Integrative Internship Experiences

Elizabeth O'Connell, Kaleigh Silverstein, Elinore Voss

Abstract

This faculty-sponsored presentation will highlight the experiences of students completing the Integrative Curricular Micro-credential: Sociocultural Mediator in Spanish. Micro-credentials are short, focused credentials that provide indemand skills, and experience. They can also offer a pathway to a certificate or an initial or advanced degree. Through organized internships, students are exposed to experiences beyond the classroom and they connect their academic knowledge/skills to the real world. In this session, students will present and reflect on how those transformational experiences have impacted their intellectual development and helped them identify personal/career goals. This semester, students have participated in internships with partners including Wadsworth Library and Cultures Learning TOGETHER, where they have applied their Spanish language skills and knowledge to a sociocultural experience.

Subject Category

Arts and Humanities Categories: Spanish

Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Susana Castillo-Rodríguez Funding Sources None

3R: Mock Trial Presents the Court Case of the Year

3:15-4:30pm, Wednesday, 26 April 2023, Bailey 246 Session Chair Pallavi Panda, School of Business

61 • Mock Trial Presents the Court Case of The Year: Ari Felder v. Koller Campbell Air LLC

Kya Primm, Samantha Kearns, Trevor Funcheon, Ethan Whitehead, Corina Tulevech, Rachel Jessie, Sash Satchell, Abigail Helmes, Emily Trabulsi, Matthew Messina, Benjamin Dammers

Abstract

Presented by the Geneseo Mock Trial Team, members of the club will perform an abridged version of Ari Felder v. Koller Campbell Air, LLC. This case began on July 4, 2021, when attorney Morgan Felder joined pilot Reese Campbell for a flight
over Basin Lake. After departing the Rapid River Valley Airfield, the aircraft deviated from its planned route and eventually crashed into the nearby Mount McIntosh. There were no survivors. Ari Felder—Morgan's spouse—has brought a negligence suit against Koller Campbell Air LLC, the company that owned the aircraft. Accusations are flying from all sides, and litigation looms. After the presentation, as a member of the jury, *you* can vote to determine if Koller Campbell Air LLC is liable for the crash after hearing the testimony from a variety of witnesses, or decide if there was another, superseding cause of the fatal crash.

The Mock Trial team is an award winning, student run club where students perform as attorneys and witnesses in a simulated trial based on the facts of a fictional court case. We attend competitions where we are tasked with presenting our side of the case against other schools to a panel of judges. Though technically a Pre-Law club, Mock Trial at Geneseo is open to all majors, no experience necessary! Students involved in Mock Trial are able to refine their public speaking, argumentative skills, and courtroom etiquette, as well as make lasting connections with students who share similar interests across the North East Region!

Subject Category

Interdisciplinary and Other Categories: Legal Studies Faculty Sponsor Department School of Business Faculty Sponsor Pallavi Panda Funding Sources Other Source of Support

Poster Presentations

11:30 am-1:30 pm Wednesday, 23 April, 2023, MacVittie College Union Ballroom

ANTHROPOLOGY AND SOCIOMEDICAL SCIENCES

148 • The Perception of Communication: The Ways Clinicians and Parents of Chronically III Children Communicate

Jenna Guyette

Abstract

Children with chronic illnesses are often exposed to many medical facilities and providers who must speak to them about their illness. Due to the sensitivity of the topic and the emotional strain, the communication can be weaker or strained from the physicians. The aim of this research was to determine how parents are the main information source and how these parents and other clinicians perceive the communication of the information provider as weak. The participants included three parents and two clinicians who underwent an interview and filled out a questionnaire about communication independently in connection with a child's illness (their own or those they have interacted with). Findings revealed that parents were the main source of information for children about their illness, not the physician, due to the age of their child, the scary atmosphere of doctor's offices, and trust in the parents. Additionally, all participants reported negative experiences with doctor communication, such as confusing medical jargon, not listening to concerns, lack of decorum and not trusting the patients, which suggests that doctors need more communication training. Finally, the interviews revealed high personal evaluation of the participant's communication skills but agreement with poor communication tactics in the questionnaire. Further research includes interviewing more people, including physicians and other members of the medical community to get a holistic view of the opinions of the public.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Anthropology Faculty Sponsor Jesse Bia Funding Sources None

75 • Improving Community Outreach on Oral Health in Underserved Communities

Alyssa Lee

Abstract

Oral health indicates an individual's overall health, well-being, and quality of life. Research overwhelmingly shows that practicing healthy oral hygiene habits and maintaining overall oral health is critical for individuals because it prevents oral diseases, which include dental caries, periodontal disease, tooth loss, oral cancer, and noma. Maintaining oral health by adopting healthy oral hygiene habits prevents these oral diseases, influencing individuals' overall health and potential to have healthy lives.

By evaluating the results from my Student Ambassadorship project, NYC Chinatown Smiles: Creating Accessibility to Oral Care, community outreach on oral health literacy in underserved communities must be improved. The objective of the project is to encourage healthy oral hygiene habits and promote oral health literacy in the Asian American and Pacific Islander (AAPI) community by providing free resources and access to oral care through community outreach by collaborating with local dentists, schools and organizations in New York City's AAPI community. This project was created because oral health within the AAPI community is overlooked due to the disparities that prevent them from accessing proper oral health care.

I wish to expand this project and extend community outreach on providing oral health resources and improving oral health literacy in other underserved communities facing alarmingly disproportionate rates of oral health disparities. Through analysis and review of the research and results of my project, I can reform and improve how community outreach is traditionally conducted and apply it to my project in the future.

Subject Category

Interdisciplinary and Other Categories: Sociomedical Sciences

Faculty Sponsor Department Anthropology Faculty Sponsor Melanie Medeiros Funding Sources None

213 • A Dangerous Childhood: Mortality Rates from Vaccine-Preventable Diseases in 19th and early 20th century Rochester, New York

Lauren Martin

Abstract

Diphtheria, tetanus, and pertussis (whooping cough) are all bacterial diseases that caused high rates of mortality during the 19th and and early 20th centuries. Diphtheria is caused by a strain of bacteria called *Corynebacterium diphtheriae*, tetanus is caused by *Clostridium tetani*, and pertussis is caused by *Bordetella pertussis*. For all three diseases, young children were at particularly high risk for infection and death. After the production of the DTaP and DtwP vaccines in the 1920's and their more widespread use in the 1930's, the rates for these diseases significantly decreased within the United States. This poster analyzes the effects of vaccinations on mortality rates associated with of diphtheria, pertussis and tetanus during the 19th and early 20th centuries in Rochester, NY. Methods include transcribing death records from Mt. Hope Cemetery in Rochester, New York, from the period 1837 to 1940. While today, most cases of diphtheria, tetanus, and pertussis are reported from developing countries, pertussis rates have increased in the U.S. in recent years due to under-vaccination, and it is important to remember the dangerous history of these now vaccine-preventable diseases.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department Anthropology and Sociomedical Sciences Faculty Sponsor Kristi Krumrine Funding Sources None

236 • Cholera, Water Sanitation, and Socioeconomic Status in 19th Century Rochester, New York

Lora Odeh

Abstract

The completion of the Erie Canal in 1825 allowed for the rapid expansion of the City of Rochester. The creation of the Erie Canal led to the spread of infectious diseases, especially cholera, as German and Irish immigrants moved west in search of job opportunities. As the city of Rochester grew, so did cholera and other waterborne diseases. Many of these immigrants lived in overcrowded public housing, where infectious diseases like cholera were rampant, which resulted in the stigmatization of these groups. Using historic records from Mt. Hope Cemetery, this study explores how cholera and later water sanitation projects affected lower socioeconomic status individuals in Rochester during the 19th century.

Subject Category

Interdisciplinary and Other Categories: Sociomedical Sciences

Faculty Sponsor Department Anthropology and Sociomedical Sciences Faculty Sponsor Kristi Krumrine

Funding Sources

232 • A General Mortality Analysis in 19th and Early 20th Century Rochester, New York: "Exploring Sex-Based Differences in Childhood and Adolescent Mortality Rates Across Age Groups"

Chizoba Okorie

Abstract

This poster presentation was completed by Chizoba Okorie, under the guidance of the Faculty Advisor, Professor Kristi Krumrine, in the Department of Anthropology and Sociomedical Science.

Abstract: This presentation represents the initial phase of a research study that explores health and disease in 19th-and early 20th-century Rochester. The research focuses on the prevalence of historic diseases through the transcription and analysis of cemetery records for Mount Hope Cemetery. The purpose of this study is to compare mortality rates in childhood and adolescence across different age groups of males and females. The study investigates the average ages at death, as well as potential factors that may have contributed to mortality rates in these age groups. The study also seeks to identify the variety of factors (social, economic, behavioral, and environmental) that may have contributed to these diseases, as well as possible health disparities. Data from various sources, including vital statistics records, census data, and other health-related surveys, are used in the analysis. Overall, the main goal of this presentation is to emphasize on the importance of understanding the factors that contribute to childhood and adolescent mortality rates, as well as the need to address the underlying causes of these disparities.

Subject Category

Social Science Categories: Anthropology

Faculty Sponsor Department

Anthropology and Sociomedical Science **Faculty Sponsor**

Kristi Krumrine Funding Sources Other Source of Support

115 • Infant and Maternal Mortality in 19th and 20th Century Rochester

Sadie Stadler

Abstract

In the early 20th century, mother and infant deaths commonly occurred during or shortly after childbirth. This study explores issues relating to premature birth, sanitization practices, and puerperal fever, through a combination of background research and analysis of transcribed death records from Mount Hope Cemetery, in Rochester, NY. In this study, I will look for patterns in causes of death in relation to childbirth for both mothers and babies, throughout the 19th and early 20th centuries. With a greater understanding of germ theory and proper medical practices by the early 20th century, I expect to see decreased rates of death for both mothers and infants. I will also utilize census and other records through Ancestry.com in order to explore fertility, childbirth and child loss and its causes in these Rochester families.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Anthropology Faculty Sponsor Kristi Krumrine Funding Sources None

BIOLOGY

256 • Development of Molecular Markers from the Transcriptome of an Ant-Mimicking Spider for Population Genetic Analyses

Anna Schell

Abstract

The ant-mimicking spider, Myrmarachne formicaria, is a species of jumping spider that is native to Eurasia but has been sighted in North America starting in 2001. This spider is distinctive because of the way it imitates ants by moving its front two legs around like an ant's antennae. As it is not native to North America, it must have been introduced to the country, but there is not currently enough information to determine whether there was only one introduction event or several different events. We can distinguish between these scenarios and learn more about this spider's dispersal history by analyzing patterns in its genetic variation.

Previous research analyzed mitochondrial DNA from the spiders, which showed very little genetic variation within the introduced population. As an alternative to mitochondrial DNA, the transcriptome can be analyzed to find more potentially variable genetic markers. I am searching the transcriptome for repetitive sequences, which represent microsatellites that may be useful as genetic markers as they can be highly polymorphic within species. I will be designing primers to amplify these repetitive sequences through PCR, and if the primers perform well, they can be used to genotype individual ant-mimicking spiders and quantify genetic variation. These markers will be useful tools for population genetic analyses of the spiders both in their native and introduced regions.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Jennifer Apple, Josephine Reinhardt

Funding Sources

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

54 • Forcing Chaf1b Expression Until the End of Eye Development in Zebrafish

Holly DeYoung, Abby Moziak, Ryan Pinto, Oliva Hernick

Abstract

Previous research has found that Chaf1b is subunit B of Chromatin Assembly Factor 1. Although its function is not fully understood, it is known to aid chromatin assembly by facilitating histone placement (Fischer). Some Zebrafish have a good effort (gef) mutation in which the small eye phenotype is observed. Zebrafish exhibiting this lethal mutation lack the ability to make the Chaf1b protein. Without the addition of these certain histones, cell death occurs about 3 days post fertilization (Fischer). Note that 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 are able to rescue mutants for a few days (Fischer). Our hypothesis is that Chaf1b's sole function is histone loading during development. We are going to investigate this by conducting transgenesis and forcing Chaf1b gene expression just past 5 dpf. If our hypothesis is rejected, the cells 5 dpf will still start to show some abnormalities such as altered function or cell damage. A way to test this would be to compare the number of cells in a wildtype versus a mutant. If there are many more cells in the wildtype, it can be concluded that Chaf1b plays another important role other than histone placing such as histone remodeling. If our hypothesis is not rejected, the cells 5 dpf will resemble the wildtype and be perfectly fine.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor DepartmentBiologyFaculty SponsorTravis BaileyFunding SourcesTRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

242 • Validating Zebrafish Chaf1b Antibody

Brianna Donlon, Stephen Welsch, Emma Hatch

Abstract

Zebrafish embryos that are homozygous for gef mutant alleles experience a small-eye phenotype, due to a coding change in the chaf1b gene that results in a prematurely truncated protein. It's thought that the Chaf1b protein is required for all dividing cells to survive the DNA replication phase of the cell cycle. Contradicting these findings, the proliferating cells of the gef mutant embryos do not start to prematurely die until they are two days old. One question of delayed death in zebrafish is whether the normal protein can be provided by the heterozygous mother. If so, this would account for how the dividing cells are surviving for days in the developing mutant embryo. This study will test for Chaf1b protein in cells dying during the proliferation step in an attempt to detect Chaf1b protein. It is hypothesized that surviving, not dying, retinal cells may have the normal Chaf1b protein which could be detected by anti-Chaf1b antibodies. This research will verify this question by using antibodies against Chaf1b protein. Thus, validation of Chaf1b antibodies will be analyzed with a Dot Blot to confirm the efficiency of the antibody used in the Western Blot. If the antibody is valid, it is hypothesized that Dot Blot results will display wild-type zebrafish embryo extract glowing under chemiluminescence through anti-Chaf1b immunoprecipitation, while there will be reduced levels of Chaf1b detected in 3 dpf gef mutant embryos.

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)

11 • Neurod4 Hybridization in Zebrafish

Juliana Flick, Katelyn Jacques, Brennan Wilcox

Abstract

Neurod4 is a protein-coding gene, also known as neurogenic differentiation 4. This gene occurs within the nervous system, specifically shown in the brain. Neurod4 helps control any extreme, rapid growth of the photoreceptors in Zebrafish's retina. Zebrafish have a very similar, yet not identical gene to humans, in which speaking, the research taken from Zebrafish can correspond to how Neurod4 impacts human retinol, and neuronal development. The Zebrafish used in this experiment are transgenic organisms, containing the Tg (neurod4: GFP). Transgenes are sections of genetic material used for genome modification of specific organisms Zebrafish are genetically manipulated to express Neurod4. It is assumed that Tg will share similar activity as the Neurod4 gene, and the transgene displays the same transcript expression as the endogenous gene. For Tg 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. The goal of this experiment is to find the distribution rate of the mRNA Neurod4 and whether it shuts down the access or enhancers, as well as if the Tg in zebrafish can be compared to the transcript expression of the endogenous gene. Also, where RNA is more localized, in the retinol or in the brain of the Zebrafish. As Neurod4 is being compared, the hypothesis could then be either accepted or rejected, by that determining the significance that it holds in zebrafish and humans.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Travis Bailey Funding Sources None

146 • Localization of Sonic Hedgehog Protein in Zebrafish Retina

Jacqueline Maloney, Muwafuq Ibrahim, Christopher Jung, Zee Ralph, Isabell Mathew Abstract

Zebrafish possess a unique ability to regenerate their retina when damaged; our objective is to gain a better understanding regarding retinal regeneration in zebrafish in hopes of eventually utilizing this information to promote retinal regeneration in humans. It has been shown that a protein, Sonic Hedgehog signaling protein (shh), plays a role in the differentiation of progenitor cells during eye development in zebrafish. Researchers have concluded that shh moves across the retina in a wave-like fashion during vertebrate development and regeneration. Studies have been conducted to see how the shh protein moves, but none have investigated the exact location that shh binds. We want to localize the shh protein in zebrafish during regeneration. Techniques such as immunohistochemistry, antigen retrieval and colocalization were used. Anti-Glutamine synthetase and anti-Glial fibrillary acidic protein were the antibodies used during these techniques to assess whether or not the shh is associated with müler glia cells in the retina. Our confocal microscope pictures depict promising localization information to see which specific cells Shh is associated with.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Travis Bailey Funding Sources None

35 • PCR Analysis of Transgenic Zebrafish Furthering Regenerative Research and Development

Abigail Shafer, Zoe Coutu

Abstract

Our goal for this project is to verify that the neurod4 gene was indeed passed down to future generations of zebrafish from the original transgenic fish. In order to correctly genotype the zebrafish used for regenerative research in the Bailey lab, DNA extraction and isolation, along with PCR analysis and gel electrophoresis are used. We are specifically amplifying the neurod4 gene responsible for regulation of neuronal development and differentiation. Using various polymerases purchased through the Geneseo TRAC Grant and multiple methods of experimentation, we have been attempting to amplify the specific region of the zebrafish genome that contains this gene which would allow us to genotype the fish correctly. These correctly genotyped fish could then be used for further research in regenerative and developmental biology 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)

162 • The Importance of Caf-1b and p53 in Zebrafish Apoptosis

Noe Stephens, Hannah Haws, Isabel Reitano-Stayer, Dhavan Brahmbhatt

Abstract

Chromatin assembly factor-1b (Caf-1b), one of the subunits of Chromatin assembly factor-1, is integral for retina differentiation in both humans and zebrafish. Fisher et. al found that apoptosis was stimulated in cells that lack Caf-1b at the S-phase check point by the tumor suppressor p53 as cells that lacked Caf-1b had a much higher expression of p53 then cells that contained Caf-1b. Fisher et. al proposed the model that Caf-1b is an inhibitor of p53 which stimulates apoptosis in the absence of Caf-1b (2007). However, it is not known what occurs when both Caf-1b and p53 are both removed. If we were to remove both Caf-1b and p53, we would expect that apoptosis would not occur in the embryo if the Fisher model were to be correct since although Caf-1b is not present, there is no p53 to stimulate apoptosis. We will accomplish this goal by using good effort mutants that lack Caf-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

Faculty Sponsor Department Biology Faculty Sponsor Travis Bailey Funding Sources None

237 • An Analysis of *Dolichospermum* in Conesus Lake S

Emma Belica

Abstract

The purpose of this research was three-fold. First, an analysis of long-term data was conducted to determine how the abundance of the cyanobacteria of the genus *Dolichospermum* changed historically since 1985 in Conesus Lake. Secondly, to look at the seasonality of the *Dolichospermum* blooms in the Summer of 2022. Third, to determine *Dolichospermum*'s Nitrogen-fixing activity based on analysis of the frequency of Nitrogen-fixing cells in the population (heterocysts). Long-term data shows *Dolichospermum* has increased in representation in recent years and in 2022 reached a peak biomass that represented 75% of all the cyanobacteria biomass and 56% of all the phytoplankton in Conesus Lake. We predict that we will see an increase in Nitrogen-fixing cells during this peak. This study is important because it shows an increase in the representation of a species of cyanobacteria that has the potential to form harmful algal blooms. A better knowledge of *Dolichospermum*'s population changes is important for public health and the safety of the public's drinking water supply.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Isidro Bosch Funding Sources None

117 • Evolution of the shoulder musculature in extant archosaurs

Caitlyn Dupont, Anna Green

Abstract

The purpose of forelimbs in nonavian theropod dinosaurs has long been a topic of investigation. Previous studies have reconstructed the forelimb musculature of these species based on the myology of extant archosaurs, but the evolution of the shoulder muscles has yet to be analyzed in a broad phylogenetic context, which limited their applicability to studies of whole-limb function. In this study, we investigated shoulder musculature across a diverse array of extant reptiles to gather insights into the evolution of these muscles in archosaurs. The prior reconstruction of the myology of the early theropod *Tawa hallae* from the Late Triassic of New Mexico provided a basis for the identifying variation in the taxa of interest. We gathered data from published studies on muscle origin and insertion sites in birds, crocodylians, lepidosaurs, and turtles, which represent the closest living relatives of nonavian theropod dinosaurs. Characters of different states were formulated to describe the attachment sites of each muscle. Taxa were then coded for these character states using the Mesquite program based on descriptions of the musculature in the literature. Preliminary results suggest a surprising amount of variation found in the morphology of some muscles, such as the origin of Triceps brachii and Trapezius. This variation between extant taxa will be analyzed using maximum likelihood to reconstruct the ancestral musculature in Dinosauria and allow testing of hypothesized functions of the shoulders and forelimbs in the future.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Sara Burch Funding Sources None

88 • Creating a 3D Biomechanical Model of the Forelimbs of a Weakly Flighted Bird

2023 Geneseo Recognizing Excellence Achievement and Talent Day • 17th Annual

Michaela Hall

Abstract

Tinamous are ground-dwelling birds that inhabit the neotropical regions of Central and South America. They are the only flighted ratites, the group of phylogenetically basal flightless birds including ostriches and emus. Their flight muscles are well developed, but while they are capable of flight, it is not preferred. They only do so rapidly and for short periods of time, as they have a low circulation rate which is insufficient for sustained activity. The study of the functional morphology and musculature of their forelimbs can help us understand morphological consequences of the loss of flight in ratites. These types of analyses require high-quality three-dimensional (3D) models of the forelimb elements in order to build advanced biomechanical models. To do this, we created 3D models of the bones of the forelimb of Little Tinamou(Crypturellus soui panamensis) from whole-body computerized tomography scans using the software 3D Slicer to segment detailed scans of each bone. These 3D models will then be used to create a 3D musculoskeletal model of the forelimbs in order to assess how the musculature of the forelimb reflects the weak flight capabilities of these birds. By analyzing the forelimbs of the tinamou, we can study the relationship between the musculature, bones, and function in this group of birds, which can provide insight on the evolution of flightlessness.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Sara Burch Funding Sources None

121 • Forelimb musculoskeletal modeling of Tyrannosaurus rex (Dinosauria: Theropoda)

Alexandria Scotti

Abstract

Tyrannosaurus rex is a bipedal species of predatory dinosaur that belongs to the family Tyrannosauridae. Tyrannosaurus rex is one of the largest theropod dinosaurs (approximately 12 meters in length) that ever existed and is well known for its forelimbs that were proportionally small for its size compared to those of other nonavian theropods. There is a lot of speculation about the function of the tyrannosaur forelimb, from use in prey capture to completely functionless, but it is unknown as to what they were actually used for. To better understand the potential function of the forelimb, three-dimensional (3D) musculoskeletal models are being created to investigate the potential movements and functions of the forelimb. Using computerized tomography (CT) scans of the forelimb bones, the arm was articulated using the 3D modeling software Maya and then transferred into OpenSim 4.4 where simplified muscles can be attached to the bone. Previous reconstructions of the forelimb musculature of Tyrannosaurus rex were used as a guide to determine the muscle attachment sites. Following the attachment of the virtual muscles, wrapping surfaces are being added to the model to give the muscles realistic and lifelike paths around the bones. Once the model is fully built and the muscle paths completely adjusted, it will then be used to test possible functions of the proportionally small forearm through analysis of the biomechanical properties of the different muscles.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department

SUNY Geneseo Biology Department

Faculty Sponsor

Dr. Sara H. Burch

Funding Sources

Faculty Incentive Grant, Other Source of Support

19 • Anthropogenic Debris in Puerto Rican Waters

Emily McMahon, Allison North, AJ Petty, Chryssanthi Tzetzis, Jacob Calus, Abisage Sekarore Abstract

Trash generated by humans plagues our oceans, lasting for extended periods of time at depths even greater than 6,000 m. Our study focuses on dive data taken from Puerto Rican deep sea benthic communities affected by anthropogenic debris. We classified debris as any manufactured or human made solid material that is discarded on the seafloor, including, but not limited to: glass, metal, and plastic. Video footage was utilized from two National Oceanic and Atmospheric Administration (NOAA) Ocean Exploration remotely operated vehicles (ROV), and one *Alvin* human occupied vehicle (HOV). We examined depth and location parameters in relation to distribution of anthropogenic debris on the seafloor. Debris distribution is also expected to be influenced by water mass movement, such as deep water currents. The parameters for each entry of debris include: longitude & latitude coordinates, debris type, substrate type, benthic/pelagic/demersal, temperature, and dissolved oxygen content. Specific debris items found include soda cans, fishing line, a metal ladder, a pair of jeans, and a military missile with a parachute. This research demonstrates the lasting effects of human debris, such that a soda can left behind at the beach can find its way to the bottom of the ocean where it will persist for numerous years. The consequences of human activity are prevalent everywhere; even remote regions like the deep ocean are impacted by our trash.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Mackenzie Gerringer

Funding Sources

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Geneseo Foundation Undergraduate Summer Fellowship, Sorrell Chesin '58 Research Award, Other Source of Support, Other External Grant

321 • Do Local Grassland Crickets Avoid Competition Through Acoustic Partitioning?

Mackenzie Bancroft, Émilie Fallows

Abstract

Recent assessments of insect populations suggest significant decline in abundance and diversity across the globe. The number of species found in a habitat is influenced by the number of available niches, and for calling species, those niches include temporal and frequency components of acoustic space. One non-invasive way to sample insect populations is to record acoustic signals used by these animals, and we can use these recordings to assess competition for acoustic space. Acoustic recordings gathered from a local grassland during September 2019 and July through September of 2022 will be analyzed to determine if the previously determined most abundant insect species, Sphagnum Ground Cricket (Neonemobius palustris), Carolina Ground Cricket (Eunembius carolinus), and the Striped Ground Cricket (Allonemobius fasciatus), alter their calling behavior to avoid call masking through shifting temporal patterns, or using frequency niche partitioning to communicate within their species. We will be using Raven Pro software to analyze the first two minutes of acoustic data every Monday between 3:00 P.M. and 12:00 A.M. EST for ten weeks to determine if singing crickets are utilizing temporal partitioning across their most popular calling period surrounding dusk. For each recording, we will determine the peak frequency and abundance of calls for each species. This research will expand our knowledge about how New York State cricket species communicate in local grassland habitats.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Krisitina Hannam Funding Sources None

67 • Impact of Traffic Noise on Green Frog Vocalization Patterns 😒

Julia Brzezicki, Micah Hosley, Ashley Biondi

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 asking: can frogs adjust their calling behavior to avoid masking traffic noise? To answer this we are examining the behavioral calling responses of green frogs (*Hylarana erythraea*), a common New York species, to traffic noise. Our first challenge was to define traffic noise. We developed novel criteria for defining the presence of traffic noise based on the waveform from our recordings. We are assessing acoustic recordings collected in 2019 from three known frog breeding sites in the Genesee Valley along I-390. We analyzed recordings from 9 pm, shortly after sunset in, May and June, at permanent ponds near the I390 where traffic noise was present in the recording. Using spectrograms and waveforms in Raven Pro, we measured the time between frogs' calls and the beginning or end of traffic noise, also noting whether they called during traffic noise. We will present preliminary data on the relationship between traffic noise and green frog calling at the beginning of May 2019 and the entire month of June 2019.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Kristina Hannam Funding Sources None

124 • Genomic and Metabolic Characterization of a Novel Gluconobacter sp. Isolated from Grapes

Hannah Valensi, Carly Sheeran

Abstract

The objective of our study was to isolate, identify, sequence, and characterize a wild bacterial isolate from the Finger Lakes Region of New York. We collected samples from vineyards near the SUNY Geneseo campus, including wild fruits such as apples and grapes. Fruit samples were mixed with tryptic soy broth to form a slurry, plated on tryptic soy agar, and isolated using streak plating. Colonies of interest were viewed via microscopy, and DNA was extracted using a Qiagen Powersoil kit. Sequencing of the 16S region identified our bacterium as a species of Gluconobacter, and whole genome, paired-end Illumina sequencing was carried out by SeqCenter (Pittsburgh, PA). The genome was assembled and annotated using the Galaxy platform. The Gluconobacter sp. genome is approximately 3.5 Mb in size, with 3,623 predicted coding sequences. Genome annotation revealed the presence of a predicted levansucrase enzyme, which forms fructose polymers from sucrose. Growth on sucrose-containing media induced the expression of levans, and levans were isolated via centrifugation and ethanol precipitation. Levan production was quantified via spectrophotometry, and estimated to be approximately 3 mg/mL. We have also isolated RNA via bead beating in combination with the TRIzol reagent, followed by purification using an RNA isolation kit. Illumina RNAseq will be performed on RNA from samples grown on either sucrose or glucose. RNAseq will allow us to gain insight into the transcriptional profile of our Gluconobacter strain, including analysis of levansucrase gene expression changes, and will be used to improve the genome annotation of our strain.

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)

245 • p27^{Kip1} is Upregulated in UMSCV-4 Cells Corresponding to Entering a State of Quiescence when Treated with Clobetasol.

Gianna Minnuto, Mack Ogden, Luke North, Kia Haering

Abstract

Quiescence, the temporary exit from the cell cycle, presents therapeutic challenges to cancer management since it allows evasion of chemotherapy and radiotherapy treatment. 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. p27^{Kip1} protein is elevated in quiescent cells and has been used as a marker for entry into quiescence. Using both antibodies against p27^{Kip1} and transfection of a modified p27^{Kip1} into the UMSCV-4 cells we have found that p27^{Kip1} is upregulated by addition of clobetasol, reflecting that quiescence is being activated in the clobetasol treated UMSCV-4 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 p27^{Kip1} upon re-exposure to clobetasol. This establishes the UMSCV-4 cells as a good model system for the study of clobetasol induced quiescence in vulvar squamous epithelial cells. 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 up to 65% of vulvar carcinomas arise in the background of VLS.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Jani Lewis Funding Sources TRAC Grant (Geneseo Foundation a

TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant), Sorrell Chesin '58 Research Award, Other Source of Support, Faculty Incentive Grant

21 • A Review of the Referral, Uptake and Results of Genetic Testing Services after Diagnosis of Metastatic Prostate Cancer

Jaylin Chlosta

Abstract

In 2018 a national guideline was established recommending germline genetic testing for all men diagnosed with metastatic prostate cancer (NCCN, 2018: Pritchard CC et. al, 2016). While only 5-10% of cancers are due to inherited genetic mutations, genetic testing can provide important and valuable information to aid in personalized treatment options, as well as providing potential lifesaving insight to the patient's family members. This study assessed both referral frequency to genetic counseling/testing services, as well as genetic testing uptake of men who have been diagnosed with metastatic prostate cancer (MPC) at Roswell Park. An existing data review was conducted on EHR records for all men diagnosed with MPC who were seen in either urology medicine or urology surgery departments from January 1, 2021, through December 31, 2021(N = 408). Of the 408 eligible patients, 65(15.9%) of them were referred to our clinical genetics department for consultation and testing. In the cohort of the 65 patients that were referred, 49 (75.4%) of them followed through by scheduling and completing an appointment, and out of the 49 patients seen by our genetic counselors, 43 (87.8%) of them chose to proceed with testing. Current referral rates for genetic testing are much lower than anticipated, especially when considering the number of patients who meet criteria for more effective personalized treatments. Efforts should be made to increase both clinician and patient education in hopes to emphasize the importance and benefits genetic testing can have when dealing with a cancer diagnosis.

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Kevin Militello Funding Sources Other Source of Support

222 • Impact of DNA Cytosine Methyltransferase on Escherichia coli Growth

Jessica LoPresti

Abstract

In *Escherichia coli*, the Dcm protein (DNA cytosine methyltransferase) catalyzes the process of DNA methylation, a process that has a large role in the regulation of gene expression in cells . The Dcm protein methylates at the second C at the 5'CCWGG3' site. The specific consequences of this methylation are not known. We have been studying DNA methylation in *E. coli* by using different measures of growth under a variety of different stressors. Last year, we studied the effects of temperature on the growth of *E. coli*. The first experiment we did was a growth curve using absorption spectroscopy of a wild-type *E. coli* strain and a *dcm* knockout strain at a temperature stressor of 42°C and tracked the growth over eight hours. In the second experiment, we plated the wild-type and *dcm* knockout strains of *E. coli* on LB agar plates, and incubated them at lower temperatures of 23°C and higher temperatures of 42°C and 44°C . We found the *dcm* knockout strain generally grew more at the higher temperature. This semester, we are using a few different DNA binding compound sto see what effect they have on the wild-type *E. coli* and the *dcm* knockout strains . Differential sensitivity to the DNA-binding compound ethidium bromide has been previously observed in these strains before, so we are hypothesizing alternative DNA binding compounds will yield similar results. The results from the DNA binding compound experiments could potentially have a variety of medical and pharmaceutical implications.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Kevin Militello Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

250 • Equine Nutrition and Metabolism

Chloe Newcomb

Abstract

By examining multiple aspects of equine diet, exercise, breed, and sex, this research aims to establish a link between metabolic activity and predispositions of the animal. Over the course of 2 semesters and 6 individuals, we have continued to collect and analyze the blood tests. We have found a connection between nutritional additives and tested values such as potassium, glucose and selenium. From this, we have focused the current experiment on these testable blood values, 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 for an overactive metabolism, leading to multiple issues. This was suspected in a previous subject that has since passed, possibly due to selenium toxicity. This idea will be incorporated into the next experiment where we will look at sex of the animal and metabolic activity. I hope 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 a selenium toxicity. I especially plan on gaining more of an understanding on the selenium levels within the body and how that has played a role on metabolism and overall health of the animal. This research strives to make an impact on the world of equine medicine through an increased understanding of metabolism and its linkage to innate characteristics of a horse.

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

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

Taylor Stolberg

Abstract

DNA methylation is integral for regulating transcription in bacteria. However, several DNA demethylation compounds to investigate this genetic process, most notably 5-azacytidine, induce irreversible cell damage in bacteria, making accurate assessment of methylation effects difficult to ascertain. Two novel DNA methylation inhibitors, CM-272 and GSK-3484862, demonstrated success in inducing demethylation and disrupting cell cycle progression in cancer cells with reduced toxicity. We questioned if these selective dual inhibitors induced similar physiological alterations in bacteria. Kirby Bauer (KB) Disk Diffusion assays evaluated the efficacy of these inhibitors on bacterial growth in four strains of *Escherichia coli* (wild-type, *dcm* knockout, *E. coli* B, and the *rpoS* knockout strain), the gram-positive *Bacillus subtilis* (n=3), as well as the gram negative *Pseudomonas fluorescens* (n=3). The *dcm* knockout strain and *E. coli* B lack a cytosine DNA methylation mechanism, allowing for elimination of CM as directed towards methylation. It was hypothesized neither inhibitor would inhibit proliferation, as DNA methylation is not necessary for *E. coli* to grow. Across all three bacterial species, the CM-272 inhibitor demonstrated a consistent ability to restrict bacterial growth, producing a visible ZOI across all four strains of *E. coli*, *B. subtilis*, and *P. fluorescens*. This inhibition of growth suggests CM-272 possesses novel antibacterial properties in different bacterial species.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Kevin Militello Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

193 • Biological Trends in Schistosomiasis Reinfections and Co-infections

Tyler Dzuba, David Marx, Wai Cheung Tung

Abstract

Schistosomiasis is a parasitic infection that affected nearly 252 million people worldwide in 2021, Africa, Asia, and South America are the most affected regions. Schistosomiasis can cause many symptoms, many of which are seen through urinalysis. Due to the nature of Schistosoma mansoni and S. haematobium reinfection is quite common. Coinfection also between these two species occurs frequently due to the overlap in areas they affect. Both reinfection and coinfection are possible causes for differences in severity of infection. The severity of infection can be determined both in terms of the symptoms of the afflicted individual as well as looking at the egg count that is passed by an individual. Data was acquired from blood, stool, and urine samples of school children in the highly affected community of Tomefa in Accra, Ghana over the course of 6 years. Possible correlations between reinfection, and urine chemistry as well as egg counts are being investigated. Possible correlation between co-infection and urine chemistry along with egg counts are being investigated. Analysis is currently ongoing.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Susan Muench Funding Sources None

241 • Analysis of KAP Survey Data and Biological Data to Determine if there is an Association Between Community Practices and Coinfection with S. mansoni and S. haematobium

Grace Barnum, Nora Whorton

Abstract

Schistosomiasis, also known as bilharzia, is a neglected tropical disease (NTD) that is more prevalent in tropical areas including Africa, South America, and the Caribbean. The WHO estimates that 90% of people who require treatment for schistosomiasis infections live in Africa. Our study focuses on data acquired from a small, marginalized community on the outskirts of the capital city of Accra in Ghana. Our sample includes individuals, both male and female, ages 8-26. The data were collected using a Knowledge, Attitudes, and Practices survey and biological tests. 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. The biological data consists of diagnostic tests for different species of Schistosomiasis that were acquired by analysis of stool and urine samples. These species include, S. mansoni and S. haematobium, which can reside in the body concurrently. Our research aims to determine if changes in the prevalence of certain high-risk practices within the community are associated with changes in the rate of coinfection during certain years. We will also try to see if the health education initiatives that have been prioritized in recent years are making a difference in decreasing the number of coinfections. The information provided by our analysis can be used to educate individuals in the community on practices that contribute to or help prevent coinfection in order to lessen the impact of schistosomiasis.

Subject Category Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Susan Bandoni Muench Funding Sources None

122 • Using CRISPR/Cas9 Genome Editing to Knockout MHC Class I in Xenopus laevis

Keely Glasheen, David Marx

Abstract

The immune system of the frog *Xenopus laevis* is similar to humans. MHC Class I is a vital molecule for the immune system of *Xenopus laevis*. It presents peptides to CD8 T-cells and the presentation of self peptide fragments is crucial for immune self recognition. When MHC Class I presents non-self peptide fragments, it triggers an immune response, causing CD8 T-cells to kill the infected cells. All cells express some level of MHC Class I because all cells can be infected. 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 and are expressed both as mRNA and protein in adult frogs. We are interested to see if 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 multiple insertions and/or deletions can occur in the sequence that inactivates the gene. We

generated transgenic tadpoles that have guide RNAs targeting the MHC class I gene. Currently, we are using DNA sequencing to verify successful knockout of the MHC Class I gene.

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)

266 • Effects of Meiotic Drive on Developing Eyestalks in Stalk-Eyed Flies

Emma Flaitz

Abstract

Teleopsis dalmanni, also known as the Malaysian stalk-eyed fly, exhibits sexually dimorphic eyestalks, which means there is a difference between male and female eyestalk length. Additionally, there are differences in eyestalk length within male populations. One possible reason for these differences is that some stalk-eyed flies exhibit meiotic drive. Meiotic drive is a selfish allele on the X chromosome that violates Mendel's Law of Segregation by increasing its own transmission. Males with meiotic drive have shorter eyestalks, produce more female offspring, and have lower fitness because females preferentially mate with males that have longer eyestalks. We are working to determine what genes are differentially expressed due to the presence of meiotic drive in developing eye discs that are causing differences between standard and drive male eyestalk length. We are also attempting to determine if meiotic drive is affecting eyestalk development in the same way for males and females, and whether the same genes are impacted. PCR and gel electrophoresis are being performed using primers that indicate sex and drive status. These samples are then grouped into pools and sent for RNA sequencing. Female RNA samples are being analyzed using the differential gene expression software, Kallisto and DESeq2. Previous research indicates an upregulation of gene expression in standard males and a downregulation in gene expression in eye discs in females with drive compared to standard females.

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)

280 • PCR Analysis of Meiotic Drive Candidate Gene JASPer

Olivia Khangi, Tanner Ashton

Abstract

The purpose of this experiment was to analyze the JASPer gene to understand its makeup and length. JASPer functions in regulation of DNA transcription. However, the JASPer gene is a candidate gene for sex ratio, which is when all of the offspring of a male with the gene are female. This violates the law of segregation, stating the one of two alleles has an equal probability of being inherited. In a male with sex-ratio, the JASPer segment is much longer, and contains several mutations. This trait has been identified in Teleopsis dalmanni, also known as the stalk-eyed fly.. We created different primers for 3 different JASPer segments in the genome. They were designed using Primer3 and isPCR to identify potential primers and predict results. We predicted three possible outcomes; No amplification in both standard and ratio flies, amplification in sex ratio flies. Each possible outcome would tell us something different about the genome. First, we tested them on standard fly DNA to have a comparison to

sex ratio flies. Using standard PCR, we found that JASPer segments 1 and 3 have differences between standard and meiotic drive flies, where they are longer than expected. Segment 2 remains the same between standard and sex ratio flies. Our next step is to use Long Range PCR to analyze the segments 1 and 3 in order to get an accurate measurement of length.

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

297 • Spalt-related gene expression and sexual ornament size in Stalk-eyed flies

Abel Lopez

Abstract

Evolution frequently favors adaptions that allow organisms to endure changing environments and successful reproduction. Whether in the short, or long run, these adaptions are often tradeoffs. Stock-eyed flies are model organisms for investigating the underlying mechanisms of sexual selection. Previous studies shows *Teleopsis dalmanni* use their sexually dimorphic eye stalk length to signal good genes and increase reproductive success. Our experiment looks to investigate the expression of a spalt-related gene, salr, within the heads of Stalk-eyed flies using quantitative PCR analysis. In addition we measured their eye stalk and body length as an extension of previous studies showing dimorphic eye span-body length ratios. We hypothesized intersex differences in salr to eye span ratios were due to trade offs of eye span length for more rigorous neural structures. This was done by using extracted RNA from the flies' heads to create template DNA and run qPCR. Fly samples were chosen, which we measured head, torso, and body length and dissected their heads for RNA extraction. The result of our experiment confirmed previous findings of higher eye span to body length ratios, to which the basis of our hypothesis relied on. Furthermore, qPCR findings confirmed our original hypothesis revealing smaller eye spans to correlate with higher salr gene expression within sexes.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology

Faculty Sponsor

Josephine Reinhardt

Funding Sources

Geneseo Foundation Undergraduate Summer Fellowship, McNair Scholars Program Support, Faculty Incentive Grant

243 • Evolutionary Genomics of Meiotic Drive in T. whitei

Reghan Meek, 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*. Preliminary data suggests that despite their close evolutionary relationship, the mechanism of the SR trait might occur differently. 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*. Whole genome sequencing was done on SR and standard (ST) *T. whitei* males. Once sequencing was complete, differential expression analysis was done using DESeq2 to identify the differential gene coverage and expression between SR and ST individuals. Additionally, single nucleotide polymorphism (SNP) analysis was

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performed using POPBAM software. The comparison of SR and ST *T. whitei* males revealed 16 RNA genes that were significantly differentially expressed, none of which are differentially expressed in *T. dalmanni*. Additionally, no significant differences in DNA differential coverage were identified. Interestingly, the identified SNPs were not all X-linked. These early findings suggest that there are fewer genomic differences between ST and SR males. For future goals, we will identify candidate locations on the autosome where single nucleotides are the same among SR males, but different from ST males.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Josephine A. Reinhardt Funding Sources

None

229 • Cloning of Zebrafish Ano1b

Nicole Stango, Amanda DiMatteo, Tara Sweet

Abstract

Anoctamin 1 (Ano1) is a calcium-activated chloride channel involved in pain sensation and epithelial secretion. Recently, we detected Ano1 in the blood of zebrafish, but its function here is unknown. We hypothesize Ano1 regulates blood cell volume, which may influence their development, maintenance and turnover. In exploring the role of Ano1 in blood, we first ask is Ano1 a calcium-activated chloride channel? The answer is not clear. In zebrafish, there are two genes (Ano1a and Ano1b) that show homology to Ano1 in other species. Ano1a encodes a protein that aligns the entire length of Ano1 in mice and humans, shows high sequence similarity, conservation of important functional regions, and is likely a calcium-activated chloride channel. Ano1b, as described by the current genome assembly however, has an undefined promoter and encodes a protein that is missing portions of the typical channel structure, including important functional regions. Yet, we have evidence that Ano1b is expressed in blood. As such the goal of this project is to clone Ano1b, which we anticipate may be longer than represented in the current genome assembly. To clone Ano1b, we utilized 1) PCR to evaluate and amply gene products predicted by the current genome assembly and 2) RACE to extend from known sequence towards both the 5' and 3' end of the coding region. Results from this project allow for expression of Ano1b and enable us to evaluate, alongside previously cloned Ano1a, whether it forms a calcium-activated chloride channel.

Subject Category Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Tara Sweet Funding Sources TRAC Grant (Geneseo Foundation and Student Associ

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

91 • How Does Climate Change Alter Invasion Risk of Invasive Species in the Northeast U.S.?

Abigail Minnekine

Abstract

Invasive species are one of the greatest threats to biodiversity. As climate change is causing the earth to become warmer, invasive species will spread into new environments that were previously unsuitable. These altered species distributions are expected to lead to new significant impacts in the future for invasive species. In this study, we focused

on invasive species that are of high priority for the Northeast region of the U.S. to determine their invasion risk to new regions. Invasion risk is the likelihood that a nonnative species will invade an area due to the location's suitability for the species. To analyze the changing distributions, and therefore invasion risk, for these species, we first obtained occurrence records from an open-source database. We then produced species distribution models (SDMs) for the current range and the predicted ranges of the species based on projected climatic variables. Next, we analyzed the amount of geographic area within the United States region of North America where the species will be present for the different SDMs. Our preliminary results reveal that the distribution of high-risk invasive species in the Northeast U.S. varies in their response to climate change. We found that some species distributions maintain their area and shift northward while others increase their range in the Northeast and expand north and westward, possibly due to their life history traits and the species they co-occur with. Our findings have implications for the development of sustainable management strategies for invasion risk.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Biology Faculty Sponsor Suann Yang Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

199 • How do Invasive Species Alter Competition Between Forest Tree Species? 💋

Kaitlin Murphy, Jessie Seifert

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 (positive) effect. Invasive species can also have negative effects on biodiversity by altering the interactions between native species. In our study, we focus on competition between tree species of invaded forest communities in North America. To examine how the invasion of non-native species alters competition between forest tree species, we utilized the forestecology package in the R Programming Environment. The forestecology package applies a spatially-explicit, statistical approach to analyzing interspecific neighborhood competition. Utilizing neighborhood competition models to quantify the range of effects that invasive species have on native species can help tailor ecological management strategies for specific forest communities. Our study expands our abilities in measuring the effects of the invasion of specific and unique forests to prioritize conservation resources effectively.

Subject Category

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

204 • How does change in land use impact the water chemistry parameters in the streams of Oswego County, NY S

Madison Steates, Thomas Back

Abstract

Land use within a watershed is closely tied to stream water chemistry. Anthropogenic chemical inputs eventually make their way into streams, affecting fluvial ecosystems. Sources of these anthropogenic inputs change over time, especially when rural landscapes become increasingly urbanized. We studied the relationship between land use and stream water

chemistry for Oswego County, New York, because riparian zones in this county have shifted to residential from agricultural and forested land uses. We extracted data from the New York State Department of Conservation (DEC) Department of Water (DOW) Monitoring Portal. Preliminary results show that Total Nitrogen (Kjeldahl) in mg/L fluctuates yearly from 2001-2020, Total Nitrogen in mg/L increased by 0.29 mg/L from 2009 to 2020, and Total Phosphorus decreased slightly from 2001 to 2015. Changes in land use do not appear to be substantial enough to have a large impact on these chemical parameters in Oswego County. However, the data collected for sites in Oswego County are sparse, and thus our results may be misleading. We will conclude with recommendations to Oswego County for a sampling strategy that better encompasses the major waterways of the county.

Subject Category

Science and Mathematics Categories: Biology

Faculty Sponsor Department Biology Faculty Sponsor Suann Yang Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

CENTER FOR INTEGRATIVE LEARNING

12 • Re-Plating Civic Engagement

Jocelyn Haines

Abstract

Imagine if you were a school-aged child in the African nation of Uganda whose school has been closed for over two years due to the COVID-19 pandemic and access to food has been negatively impacted by price fluctuations and disruptions to agrifood supply chains. Now imagine that you are a SUNY Geneseo student who is passionate about combating food insecurity on a global scale. While it seems straightforward to draft up a plan addressing this issue and implementing it yourself, it leaves out two vital components: sustainability and community input.

Keeping those points in mind, I constructed a project that I hope will help my peers rethink how they can sustainably tackle prominent global issues such as food insecurity. This past summer, I collaborated with two local organizations in Kakira and Jinja, Uganda to integrate an improved energy-efficient cooking stove and organic school gardening program into two primary schools in the surrounding region to assist in providing a reliable source of nutritious food for children with a smaller environmental footprint. Once back at SUNY Geneseo, I worked to share the knowledge and skills I acquired to the college community through hands-on engagement and interactive events on-campus. This project was made possible by the Student Ambassador Program in the 2021-22 Academic Year and generous donor funding for the Ambassador in Diversity.

Subject Category

Interdisciplinary and Other Categories: Ambassador Program

Faculty Sponsor Department

Center for Integrative Learning

Faculty Sponsor

Melanie Medeiros Funding Sources Student Ambassadorship

CHEMISTRY

81 • Critical Bone Fracture Repairs: A Comparison of Porous and Mechanical Properties of Collagen and Chitosan Bioactive Cements and Pig Bone

Matthew Chudy, Nobah Islam, Owen Vincent

Abstract

Calcium Phosphate Cements (CPCs) have been under study as a method of replacing autografting. Autografting removes a small section of bone and uses it as a bone growth stimulant at the fracture site. Hydroxyapatite (HA) is a calcium phosphate mineral and the primary mineral component of bone, and can help to facilitate osteoconduction in vivo. HA cements alone however lack mechanical strength and porosity required for cell attachment and durability. The addition of dental cement has shown promise in improving mechanical strength, and naturally occurring polymers have shown promise in helping to improve porosity and the degradation of the cement as new bone is formed. In this project we examine the effects of the polysaccharide polymer Chitosan and the protein polymer Collagen on the mechanical strength and porosity of a hydroxyapatite CPC.

Subject Category

Science and Mathematics Categories: Biochemistry

Faculty Sponsor Department Chemistry Faculty Sponsor Barnabas Gikonyo Funding Sources Other Source of Support

2 • Pretreatment & Fiber Content Analysis of Cannabis sativa

Lily Connerton, Ariella Yonaty

Abstract

Hemp and marijuana, both subspecies of Cannabis sativa L. are often generalized into one group but are vastly different in chemical constituent levels of delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). Hemp contains only 0.3% THC, compared to marijuana's THC content of 17.1%, distinguishing it as a useful and safe consumer crop differing from its co-species, which is harvested for psychoactive and pharmaceutical reasons. In comparison with other popular crops (corn, beets, etc.), it is one of the fastest growing plants and its refined products have immense 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 great 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

Funding Sources

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

238 • Biodiesel Production from Algal Lipids 💋

Alejandro Lazaro, Sarah Mertson, Denise Ferreira, Kathleen Lewis, Aiden Williams, Alex Wilkinson, Elizabeth Klosko

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Abstract

To many, algae are the pesky product of eutrophication in local lakes and ponds. In the laboratory, algae is a promising competitor for renewable resources of biodiesel. Algae not only ingests excess carbon emissions from the atmosphere, but, they also convert it into energy dense lipids, which can be harvested, and then transformed into biodiesel through process of transesterification. Despite the advantages, the amount of biodiesel produced is not significant enough to be considered a worthwhile option. Before the fuel industry can accept algae farming as a worthy alternative to fossil fuels, the reason for harvesting must be maximized further. The overarching goal of this project is to make algal lipid extraction more efficient through means of culturing the algae species Chlorella Vulgaris and evaluating biodiesel produced via H-NMR, C-NMR, and IR was completed. In order to test the product made we created a standard of which we compared our results to, using canola oil as the lipids for transesterification.

Subject Category

Science and Mathematics Categories: Chemistry Faculty Sponsor Department Chemistry Faculty Sponsor Barnabas Gikonyo Funding Sources McNair Scholars Program Support

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

Valerie Lepore, Gage Smith, Daniela Grimard, Kyle Mele, Dylan Herstek

Abstract

The preferred usage of fossil fuels over renewable energy sources has resulted in the extraneous release of greenhouse gasses into our atmosphere. Greenhouse gasses pollute our 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 our 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 our samples, the more ethanol that can be produced via fermentation to be used as fuel.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry

Faculty Sponsor

Barnabas Gikonyo

Funding Sources

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

183 • Exploring the synthesis of maleanilic acids in bioderived, biodegradable solvents ${\cal S}$

Emily Fitzpatrick, Emily Rennells

Abstract

Maleamic acids with varying substituent groups were produced by reacting maleic anhydride with para-substituted anilines in green solvents with the goal of optimizing yields under environmentally friendly conditions. These substituent groups include methylsulfonyl-, chloro-, bromo-, trifluoromethyl-, iodo-, and methoxy- groups. Electron-donating groups corresponded to yellow and brown colors and had smaller-magnitude HOMO-LUMO gaps than electron-donating groups. Stronger electron-withdrawing groups corresponded to lower percent yields, with the trifluoromethyl intermediate having a percent yield of 57% and the methoxy maleamic acid having a percent yield of 90%. Maleamic acids can be reacted with sulfuric acid to produce maleimides, which have a variety of uses industrially, including as biomarkers, in photovoltaic cells, in catalysis, and in electrochromic devices. Our next step is to produce maleimides in one step using maleic anhydride and para-substituted anilines under environmentally friendly conditions.

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)

228 • Biological Screening of Organic Compounds for Binding to ACE2

Margaret Hintz, Gianna Mantha

Abstract

Recent world-wide events have made it clear that it is imperative to develop new therapeutic agents against infectious organisms. Our research lab specializes in the green synthesis of molecular scaffolds found in many pharmaceutically active compounds in use today. Specifically, maleamic acids, maleimides, quinoxalines, quinoxalinones, pyridoquinoxalinones, 4-thiazolidinones, and 1,3,4-oxadiazoles have been shown to have broad biological activities, including antibacterial, anti-inflammatory, anticonvulsant, anticancer, antidiabetic, analgesic, antiviral, and antifungal properties. As a first step, we are looking at Angiotensin II converting enzyme (ACE2), a carboxypeptidase, which is part of the renin-angiotensin system (RAS) that controls regulation of blood pressure. ACE2 is also a receptor of human coronaviruses, such as SARS-CoV-2 and HCoV-NL63. Our project is looking at the ability of our library of compounds to bind to ACE2 and thus inhibit the binding of other proteins to the receptor, possibly leading to new blood pressure control medications and importantly, possibly identifying new leads to inhibit the binding of the SARS-CoV-2 spike protein and other corona viruses to ACE2. The results of our screening experiments will be presented.

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)

254 • Mold Testing in Various SUNY Geneseo Residence Halls

Renee Spencer, Jennifer Aguilera-Fonseca, Anson Butler, Michaela Cawley, Anastasia DeJesus, Mandi Fasano, Amy Gluchoski, Atoria Hamm, Matthew Liao, Madeline Predmore, Natalie Riedy **Abstract** In 2018-19, there was a problem with mold on campus at SUNY Old Westbury that was making students sick. In addition, there have been recent cases of mold in the residence halls at the University of Minnesota, Vanderbilt University, and Penn State, all of which involved students reporting signs of illness. This project seeks to determine if mold is growing in certain areas of the residence halls on campus at SUNY Geneseo and, if so, whether the mold is considered dangerous to humans. To test for mold growth, we will use mold testing kits and swabbing for mold in multiple areas within the residence halls on campus. If mold is present, a more specific kit will be used to determine if it is a toxic variety. Mold is expected to be present because it is highly prevalent; however, not all molds cause harm to humans. Currently, black spots have been noted in some residence hall bathrooms that may be mold. The test kit results will determine whether they are. Although there may be mold present in the residence halls, it may not be harmful to students.

Subject Category

Science and Mathematics Categories: Geochemistry

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

195 • Targeting Telomeric and c-myc G4 DNA as an Anticancer Approach

Alexander Michaels, Sameela Haidari, Courtney Fetzer

Abstract

G-quadruplex (G4) DNA are non-canonical higher order DNA structures formed from guanine rich sequences, made up of stacked G-tetrads stabilized by non-Watson-Crick (Hoogsteen) base pairing and K+ ions.

Early interests in G4 DNA were spurred on by the revelation that G4 was formed in telomeric DNA sequences at the end of our chromosomes. This was particularly promising given that G4 structures formed in telomeric DNA were also found to inhibit an enzyme known as telomerase, which is overexpressed (>90%) in cancer cells. 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 DNA has also been shown to be overrepresented in the promoter regions of oncogenes (e.g., c-myc and ras genes) and the 5'UTR of mRNA. As a result, G4 DNA represents a viable target for possible anti-cancer therapeutic agents to treat previously "undruggable" sites such as the c-myc and ras oncogenes.

In this work, G4 structures formed at both telomeric and c-myc G4 sequences were investigated, with an emphasis on cmyc G4. This was done by probing the G4 structures with a variety of known and novel compounds such as quinacrine, TMPyP4 and NDI derivatives. Using the biophysical techniques of isothermal titration calorimetry (ITC), fluorescent displacement, thermal melting, and circular dichroism (CD) spectroscopy, the binding characteristics of these compounds to G4 DNA were investigated.

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), Sorrell Chesin '58 Research Award

80 • Fluorescence Quenching in a Model Bio-Sensing System

Josh Edelbach, Josie Hastings, Logan Sargent Abstract

Fluorescence Quenching in a model bio-sensor consisting of a gold nanoparticle (NP) – fluorescein system was explored for 20 and 35nm AuNP and compared to previous data sets. Absorbance and fluorescence spectroscopy were used to analyze the quenching. Effects of AuNP size and NP–dye separation on the quenching efficiency were investigated. Increasing nanoparticle size consistently increased the quenching seen in the system, and we show that the Stern-Volmer constant (Ksv) appears to scale with the surface area of the particle until an upper limit of NP size which may be dictated by the increase in scattering among larger NPs. Oddly, in all systems but the 35nm particles, the 2kDa ligand exhibited the largest quenching.

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)

92 • HPLC-MS Separation of Phytocannabinoids in Consumer Products

Madalyn Hymowitz, Amber Wright

Abstract

Consumer products containing cannabidiol (CBD) were analyzed to determine the concentration of CBD in each product. CBD and other cannabinoids were separated and quantified in four different brands of commercial gummies purchased at local vendors using high performance liquid chromatography-mass spectrometry (HPLC-MS). The measured CBD concentrations were consistently lower than expected, with weight percentages 9–90% lower than the advertised content. These results have implications for how CBD products are sold, regulated, and used. These measurements are also the first of their kind at Geneseo and open new avenues for future research.

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)

139 • Leveraging Third Generation DNA Sequencing Technology to Explore Role of Epigenetics in Round Scad Fish under Global Climate Stress

Ashley Felber, Owen Frank, Sophia Altman

Abstract

Global climate change has been a recent pressing issue that has been seen to have environmental impacts on various ecosystems. Such environmental changes induce stress-related heritable traits without changes to the genome's coding, a concept known as epigenetics. DNA methylation plays a key role in these cellular responses to environmental stress. The Round Scad fish is an affordable source of protein for common citizens in the Philippines, but is currently facing rapid decline both in population and average 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 epigenetic response to stress due to global climate change. Samples of fish DNA from the Philippines were collected and isolated. Using nanopore MinION, a portable third generation DNA sequencing technology, we are able to obtain initial DNA sequences. This technology has the advantage of directly identifying methylated nucleotides using built in softwares. Here, we shall report on the initial data comparing it with DNA methylation patterns in stress response genes of the model organism,

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Zebrafish. We anticipate that long term findings from this project will provide information critical to managing Round Scad and other marine fish facing similar environmental stressors.

Subject Category Science and Mathematics Categories: Biochemistry Faculty Sponsor Department Chemistry Faculty Sponsor Salvador Tarun Funding Sources Sorrell Chesin '58 Research Award, Other Source of Support

219 • Developing a Portable System of Environmental DNA Surveillance to Monitor Fish Population Dynamics and Detect Invasive Species in Conesus Lake and The Philippine Seas S

Karina Mirza, Micah Ford, Morgan Comstock

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. In the Philippines, the fish Round Scad is a cheap source of protein in the diet of common citizens. Alarmingly, it 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 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 metabarcoding that can be used in the field to monitor Round Scad population dynamics in the Philippine Seas, as well as detecting the presence of invasive species. As a 'proof of principle' study, we present our proposal here to examine the sensitivity of the system to detect two invasive fish species in our local Conesus lake: the rudd and the alewife. If successful, the deployment of this method in the Philippines may contribute to acquiring important data for informing sustainable management and conservation strategies of marine species facing global climate change stress.

Subject Category

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

118 • Ruthenium complexes with Schiff-based ligands that modulate the aggregation of the amyloid- β peptide

Zoe Connor, Anthony Rizzo

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

Faculty Sponsor Department Chemistry Faculty Sponsor Michael Webb Funding Sources None

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

Daniela Grimard, Katie Morgan, Madeleine Turton

Abstract

Alzheimer's disease is a neurodegenerative disease currently found in some of our aging population. One key feature of the disease is the observation of deposits of the small peptide Amyloid-Beta (Aβ). The goal of using ruthenium-based chemical compounds is to target the Aβ peptide and prevent its aggregation to Aβ plaques. Five compounds were synthesized using ruthenium(II) and azole ligands with a primary amine. The stability of the compounds was characterized by UV-Vis spectroscopy and found to be remarkably stable in aqueous solution, even with extended incubation. To determine their impact on Aβ aggregation, several methods were used including a thioflavin T fluorescence assay, dynamic light scattering, and transmission electron microscopy spectroscopy. The results of these studies will be discussed, where all of the compounds were shown to greatly inhibit the aggregation of the Aβ peptide.

Subject Category

Science and Mathematics Categories: Chemistry
Faculty Sponsor Department
Chemistry
Faculty Sponsor
Michael Webb
Funding Sources
TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

288 • Characterization of Self-Aggregation of the Amyloid Beta 1-40 peptides Coated Nanogold Particles

Eli Barbour, Zi Chao Lin

Abstract

The self-assembly of amyloid beta 1-40 coated gold nano-particles were studied by spectroscopic method. The surface Plasmon resonance (SPR) band of gold colloid exhibited red-shift as the adsorbed peptides transforms its conformation from folded structure to unfolded structure. The external pH dependent conformational change of peptides lead to a creation of a micron-size of gold nano-particle aggregates. The completion of the aggregates somewhat depended on the nano-size of core gold nano-particles. It is characterized as either slow-growth or fast growth. For the relatively smaller size of the gold colloid particles, it was a very moderate growth of the aggregates. On the other hand, for the relatively larger size of the gold colloid, it showed a fast growth observed at with very sharp feature of induction. The behavior of slow or fast induction could be simply generalized by the nano-size and the peptide coverage ratio.

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

322 • 3D Printed Models Representing Topics in Physical Chemistry

Ryan Drake

Abstract

The topics studied within the field of physical chemistry have the potential to produce revolutionary advancements that provide insight into what happens on a microscopic level. Since this field mainly deals with occurrences that are too small of a scale for instruments to handle, the issue of visualizing these phenomena impedes the ability to understand them. In Chemistry 329, Topics in Physical Chemistry, we sought to use 3D printed models from the 3D printing lab on campus to overcome the hurdle of visualization help explain topics in the field of physical chemistry, and to showcase the application of 3D printing in the general field of chemistry. In the first half of the class, general topics of chemistry were selected to be 3D printed to exemplify the use of those models in a practical setting, such as teaching. Topics such as a molecular modeling kit and molecular orbitals were printed and used to show how they could be used education as a visual model of more well-known general chemistry concepts. The latter half of the class was devoted to the use of 3D printed models of more recent advancements specific to the field of physical chemistry. The behavior of electrons during electron tunneling, a phenomenon that is difficult to understand without a visual aid, was one of the topics during this half represented by a 3D print. This class showed how both ground breaking advancements and more well understood concepts can be better represented and understood using 3D printed models.

Subject Category

Science and Mathematics Categories: Chemistry Faculty Sponsor Department Chemistry Faculty Sponsor Kazushige Yokoyama Funding Sources None

155 • The Attempt of Doping and Characterization of SARS-CoV-2 Spike Protein Coated Gold Colloids in a Silica-sol-gel Matrix

Marc Fazzolari

Abstract

A SARS-CoV-2 (a.k.a. virus of COVID-19) are protected by a viral membrane which requires this viral capsid to fuse with a cell as an initial step in the infection process. The spike-protein (s-protein) attached outside of the envelope initiates the cellular infection process with its unique molecular mechanical motion, which possesses a great potential to design a bio-material with a mechanical motion and doing work at the molecular size. Our group has been characterizing the behavior of s-protein attached over the Gold Nano-particles. While some conformational information have been gathered, the detailed investigation over three-dimensional space is still lacking. The 3D (Three Dimensional) Raman imaging was attempted for the s-protein coated 50 nm gold colloid doped into silica based sol-gel matrix under pH~7. The silica based sol gel matrix contains a cavity possessing liquid allowing s-protein to flexibly move. Thus, it is possible to collect structural information which is not possible from the data collection at the planarly condition.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department Chemistry Faculty Sponsor Kazushige Yokoyama Funding Sources None

209 • The effect of Zn2+ to the reversible aggregation process of Amyloid beta peptide coated gold nanoparticles

Rachel Hirschkind, Veronica Szygalowicz, Kia Haering

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 of fibrillogenesis. There have been reports indicating the interaction of Zn2+ ion acts as a type of 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 recreated even though the pH value was set under 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 Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

251 • Nano-size dependence of reversible aggregation and effect of ACE2 by SARS-CoV-2 spike-protein coated gold colloid

Madison Kieft

Abstract

In our research, we aimed to examine the behavior of the spike protein (s-protein) of SARS-CoV-2, the virus responsible for COVID-19, on nano-gold colloid in the presence of ACE2 (angiotensin converting enzyme 2), which facilitates infection by binding to the s-protein. To do this, we coated gold colloid particles with the s-protein, ranging in size from 10 nm to 100 nm in diameter. We found that the Surface Plasmon Resonance (SPR) band was sensitive to aggregation and exhibited a red shift at pH ~3. We monitored the peak of the SPR band alternately at pH ~3 and pH ~11 over 10 cycles. For s-protein coated particles with a diameter greater than 30 nm, we observed enhanced reversible aggregation in the presence of ACE2. Currently, we are investigating the temperature dependence of this reversible aggregation and collecting and analyzing Surface Enhanced Raman Spectrum (SERS) data.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor DepartmentChemistryFaculty SponsorKazushige YokoyamaFunding SourcesTRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

173 • Reversible Aggregation of Alpha-Synuclein coated Nano-Gold Colloids

Zi Chao Lin, Eli Barbour, Christopher Lembo, Ryan Drake

Abstract

The Alpha-Synuclein is known to be a hallmark for causing Parkinson's disease. We investigate the effects of SPR (Surface Plasmon Resonance) band shifts between basic and acidic environments on protein-coated gold nanoparticles. The red shift of SPR band is considered to correspond to the unfolding of the peptide leading to fibrillogenesis (i.e., formation of a fiber form). We observed the reversible process between unfolding and folding status for the alpha synuclein located over nano-gold colloids. We are currently conducting an ongoing investigation of nano-size and temperature-dependence of the reversible aggregation process.

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)

220 • An Approach for *In-Situ* Detection of Gold Aggregates Amyloid Formation by Surface Enhanced Raman Scattering

Joshua Thomas, Windsor Ardner, Madison Kieft

Abstract

The attempt at in-situ detection of externally initiated gold colloid aggregates in the middle section of the hippocampus of the Long Evans Cohen's Alzheimer's disease(AD) rat model has been conducted through the Surface Enhanced Raman Scattering (SERS) method. A significant number of modes were previously reported in SERS shifts for Alzheimer-diseased rats and human brain tissue, implying the presence of amyloid fibrils (Amyloid fibrils are the hallmark biomarker protein for AD). In comparison with existing methods: the amyloid fibrils with beta-sheet conformations identified previously in AD mouse/human brain tissues were involved in the formation of the gold colloid aggregates.

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)

265 • Visualizing Altered Gene Expression of Clobetasol Treated Vulvar Carcinoma Cells with Raman Spectroscopy

Kia Haering

Abstract

As epithelial carcinomas progress to a malignant state, the expression of tissue-specific genes is altered. In the case of vulvar epithelial carcinoma cell line A431, the tumor suppressor gene E-cadherin is expressed, as well as cytokeratins 8 and 18. E-cadherin is an integral membrane protein that facilitates cellular adhesion. Cytokeratins 8 and 18 are intermediate filaments located on the cytoplasmic side of the plasma membrane and help resist mechanical stress. Clobetasol is a glucocorticoid that is used to treat vulvar lichen sclerosus, an inflammatory condition that predisposes patients to the development of vulvar carcinomas. When the cell line A431 is treated with clobetasol, the resulting cells lose expression of E-cadherin and partial expression of cytokeratins 8 and 18, while gaining expression of vimentin. Vimentin is an intermediate filament bound to intracellular integrins and the extracellular matrix of the cell which provides structural support. The change in tissue-specific gene expression is indicative of an epithelial-mesenchymal transition, wherein cancer cells become more aggressive and may invade other tissues. Immunofluorescence was used to identify the changes in gene expression. Raman Spectroscopy has been used in an attempt to visualize the surface proteins of untreated and treated cells as the transition advances toward a malignant state. In observing the cellular reconstruction of the epithelial-presenting A431 to clobetasol-treated A431D cells as a function of time, the regulation of gene expression and interactions of co-expressed genes can be used to isolate the epigenetic mechanism involved in the epithelial-mesenchymal transition of cell line A431.

Subject Category

Science and Mathematics Categories: Chemistry

Faculty Sponsor Department

Chemistry; Biology

Faculty Sponsor

Kazushige Yokoyama; Jani Lewis

Funding Sources

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

COMMUNICATION

182 • Paradox of Allyhood: Student-Athlete Perceptions of Allyship

Josephine Lewis

Abstract

This research aims to explore how allyship is experienced among student-athletes. We conducted five focus groups to gauge first-hand stories of student-athletes who are members of culturally marginalized groups, as well as members from historically dominant groups. Specifically, the research focused on how student-athletes from various backgrounds attempt (or fail) to work together to jointly establish a sense of belonging on their collegiate sports teams. Using co-cultural theory and dominant group theory as theoretical frameworks, and focus groups as the method, the analysis reveals a paradox in how allyship is viewed between different groups. Such paradoxes included the themes of action/inaction, relationship building and complications to it, and the internal/external work done by student-athlete allies.

Subject Category

Social Science Categories: Communication Faculty Sponsor Department Communication Faculty Sponsor Sasha Allgayer Funding Sources Jason and Diana Kyrwood '95 Student/Faculty Research Endowed Summer Fellowship

107 • Identity Salience & Asian Media Representation

Aaron Enriquez

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Abstract

Asian representation in media has had recent breakthrough. Films such as *Everything, Everywhere, All at Once, Fire Island, Crazy Rich Asians*, and influencers such as *Bretman Rock, Joel Kim Booster, Jessica Vu*, and more influential people and forms of media have received great appraisal and attention for being pioneers of Asian representation that Asian-media consumers have longed for. This research project is a pilot study that will examine identity salience of Asian individuals through the media portrayal of Asian people. Identity salience refers to the value of identity to an individual, and this project examines how identity is reinforced through the representation of the Asian identity in forms of media. Participants were interviewed on their thoughts on Asian representation across a broad range of media, how media representation affected their own identity salience, and what their vision of media representation of Asian people shall entail in the future forms of media to come.

Subject Category

Social Science Categories: Communication Faculty Sponsor Department Communication Faculty Sponsor Sarah Brookes Funding Sources McNair Scholars Program Support

106 • The Darwinian Nature of Alt-Right Discourse on the Meme App "iFunny"

Surjit Arnone

Abstract

As the Alt-Right has returned to prominence in the United States, media and communication scholars have attributed their success to the democratic, meme-based communication of the movement (2020). However, few studies have grounded their arguments about Alt-Right mediated communication in their communities. This study investigates the functioning of memes as group communication mode by looking at meme creation, circulation, and user comments on the niche Alt-Right meme app "iFunny." In response to the existing scholarship, I argue that in this context memes function less democratically and more by a Darwinian logic of competition as measured by the prevalence of open hostility against outsiders and competition for attention and recognition in the app. The study concludes by discussing how a Darwinian perspective on Alt-Right meme discourse explains the group's ability to remain resilient against outside influence.

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

98 • The Downside to "Pure" Maple Syrup S

Brice Hatch

Abstract

With the American public becoming more aware of the negative effects of food additives, more people are searching for natural or pure foods (Sullivan, 2009) and companies are marketing their products to match. This trend has impacted the maple syrup industry, making customers move away from the high fructose corn syrup-based products like Aunt Jemima and more towards syrups they see as being "pure" (Holmes, 2006). This project will examine the different tiers of the maple syrup industry, which includes the large commercial brands, "pure" maple syrup found in grocery stores, and the locally made products from grassroots operations. The project leaders' experience working on a grassroots maple syrup

operation will give context and insight on this industry that isn't readily available. The project finds that while mid-tier commercial brands are an improvement over the largest of the syrup brands, their marketing is misleading the public into thinking their products are more environmentally friendly and healthier than they truly are.

Subject Category

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

GEOGRAPHY AND SUSTAINABILITY STUDIES

29 • The Effects of the COVID-19 Pandemic on Social Movements 😒

Vic Creviston

Abstract

It is no secret that the SARS-COVID-19 pandemic left a rippling impact on virtually every aspect of society; however, as we see some of the effects of COVID-19 in the form of food shortages and rising prices of essential goods, many people are becoming more interested in understanding the ways the pandemic has affected our way of life. This research explores the multiple impacts of COVID-19 on social movements, with a particular focus on the many ways COVID-19 has both helped and hindered the objectives of these social movements. This poster highlights food justice movements in Buffalo and across New York State, specifically, and how COVID-19 has contributed to shifts in their organizing goals and strategies. My findings outline the key factors that have impacted food justice movements such as, 1) the ways in which the implementation of public health measures to protect people from the effects of COVID-19 have impacted local and state food systems, 2) the inequitable conditions faced by traditionally marginalized communities that have been exacerbated by the COVID-19 pandemic, and 3) how, despite the many negative ways the COVID-19 pandemic has impacted the success of community organizers, it has also had many positive outcomes such as expansion of community aid networks and increased accessibility in educational efforts.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies Faculty Sponsor Department Geography Faculty Sponsor Jessica Gilbert Funding Sources None

312 • Differences in Farm Labor Protections on the National and State Levels: Impact on Farmers and Farm Labor in New York S

Skylar Reed

Abstract

Using qualitative research methods, Skylar Reed highlights how recent state legislation has exacerbated existing tensions between New York farm owners and migrant farm workers. Until recently, the agricultural sector has not been included in the era of progressive labor reforms occurring in other sectors; however, new labor legislation in New York has created better working conditions for farm workers. Yet, these new policies now put New York farm owners at a competitive disadvantage compared to other states that use less restrictive national agricultural labor laws. Through content, policy, and interview analyses, Reed's research explores how the differences between farm labor laws enacted

in NYS and farm labor laws used in other states impact farmers and farm labor in New York. Reed's findings highlight discrepancies between national farm labor laws and New York farm labor laws and illustrate how these legislative changes are contributing to ongoing tensions between farm owners and migrant workers.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies Faculty Sponsor Department Geography Faculty Sponsor Jessica Gilbert-Overland Funding Sources None

111 • Spatial Analysis of Scattered Tree Loss in Livingston County, New York, 1938 to 2021 💋

Jack Cimorelli

Abstract

Scattered-tree agricultural landscapes possess ecological, cultural, and aesthetic value, yet they have seen 20th century decreases worldwide due to various land-use processes. This study analyzes the loss of scattered tree landscapes between 1938 and 2021 in Livingston County, New York State. Located in western New York, Livingston County encompasses the middle Genesee Valley, a noteworthy region since it contained extensive oak savannas purportedly once maintained by Native American (Onöndowa'ga:' [Seneca] people) fire use, and contains open-grown landscapes dominated by oaks today. Historical and contemporary aerial photographs and GIS are utilized to classify land use and quantify the change of scattered tree land units. Land use trajectories of scattered tree units are also examined in order to provide insight into the causes of tree loss, which were substantial over the time period. Preliminary results suggest a partial correspondence between historical oak savannas circa 1790 and scattered tree landscapes in 1938, suggesting that oak savannas were partially maintained through Euro-American land-use decisions (e.g. maintaining or modifying oak savannas as pastures).

Subject Category Social Science Categories: Geography Faculty Sponsor Department Geography Faculty Sponsor David Robertson Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

221 • Angkorian Temples in Mainland Southeast Asia: Cambodia, Laos, Thailand, Vietnam 9th - 15th Century

Sophuth Phon

Abstract

The Angkorian Era of the Khmer Empire (9th - 15th AD) is notable for its construction of numerous temples of high architectural heritage value, yet those temples have not been studied in depth. The spatial distribution of those temples, and their various historical characteristics, are also yet to be analyzed or mapped out. The purpose of this project is to spatially map the temple and discern if locations correlate to the region's geography. This project compiled primary data on 70 major Angkorian temples in mainland Southeast Asia using various sources but primarily Google Earth Pro and Humanitarian Data Exchange (HDX). Using a geographic information system application, QGIS, those data points (coordinates) were plotted, displaying a visual distribution of those temples. In addition to their locations, data such as their year of construction, construction material, dedicated religion, and elevation were collected. Results revealed major hotspots of temple construction. The spatial analysis based on mapping accentuates previous findings that the concentration of temples are on the Tonle Sap basin and the Khorat Plateau, which were connected by a complex

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transportation network. Other factors also appear to influence such distribution including access to stone quarries, water abundance, and agricultural land. Sandstone and laterite were the most common building materials. Although the project is rather incomplete due to lack of coherent resources and time limitations, it points toward future in-depth studies of the architectural importance of the Angkor Empire, and paves way for studying the kingdom's way of life.

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

339 • Analyzing Lake-Effect Snowfall in the Buffalo Area using Interpolation ${\cal S}$

Gabrielle Puente

Abstract

The City of Buffalo, New York is located in western New York State near two Lakes: Lake Ontario to the north, and Lake Erie to the west. The Great Lakes region that includes Buffalo is subjected to a phenomenon known as lake-effect snow, where surface buoyant instability and upward moisture movement from the Great Lakes can cause extreme snowfall in localized bands. The purpose of this project is to analyze the total amount of snowfall that occurred on a specific lake-effect snowfall event in November 2022, termed "Snowvember 2.0" (November 2022 Great Lakes Winter Storm). Snowfall data was obtained from the National Centers for Environmental Information and from the National Weather Service's National Operational Hydrologic Remote Sensing Center. The data used remote sensing techniques to interpolate the data acquired to understand the snowfall event, and where amounts were seen in abundance. Snowfall amounts in inches were obtained from each day of the storm (approximately November 17-20, 2022). The highest snowfall amount seen over the weekend was approximately 81" in the Hamburg area, and the majority of the snowfall occurred during the Friday and Saturday of the weekend south of the City of Buffalo. Buffalo received 3.1" in a 1-hr period. Understanding this mesoscale phenomenon such as the one experienced in November 2022 is crucial for planning response and recovery for future devastating winter storms.

Subject Category

Social Science Categories: Geography

Faculty Sponsor Department Geography and Sustainability Studies Faculty Sponsor Stephen Tulowiecki Funding Sources

None

44 • Comparative methods for paleomagnetic research: Alternative Field Demagnetization and Thermal Demagnetization

Griffin Merkling, Mai Nguyen-Jeanneret

Abstract

When a rock cools from magma or metamorphism, the magnetic field of the ferrous material in the rock aligns with the Earth's magnetic pole. Progressive demagnetization provides the chance to distinguish between primary magnetizations (cooling) and secondary magnetizations (weathering). Multiple samples from a basaltic outcrop near the northern border of Ecuador were tested to determine which method would be more successful at effectively demagnetizing the rock to determine if it has a stable, reproducible paleomagnetic signal. In this experiment Alternative Field Demagnetization was more successful.

Subject Category

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

210 • Environmental Diatom Record of Conesus Lake (Western New York)

Jack Masman, Julia Rogerson, Kaitlyn Gerstler, Katherine Burns, Emily Abbati, Carlo Tobia

Abstract

This study aims to show a geohistorical record of Conesus Lake, the westernmost Finger Lake in western New York (Livingston County, NY). Changes in diatom population can be used to identify significant historical events that significantly alter lake conditions. Categorized as a mesotrophic lake, Conesus Lake has undergone environmental changes such as the introduction of invasive taxa throughout the 20th century, along with water quality issues that are still affecting the lake health despite remediation efforts since 2006. To track these environmental events, diatoms are commonly used because they are multi-proxy indicators of lake pH, temperature, salinity, light availability, and lake circulation.

The south basin of Conesus Lake was assessed for diatom population from a piston core collected at 17 meters in depth resulting in 127 cm of sediments. These cores were split, imaged, and analyzed for both magnetic susceptibility and XRF using a multi-sensor core logger. Sediments were sub-sampled at strategic intervals and digested in nitric acid to remove all but siliceous material. After digestion, 6 dilutions were performed, ammonium chloride was added to aid in dispersion. The solution was mounted on Optical and Scanning electron microscope slides. The core was sub-sampled at one cm increments for 210-Pb dating at St. Croix Watershed Research Station along with loss on ignition analysis. Diatom populations were gathered by viewing each slide under an optical microscope at 40x magnification. Diatoms were counted up to 300 single valves per slide, individual whole valves were counted, complete frustules were counted as two individuals.

Subject Category

Science and Mathematics Categories: Geological Sciences Faculty Sponsor Department Geology Faculty Sponsor Jacalyn Wittmer Malinowski

Funding Sources

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

GLOBAL LANGUAGES AND CULTURES

154 • Speaker attitudes of university students in the Canary Islands

Erin Eivers

Abstract

Many people understand the Spanish language, but a great number of people do not know that there are multiple dialects. There are eight varieties of Spanish: castellano, andaluz and canario in Spain; caribeño, mexicanocentroamericano, andino, chileno and rioplatense in America. For many, the origins and histories of the dialects mentioned are unknown as a result. Based on bibliographical research of peer-reviewed articles, this paper describes the variety of Spanish in the Canary Islands, its history and evolution, and speaker attitudes in the capital city of Las Palmas. To fully understand the dialect of the Canary Islands, the language's origins must be examined. Specifically, the attitudes of students toward their variety in the Canary Islands will be the main focus. Additionally, the language's
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evolution, as well as the history of the Canarian Islands, will be explored to put in perspective and explain those language attitudes.

Subject Category Interdisciplinary and Other Categories: Linguistics Faculty Sponsor Department Global Languages and Cultures Faculty Sponsor Susana Castillo-Rodriguez Funding Sources

None

58 • How and why learning a language ?

Florence Julia **Abstract** My presentation will be in three parts: - First , why learning a language ? -Second , all the benefits you can get from it -Third , practical advice on how to do it **Subject Category** School of Education Categories: Adolescence Education: English **Faculty Sponsor Department** Global Languages & Cultures **Faculty Sponsor** Jasmine Tang **Funding Sources** None

MATHEMATICS AND ENVIRONMENTAL STUDIES

302 \bullet Trimming the Fuzzy Ontology of Climate Change with a Biodegradable Fork ${\cal S}$

Sophia Turturro, Mollie McMullan

Abstract

Climate change, as a nonlocal, atemporal, vast expanse of interrelated events cannot be experienced in its entirety by the individual. So, popularly, it's conceived of as a hazy abstraction whose lack of experiential impact restricts it to a peripheral existence. Often, the dizzying breadth of an individual's consumer choices in relation to climate change lulls to a white noise, able to be parsed into distinct effects only with conscious effort—an effort made evermore avoidable in the dissociative social structure under late-stage capitalism. Consumer options that are concrete, readily available, and tacitly endorsed by their visible use are thus the best remedy to de-facto climate change avoidance behavior—the realm of convenience needn't be made of plastic. Like other colleges in the country, SUNY Geneseo's dining hall could replace disposable styrofoam to-go containers and plastic cutlery with reusable and biodegradable alternatives. An accurate conceptualization of climate change is unattainable to the average individual who can only experience three dimensions (unfortunately) so the locus of behavioral change should be in the concrete and compulsory; preserving nature means priming second-nature.

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Environmental Studies Faculty Sponsor Ahmad Almomani Funding Sources None

263 • Housing and Integrating Bats into the SUNY Geneseo Campus Ecosystem 💋

Hailey Cullen, Gabrielle Joseph

Abstract

This presentation centers on research conducted on building a sustainable prototype design of a bat box. We focused on configuring the implementation of bat boxes around the SUNY Geneseo campus as well as the optimal materials to use in the building of this prototype.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources

None

10 • Determining the Effect of the Pyramid Shape on Compost Microorganismal Growth and Smell \mathcal{G}

Elizabeth Klosko

Abstract

SUNY Geneseo's campus has a compost collecting program where students, faculty, and staff can empty their compostable items into bins which are collected weekly. However, the bins release a putrid scent when opened, deterring SUNY Geneseo community members from using them. Certain scientists theorize and have shown that the pyramid shape, when exactly scaled to the size of the Great Pyramid of Giza, has properties that can limit the growth of microorganisms and therefore reduce foul smell. Using a 3-D printing device, we scaled the Great Pyramid of Giza to the size of the current personal compost buckets. Then, we extracted both bacterial and fungal DNA from the samples and used statistical testing to determine if the new bucket design significantly reduces microorganismal growth and foul scent.

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

344 • Sustainability of Dining Menu Choices 💋

Logan Linares

Abstract

This presentation features the source code for a dining menu app that will display students the current options available at CAS locations on campus, each including calorie and other nutrition facts, and allow students to make selections. Also included will be average gallons of water used to produce the students' selections, and will encourage students to make selections that are more sustainable for the environment. Once the user has made their final selections, the code will

calculate average number of gallons of water used to produce the student's meal, and compare that to the number of calories in the meal, and give the students a gallons per calorie figure. The lower this figure is, the more sustainably produced the students' meals are. There will also be a credit offered to students that get more sustainably produced meals. This credit can be optionally implemented by the writer, or left out if so chosen.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

257 • Increasing Plant-Based Options on College Campuses to Reduce Greenhouse Gas Emissions S

Gianna Minnuto

Abstract

Increasing the amount of plant-based options on college campuses could lead to great decreases in carbon emissions, and an improvement in student health, nationwide. Expanding the plant-based options on the SUNY Geneseo campus could encourage students to convert from a meat-based diet to a plant-based diet, which could contribute to a drastic decrease in greenhouse gas emissions from college campuses in the United States. SUNY Geneseo should consider expanding the plant-based options offered in its dining halls to better accommodate students who embrace or are interested in consuming a plant-based diet, which in turn would help decrease greenhouse gas emissions and increase student health on campus.

Subject Category Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Ahmad Almomani Funding Sources None

179 • Creating a Bike-Friendly Campus 💋

Lucas Schaffer

Abstract

This presentation will concern the efficacy of biking as an alternative transportation solution around Geneseo. The SUNY Geneseo campus is not very bike friendly, as it lacks bike lanes, bike racks are placed sporadically around campus, and there is little indoor storage for bikes in most dorms. Encouraging the use of bikes or electrical bikes may not only improve the physical health of students, but it may reduce the carbon footprint of Geneseo students in the long-term. I will consider the environmental impact of an electrical bike program, necessary renovations to create a bike-friendly campus, and the feasibility of transforming Geneseo into a bike-friendly or electrical-bike friendly, environmentally sustainable campus.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

Mathematics Faculty Sponsor

Ahmad Almomani

Funding Sources

MATHEMATICS

338 • The History of the Cycloid

Claire Barton

Abstract

This essay can serve as an introduction to many of the great mathematicians of the 17th century. Many big names in math were intrigued by and worked with the cycloid including but not limited to Renè Descartes, Blaise Pascal, Pierre de Fermat, and Christiaan Huygens. I will touch on their interactions within which their collaborations helped build what they knew about the cycloid. The cycloid was initially discovered through attempts to find the area of a circle with integration. After working with the cycloid for some time, mathematicians found many different applications of it. This includes integration, physics, and pendulums. Many of the discoveries pertaining to the cycloid happened simultaneously in different parts of the world, so telling the story of the cycloid has some difficulties being chronological, but it is interesting to see the crossovers.

Subject Category

Science and Mathematics Categories: Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Jeff Johannes Funding Sources None

77 • Modeling the Effects of Location and Service Area of a Mobile Stroke Unit on the Probability of a Good Outcome for Stroke Patients

Olivia Lopez

Abstract

Stroke is a leading cause of death in the United States and can also cause major disability in survivors. Time is an extremely important factor for the outcomes of stroke patients; the more time before a stroke patient receives treatment, the worse their outcome is likely to be. Mobile stroke units (MSUs) are large ambulances with a computed tomography scanner, staffed with personnel capable of reading the scans and administering medicine capable of treating thrombotic strokes. There is currently a MSU in Rochester, NY that services Monroe County. Based on the number of times the MSU was dispatched on an average day, a model was constructed to generate 911 stroke calls at random times and locations. Four scenarios were examined, varying the post location of the MSU and the area that it services, aiming to discover the scenario that results in the highest average likelihood of good patient outcomes. A good outcome was defined as a score of 0-1 on the modified Rankin scale (mRS). Scenario 1 was the control, only servicing Monroe County, and scenarios 2-4 had the MSU servicing both Livingston and Monroe Counties from three different post locations. There were no significant differences found between the four scenarios. Expanding the service area of the MSU to Livingston County would not have a negative impact on patient outcomes.

Subject Category

Science and Mathematics Categories: Applied Mathematics

Faculty Sponsor Department Mathematics Faculty Sponsor Christopher Leary

Funding Sources

187 • Modeling the Dynamics of Chromosomal Alteration Progression in Cervical Cancer: A Computational Model

Michael Mascitti

Abstract

Cervical cancer is a complex disease characterized by unpredictable genetic alterations of cells. Computational modeling may be applied to simulate the growth and behavior of cervical cancer within a tissue and the progression of the disease throughout the body. In our computational model, individual cells have the ability to transform behavior between the following states: healthy, precursor lesion (CN1, CN2, CN3), and cancer. Each cell state has a different mutation rate, reproductive rate, and cell life span. Our model simulates the transformation of cells into these different states. The data from our computational model shows the day-to-day growth of cancer within a tissue, and the progression of a cell evolving from healthy to cancerous. Our model suggests how cancer cells become dominant over time within a system and outgrow healthy tissue. Alterations to this model may help determine effectiveness of treatments on individual cells.

Subject Category

Science and Mathematics Categories: Biology Faculty Sponsor Department Mathematics Faculty Sponsor Christopher Leary Funding Sources None

OFFICE OF SUSTAINABILITY

267 • Compost at Geneseo: A Geneseo Community Effort S

Kayla Andersen, Marissa Terry, Yarold Bautista Martinez, Dante Herbel, Jordan Davis, Katelyn Adis Abstract

Compost began on the Geneseo campus in 2010 as an effort to divert organic waste; the Grounds unit of the Geneseo Facility Services started transporting yard scraps collected from campus upkeep to what would later become the Geneseo Compost Pile. In 2014, Campus Auxiliary Services (CAS) began to compost pre-consumer waste. Two huge steps that shifted the course of organic waste at Geneseo began in 2018 with the establishment of the student-led Geneseo Compost Program and Red Jacket Dining Hall's installation of a pulper allowing the newly returning Dining Hall to compost post-consumer waste; both major strides toward becoming a more sustainable campus. This poster presentation will cover the role that different groups on campus play in the way that we, as an institution, manage and divert our organic waste. This presentation will also cover both the data collected by and the different branches of the Campus Compost Team. Among the groups in the Campus Compost Team, there is the Collection and Education group which has bi-weekly runs to establish composting in residence halls and academic buildings. This group is composed of Kayla Andersen, Marissa Terry, Yaro Bautista, Dante Herbel, Jordan Davis, and Katelyn Adis. Other groups involved in the Campus Compost Team are the Residence Hall Sustainability Representatives, the faculty and staff members who compost and take out bins on a weekly basis, CAS, Grounds, and Administrative supporters such as Shane Abbott, Meg Reiz, Anne Baldwin, and the Office of Sustainability: Dan Dezarn, William McDevitt, and Lauren Goulet.

Subject Category

Interdisciplinary and Other Categories: Sustainability Studies

Faculty Sponsor Department

Office of Sustainability

Faculty Sponsor

Dan Dezarn Funding Sources None

PHYSICS AND ASTROMONY

25 • Misconceptions in Mechanics - Using Interactive Demonstrations to Promote Physics Learning

Nicole Lallier

Abstract

Physics education researchers have identified a number of specific physics ideas that pose conceptual difficulties for students in introductory physics classes. These physics misconceptions occur as novice preconceptions or general misunderstandings, and have been cataloged for different subfields of physics.¹ This undergraduate physics education research project involves creating several physical demonstrations to act as visual aids for students to clarify their understanding of mechanics concepts. These demonstrations can be recreated by educators seeking to provide supplemental instruction while teaching physics concepts. To measure the impact of such demonstrations, SUNY Geneseo undergraduates were invited to a physics demonstration show, presented using a modified version of research-validated techniques developed by Sokoloff and Thornton.² Pre- and post-tests were analyzed to determine whether the demonstrations help to dispel commonly held misconceptions.

¹Daud, N. S. N., Karim, M. M. A., Hassan, S. W. N. W., & Rahman, N. A. (2015). "Misconceptions and Difficulties in Introductory Physics Among High School and University Students: An Overview in Mechanics." EDUCATUM Journal of Science, Mathematics and Technology, 2(1), 34 - 47.

²Sokoloff, D. R. & Thornton, R. K. (2004). Interactive Lecture Demonstrations - Active Learning in Introductory Physics. John Wiley & Sons Inc.

Subject Category

Science and Mathematics Categories: Physics

Faculty Sponsor Department

Physics & Astronomy

Faculty Sponsor

Kurt Fletcher

Funding Sources

Other External Grant, Other Source of Support

260 • Rutherford Backscattering Spectroscopy Analysis of MTW Debris Shields

Vincent Picciotto, Yuki Watariguchi, Kevin Cerda

Abstract

A set of debris shields used at the Multi-Terawatt (MTW) Laser Facility at the Laboratory for Laser Energetics was analyzed using Rutherford Backscattering Spectroscopy (RBS). The debris shields consisted of microscope cover slips positioned directly behind a thin copper target. The copper was then irradiated by the MTW laser, blasting matter from the rear of the target onto the debris shield. RBS analysis of the debris shields was carried out using ion beams from the SUNY Geneseo 1.7 MV Tandem Pelletron Accelerator. The ion beams had energies of up to 3.0 MeV for protons and 4.5 MeV for alpha particles, each of which struck the debris shields. The energy spectrum of the backscattered ions were measured, revealing an energy peak consistent with that of a layer of copper near the center of the shield. The ion beam was focused so that it struck different positions on the debris shield, and the intensity of the copper peak was measured as a function of position. RBS allows the concentration and depth of the target material in the debris shield to be measured, which can be used to infer information about the energy and intensity of the copper ions accelerated by the laser in the MTW experiments. This project was funded in part by the US Department of Energy through the Laboratory of Laser Energetics.

Subject Category

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

159 • New Method to calculate self-force during inspiral into a Kerr black hole

Balor Brennan

Abstract

We are modeling gravitational waves from extreme mass ratio inspirals (EMRIs) by calculating the Kerr self-force with methods that avoid time-instabilities encountered in previous work. To develop methods that will be applicable to gravitational perturbations, we examine a toy model consisting of a scalar charge orbiting a Kerr black hole. We will avoid instabilities by separating the "t" variable, and the "phi" variable was separated for simplicity. This leads to elliptic partial differential equations (PDEs) with "r" and "theta" derivatives which are solved via the finite difference method. Preliminary results will be presented to demonstrate progress towards these goals. Our eventual results will enhance theoretical models of gravitational waves detected by the Laser Interferometer Space Antenna (LISA).

Subject Category

Science and Mathematics Categories: Physics Faculty Sponsor Department Physics Faculty Sponsor Thomas Osburn Funding Sources Other Source of Support

160 • History Dependence of Self-force During an Extreme Mass-Ratio Inspiral

Charles Derbyshire

Abstract

Perturbation models of gravitational waves produced by an extreme mass-ratio inspiral (EMRI) often involve simplifying assumptions that introduce accumulating errors. One common assumption, which we are correcting for, is that the small object in the EMRI system has historically followed a fixed geodesic. To improve this aspect of EMRI models, we apply a two-timescale expansion to the Teukolsky equation for quasi-circular non-spinning EMRIs. By including the next term in the two-timescale expansion, we will account for past properties of the orbit. We have already solved the Teukolsky equation for perfectly circular orbital motion, and compared these results with past work. We now turn our attention to the next term in the two-timescale expansion, which will account for history dependence of the gravitational perturbations and self-force.

Subject Category

Science and Mathematics Categories: Physics Faculty Sponsor Department Physics Faculty Sponsor Thomas Osburn Funding Sources Other External Grant, Geneseo Foundation Undergraduate Summer Fellowship

224 • Numerical solving the Teukolsky equation for modeling gravitational waves

lan 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 & Astronomy Faculty Sponsor Thomas Osburn Funding Sources Geneseo Foundation Undergraduate Summer Fellowship

248 • A Planetarium walkthrough of our solar system and the recent findings of the JWST

Balor Brennan

Abstract

Astronomy gives us insight into the observable universe, providing context to celestial objects and allowing for an imaginative view of the system we live in. The Digitarium Portable Planetarium System run by Nightshade grants an easier way to survey our celestial sphere and explore our solar system. Space offers multitudes of topics covering galaxies, stars, black holes, constellations and more. This planetarium show will take us through the solar system and observe all the stars within our night sky and explore the prospective features of the James Webb Space Telescope (JWST) and how it offers more horizons for our understanding. The talk will be hosted in the basement of Newton Lecture Hall projected from the Digitarium to provide a real view of our atmosphere. To give a better understanding of where we stand on our planet, the planetarium presents a wide scope of objects as viewed from Geneseo and other planets.

Subject Category

Science and Mathematics Categories: Physics Faculty Sponsor Department Physics and Astronomy Faculty Sponsor Aaron Steinhauer Funding Sources None

POLITICAL SCIENCE AND INTERNATIONAL RELATIONS

299 • The State of State Legislatures: The lack of oversight in state governments and its consequences

Mikayla Anderson

Abstract

In the United States, state governments are an enigma. For the most part, the state government goes unnoticed, with little interest coming from the people or the press. However, despite this state governments are able to produce much

more legislation in comparison to the federal government. Looking into the advantages and disadvantages of the aspects of the state government and the factors that have lead to a lack of knowledge or interest in state politics, I will examine how we can increase political participation in state governments in order to properly represent the electorate.

National politics have been sensationalized in the media and have constant coverage while state governments do not get as much attention. This has a large impact on political participation and accountability causing an environment in which the lack of oversight combined with a lack of resources hides the rise in interest groups within the lower levels of government.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department

Political Science and International Relations Faculty Sponsor Hanna Brant Funding Sources None

316 • How a Student's Identity and Demographics Influences their Knowledge on Global Affairs

Emily Schofield

Abstract

Through examining the intersection of identities of the public and global affairs, we can better understand the public's knowledge to advance policy and actions directly applicable to the constituency by state or non-state actors. Through my research in the McNair Program, I have focused on the demographics of students in relation to their knowledge and understanding of global affairs by examining their backgrounds, interests, and involvement within student life.

Subject Category

Interdisciplinary and Other Categories: International Relations

Faculty Sponsor Department Political Science and International Relations Faculty Sponsor Hanna Brant Funding Sources

McNair Scholars Program Support

85 • An Ontological Argument for International Cooperation

Eugene Bullock

Abstract

In international relations, constructivist theory has been effectively employed as a tool for better understanding the ways in which human society interacts. By exploring the identities of actors on individual, state and international levels, constructivism can help explain why these actors make the decisions they do in the spheres of security and cooperation. This presentation applies the constructivist argument of ontological action to cooperation among states partaking in international organizations. By exploring past and current examples of interactions among states within international organizations this presentation ultimately seeks to begin the search for more efficient means of international cooperation. Examples will be drawn from states' identities themselves and the convergence (or divergence) of identities between member states within international organizations. For instance, the Association of Southeast Asian Nations (ASEAN) has been able to effectively coordinate due to the identity of authoritarian, elitist governments that the organization's member states share. In addition, I rely on previous observations from a wide range of constructivist authors to help explain how constructivist and ontological arguments can shed light on how international organizations and their interactions can be improved. This specific area of international relations is one that has not yet been written

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about, and so I hope to establish more robust theories regarding state relations in the context of international organizations.

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

Andrew Hart Funding Sources None

301 • The Attitudes of First- and Second-Generation Asian-Americans and Latinx-Americans Towards Immigration Policies

Kim Leila Sukee

Abstract

In 2012, the Obama administration initiated the Deferred Action for Childhood Arrivals which provides undocumented immigrants protection from deportation and authorization to work in the United States for two years. Since then, immigration and the status of undocumented immigrants continue to be some of the most controversial issues in American politics. This research provides a comparative analysis of the attitudes of first-generation and second-generation immigrants across Asian and Latinx groups on policies such as the DACA program, the DREAM Act, and Title 42. It is worth exploring whether or not the immigrant experiences of each group influence their views on such policies.

Subject Category

Social Science Categories: Political Science

Faculty Sponsor Department Political Science; Psychology Faculty Sponsor Anand Rao; Anjoo Sikka

Funding Sources McNair Scholars Program Support

PSYCHOLOGY AND NEUROSCIENCE

38 • Empathic Concern Predicts Environmental Intentions Via Mediators Connection to Nature, Empathy for Nature, and Environmental Values

Liam Adams, Brigid Carolan, Jacob Foster, Joseph Vafis, Alyssa Murdock

Abstract

Research shows that empathic concern (EC) for other humans predicts environmental intentions (EI). However, the mediators between these two variables are not identified. Research suggests that dispositional empathy toward nature (DEN) (Tam, 2013), and connection to nature (CNS) might mediate the relation (Mayer & Frantz, 2004). Therefore, we predicted that CNS, DEN, and NEP would mediate the relation between EC and EI. Participants were 201 college students from western New York. Results were analyzed using SPSS PROCESS model 6. The total effect of EC was significant. However, there was no direct relation between EC and EI when the mediators and covariate were included. The total indirect relation was significant. These results may explain why EC predicts EI. Although the fully mediated model was not supported, CNS emerged as an important mediator. EC for other humans seems to foster connection to nature, perhaps by making it easier to include nature as part of oneself. Although there were two separate and weaker paths, one going from CNS through DEN, and the other going from CNS through NEP, connection to nature seems like the essential mediator between EC and EI.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor James Allen Funding Sources None

70 • Red and Blue Don't Just Make Purple: A Deep Dive Into Gun Deaths Across the Country

Brigid Carolan, Joseph Vafis, Alyssa Murdock, Jacob Foster, Liam Adams

Abstract

As political attitudes have polarized over time, especially surrounding the issue of gun policy, deaths by firearm have changed accordingly. We measured how blue and red voting influenced the amount of change in all intent gun deaths through the years 1999 to 2016 by county across all 50 states. Using data from Rees et al. (2022), researchers charted the distributions of gun fatalities by all intents, including suicide and homicide, adjusted for population. We cross-examined these data with presidential election results (red vs blue) for the 2000 and 2016 election years. Research demonstrates the vast amount of red counties with high indexes of all intents gun fatalities. Results reflect how the changing political landscape of the United States and lack of attention to gun policies affect quality of life.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor James Allen Funding Sources None

72 • The Effect of Political Polarization on Quality of Life in the US

Joseph Vafis, Alyssa Murdock, Jacob Foster, Brigid Carolan, Liam Adams

Abstract

We set out to measure multiple factors that determine quality of life in red and blue states. We sampled research published between 2000 and 2023. Articles were selected using google scholar, cited research, and PsychInfo. Such factors include infant mortality, teen pregnancy, education levels, life satisfaction, and covid deaths. In general, we found that quality of life appears to be higher in blue states. While this is not a comprehensive deep dive into all factors affecting life quality, we feel these variables represent wrongly politicized issues that impede on personal freedoms. This results in a larger effect on life quality.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor James Allen Funding Sources None

351 • Drinking in the Dark (DID): A Mouse Model of Keto Influenced Binge-Like Alcohol Intake in the C57BL/6J Mice

Alana Ága

Abstract

Binge drinking is a widespread problem that can have serious consequences for health and social behavior. Previous studies have shown that a ketogenic diet (KD) can reduce alcohol intake in rodents, but the underlying mechanisms are not fully understood. In this study, we used C57BL/6J mice to investigate the effect of a high fat KD diet on binge-like alcohol intake, and to determine if this intervention could lead to long-term changes in drinking behavior. Our results demonstrate that mice on a KD diet consumed less alcohol compared to those on a standard diet. Interestingly, female mice were found to be more susceptible to binge drinking than males, regardless of diet. Additionally, our findings suggest that a KD diet may produce lasting effects of drinking aversion, as mice on this diet consumed less alcohol intake and highlights the potential of a KD diet as a therapeutic intervention for individuals struggling with binge drinking. These findings suggest that dietary interventions may offer a promising strategy for reducing alcohol consumption in humans.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department Neuroscience Faculty Sponsor Dr. Allison Bechard Funding Sources None

171 • The Effects of Caffeine on Dopamine and Motor Behavior in Mice

Cinta Renaldi, Sara Gomez Calderon

Abstract

Caffeine is a widely known psychoactive stimulant that acts on the central nervous system. It is the most widely used psychoactive drug in the world. As an adenosine receptor antagonist, caffeine enhances cognition, attention, and alertness. Previous studies have examined the effects of caffeine on motor performance and the brain. Caffeine enhances dopamine in the brain primarily by antagonizing adenosine A2A receptors (A2ARs). Motor performance and behavior in mice are measured by a range of tests that measure balance, forelimb strength, and spontaneous movement. The purpose of the present pilot study is to determine the effects of caffeine on behavior and dopamine expression in the striatum where A2ARs are located. An intraperitoneal injection of 5 mg/kg in sterile saline and caffeine were given prior to locomotor, grip strength, and rotarod tests. We hypothesized that there would be an increase in locomotor activity, rotarod performance, and grip strength following caffeine administration. In addition, we predicted an increase in dopamine signals in the striatum.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

McNair's Scholars; Psychology and Neuroscience

Faculty Sponsor

Daniel Islam, Allison Bechard

Funding Sources

McNair Scholars Program Support

345 • The Effects of Alcohol and Ketogenic Diet on Working Memory

Kaitlyn Dufresne, Sophia Azurin, Dr. Allison Bechard

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Abstract

The ketogenic diet (KD) is a high fat, low carb diet which is growing in popularity as a possible method to improve working memory and prevent alcohol use disorder (AUD). We used a mouse model where half of the mice were fed a standard diet (SD) while the other half were fed the KD. All mice experienced a 7 week drinking period where they were introduced to alcohol for 2 hours, 3 days a week. We then tested the mice in a working memory task. We modeled working memory using the Barnes maze. Mice escaped to a target hole in the maze using spatial cues. Each of the 4 trial days, a new target hole was chosen. We found no correlation between alcohol and maze performance and KD improved working memory independent of alcohol use history.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department Neuroscience Faculty Sponsor Allison Bechard Funding Sources None

178 • Ketogenic diet and social behavior in a mouse model of autism spectrum disorder

Macy Kuebler, Abigail Grzeskowiak, Emily Trabulsi, Abigail Schwartzman, 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. This developmental condition is increasing within the United States, yet no cure is currently available. Ketogenic diet (KD) is a high fat, low carb diet proven to help many neurological issues in humans and reduce repetitive behavior in the mouse model. This study uses a FVB mouse model predisposed to developing stereotypical behaviors, specifically, repetitive circling to investigate the effects of KD on social and repetitive behavior. Subjects were old and young mice fed KD or standard chow, and estrous was monitored for subjects and stranger mice used to measure social behavior. Here, we hypothesized that KD intervention would increase social interaction and decrease repetitive behavior. We found that KD increased social behavior in the young, but not old, mice when compared to subjects fed a standard diet.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department Psychology and Neuroscience Faculty Sponsor Allison Bechard Funding Sources None

156 • The effects of environmental enrichment on repetitive circling behavior in mice

Shannon McElderry, Thomas Sheehy, Maddie Forcier

Abstract

Stereotypic behaviors are associated with many neurological and neurodevelopmental disorders, and are characterized as repetitive, invariant and functionless motor movements. The diagnostic criteria for Autism spectrum disorder (ASD) includes the presence of these repetitive behaviors. Despite the increasing prevalence of ASD in the US and the potential for stereotypic behaviors to disrupt daily functioning, there is no effective treatment. Early environmental deprivation can also induce stereotypic behaviors, and enriching environments can reduce stereotypic behaviors. Here, we employed an environmental enrichment (EE) paradigm in mice and hypothesized that EE would reduce repetitive motor behaviors and increase indirect basal ganglia functioning. FVB mice used were predisposed to developing stereotypical behaviors, specifically, repetitive circling. We found that repetitive spinning behaviors develop more quickly in female

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than male subjects. Thus, females regardless of rearing environment showed increased spinning behavior compared to male subjects. Within sex, we found that mice reared in EE reduced spinning behavior compared to those reared in standard environments.

Subject Category Science and Mathematics Categories: Neuroscience Faculty Sponsor Department Psychology and Neuroscience Faculty Sponsor Allison R. Bechard Funding Sources Geneseo Foundation Undergraduate Summer Fellowship

157 • Motor performance in mice fed a ketogenic diet

Thomas Sheehy, Sophia Azurin, Zach Rissman

Abstract

For the past century, ketogenic diets (KDs) have been an effective means at treating epilepsy disorders. More recently, research points to KD's ability to improve symptoms of Parkinson's disease, Autism Spectrum Disorder (ASD), and addiction. KD is a high fat, low carbohydrate diet that increases production of ketone bodies, which can promote mitochondrial and neuron function. Motor learning in mice refers to the ability to change and adapt movements to various environmental demands. We performed a KD intervention in conjunction with motor tests and hypothesized that KD would improve motor learning in mice over time, compared to mice fed a standard diet (SD). Rotarod tests, locomotor assay and grip strength tests were administered to assess motor performance. FVB mice that were genetically predisposed to stereotypic spinning were used.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience Faculty Sponsor Allison R. Bechard Funding Sources Sorrell Chesin '58 Research Award

305 • Cannabis use Among Gender and Sexual Minority College Students

Karla Mejia, Madison James, Samantha DeGrandis

Abstract

Previous research has found an increased risk for substance use in sexual and gender minority (SGM) identifying individuals. Broadly, within the age groups of college students and emerging adulthood, heightened rates of marijuana use have been observed for individuals endorsing a sexual and/or gender minority identity (Dunbar et al., 2022). The current study will examine associations between college students' rates of marijuana use and the endorsement of a SGM identity status. Participants (N= 150; Age =19.2, SD = 1.7) reported on their sexual and gender identity and completed self-report measures, including the Difficulties in Emotion Regulation Scale (DERS; Gratz & Romer, 2004), the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU; Cuttler & Spradlin, 2017), and the Marijuana Motives Measure (MMM; Simons et al., 1998). We hypothesized that SGM individuals would report increased marijuana use quantity and frequency, and use of marijuana to cope with negative emotions when compared to their heterosexual and cisgender counterparts. Preliminary research suggests higher rates of poor emotion regulation and cannabis use to cope with negative emotions among sexual minority youth. Future analyses will suggest the need to address cannabis use disparities between SGM students and their heterosexual and/or cisgender counterparts, helping to identify targets for intervention.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Whitney C. Brown Funding Sources None, McNair Scholars Program Support

176 • Cannabis Use Modality and Emotion Regulation Strategies

Trystan Melas

Abstract

Despite recreational cannabis use's increase in popularity in recent years, there is a dearth of research on the commonality of cannabis use modalities. Additionally, emotion regulation is the ability to adequately respond to one's emotional experiences, yet there is little research connecting emotion regulation and cannabis use modality. This study aims to assess the ways in which emotion regulation may be associated with cannabis use modality as measured by the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU; Cutler & Spradlin, 2017). Participants were SUNY Geneseo students (N = 70) studying psychology who completed an online survey of their cannabis use modality and emotion regulation strategies. Point biserial correlations were used to examine the relationship between the 18-item Difficulties in Emotion Regulation Scale (DERS-18; Gratz & Roemer, 2004), its subscales, and four items on the DFAQ-CU. It was hypothesized that the overall DERS-18 scores as well as the goals, clarity, impulse, and strategy subscales would positively correlate with the items on cannabis use modality in the DFAQ-CU. Preliminary results suggest there are significant correlations between the modes of cannabis used (i.e., marijuana flower, concentrates, or edibles) and the goals, clarity, and strategy subscales of the DFAQ-CU. Future analyses will address whether individuals' emotion regulation strategies influence multiple preferred modes of cannabis use.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Whitney Brown Funding Sources None

119 • Aggression and Rough and Tumble Play Between Middle Childhood and Adolescence

Ava Byroads, Meghan Noble, Victoria Page, Anna Shephard, Lena Kiehl Abstract

As part of a longitudinal study of sibling and friend relationships, we analyzed aggression and rough-and-tumble play in middle childhood and adolescence. A sample of 148 Caucasian, middle-class 7-year-olds and 17-year-olds were videotaped at home in semi-structured sessions with siblings and same-aged friends. The videotapes were transcribed and coded for the presence of relational, verbal, and physical aggression and rough-and-tumble play. Episodes of aggression and RTP were further coded for duration, affective intensity, and interactional context, motivation, and response type.

At age 7, there were strong correlations among all three forms of aggression and between aggression and RTP, for both sibling and friend sessions involving both boys and girls. The same was true at age 17, with particularly strong correlations between relational aggression and all three forms of RTP. Overall, there was little cross-time, within-category correlation for aggression or RTP. However, sibling relational aggression at age 7 was positively correlated with all forms of aggression and RTP with both siblings and friends at age 17.

In both middle childhood and adolescence, boys and girls who were likely to engage in aggressive behaviors were also likely to engage in RTP. There seems to be relatively little continuity in levels of aggression or RTP from middle childhood

to adolescence. However, there does seem to be a connection between relational aggression in middle childhood and various forms of RTP in adolescence, perhaps reflecting continuity in social cognitive skills involved in both relational aggression and playful versions of aggressive behaviors.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart Funding Sources None

311 • Sibling Dyads' Perceptions of Their Relationship in Adolescence and Early Adulthood

Isabelle Cook, Adele Beltrani, Emma Richards, Natalie Thurston

Abstract

As part of a longitudinal study, we examined siblings' perceptions of their relationship in adolescence and early adulthood. Twenty-five sibling dyads completed questionnaires about their relationship during adolescence and early adulthood. The adolescent questionnaire was an age-adjusted questionnaire developed for use in the study; it included five scales (Asymmetry, Intimacy, Prosocial/Harmony, Relational Aggression, and Conflict). For the early adulthood phase, we used the Adult Sibling Relationship Questionnaire (Stocker et al., 1997); it included 12 scales (Similarity, Intimacy, Quarreling, Affection, Antagonism, Admiration, Emotional Support, Competition, Instrumental Support, Domination, Acceptance, and Knowledge).

Correlations among scales on the questionnaires reveal considerable coherence in the sibling relationships at both ages and some continuity between adolescence and early adulthood. On the adolescent questionnaire, siblings showed strong agreement on their ratings of the amount of prosocial behavior/harmony and conflict in their relationship. They disagreed in their ratings of the asymmetry, intimacy, and relational aggression in their relationship. In early adulthood, siblings agreed on their ratings of similarity, intimacy, quarreling, antagonism, domination, and acceptance; they differed in their ratings of affection, admiration, emotional support, competition, instrumental support, and knowledge. For both siblings at both ages, many of the positive dimensions were positively intercorrelated and the negative dimensions were positively intercorrelated. At both ages, the positive scales and the negative scales were negatively intercorrelated. The adult scales of Instrumental Support and Competition were not consistently correlated with either positive or negative dimensions; we suspect that this may suggest a difference for brothers and sisters.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart Funding Sources None

9 • Negative Assertive Language Use in 17-Year-Olds' Interactions with Siblings and Friends

Aria Elling, Stefani Teglash, Taylor Dagostino, Nicole Swinarski, Ameachi Odey, Natalie Thurston **Abstract**

As part of a longitudinal study, 17-year-olds' use of negative assertive language was examined during interactions with siblings and friends. Previous research on gender differences in adolescents' use of assertive language has focused primarily on interactions with same-sex peers. Based on these studies, researchers have long suggested that boys use more assertive language than girls. However, it is unclear whether there are gender differences in assertive language use with siblings. Past research has not included mixed-sex dyads; studying siblings provides a ready opportunity to examine

mixed-sex interactions as well as same-sex. Additionally, past research has not differentiated between positive and negative assertive language. We are interested in how adolescents use negative assertive language with siblings and friends. We found that sibling pairs used more negative assertive utterances than friend pairs, and mixed-sex sibling pairs used more negative assertive utterances than same-sex sibling pairs.

Subject Category Social Science Categories: Psychology Faculty Sponsor Department

Psychology Faculty Sponsor Ganie DeHart Funding Sources None

341 • Mitigation vs. Intensification in Adolescents' Use of Verbal Irony with Siblings and Friends

Nicholas Kruger, Emma Richards, Grant Edmondson

Abstract

Interactions with siblings and peers provide important context to social interaction and development throughout childhood and adolescence. As part of a longitudinal study, we examine utterances of verbal irony during interactions between siblings and peers. We analyzed the ways adolescents used verbal irony to mitigate or intensify utterances during social interaction. There is a body of research pertaining to preschoolers' social interaction with siblings and friends, while there is less research about differences in adolescents.

Fifty-three adolescents (26 girls) were videotaped at home in separate 15-minute cooking sessions between a sibling and a same-gendered friend. We found significant differences gender and interaction partner made on use of sarcasm or jocularity for intensification or mitigation. Gender and interaction partner made a difference in the specific purposes for which verbal irony was used. In particular, boys used sarcasm for intensification more than girls did. Girls and boys were about equally as likely to use jocularity for mitigation, but girls were more likely than boys to use it for intensification. Boys used both sarcasm and jocularity for mitigation; boys with friends than with siblings. Sibling gender also made a difference in target adolescents' use of mitigation; boys with sisters followed the pattern of girls, using mitigation more with siblings than with friends. In contrast, boys with brothers followed the typical male pattern, using mitigation more with friends than with siblings. Gender and interaction partner impacted the use of sarcasm and jocularity for mitigation and intensification.

Subject Category Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

304 • The Effects of Gender and Age Compositions on 7 year old's Interactions with Siblings During a Construction Task

Rachel LeSchander, Megan Howard, Bridget Moyer, Olivia Raupp, Alyssa Lorka, Allison Fay Abstract

As part of a longitudinal study, we examined the role of gender and age composition in 7-year-olds' prosocial behavior with siblings during a construction task. Prosocial behavior is any behavior intended to benefit another party. Prosocial behaviors include attempts to help, let's/ we statements, attempts to engage, teaching, giving and offering items, and displaying manners. The rate and type of prosocial behavior varied depending on sibling dyad age composition; older

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and younger siblings engaged in different types of prosocial behaviors. Boys and girls engaged in different levels and types of prosocial behaviors; both target child and sibling gender made a difference.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie Dehart Funding Sources None

143 • Observed Conflict Behavior and Mothers' and Adolescents' Perceptions of 17-yearolds' Sibling and Friend Relationships.

Marina Rabideau, Isabelle Cook, Adele Beltrani, Trystan Melas, Maddie Sepcaru, Clara Rowles Abstract

As part of a longitudinal study of sibling and friend relationships, we examined connections between 17-year-olds' observed conflict behavior and their own and their mothers' perceptions of their relationships. The adolescents were videotaped during cooking tasks with a sibling and a friend. Videos were transcribed and coded for conflict and averted conflict. Adolescents and mothers completed questionnaires rating the sibling and friend relationships on asymmetry, conflict, relational aggression, prosocial behavior/harmony, and intimacy. We hypothesized that: (1) mothers' perceptions of the sibling relationships would be more positive than their perceptions of the friendships; (2) mothers' perceptions of the sibling relationships would be more strongly correlated with observed conflict behavior than would their perceptions of the friendships; (3) adolescents' perceptions of the two relationships would be equally correlated with their conflict behavior. All four hypotheses were supported to some extent. The results suggest that adolescents' insight into their own relationships may be limited and that mothers' perspectives on their adolescent children's relationships may be more grounded in reality than expected.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart Funding Sources None

69 • "Is this their sense of humor or are they just being mean?" The Challenges of Interrater Reliability in Observational Coding of Interaction Quality

Claire Shroder, Abigail Harrington, Alexa Johnson, Kristina Nicholaysen, Alexis Bertrand Abstract

As part of a longitudinal study, we examined the type and quality of social engagement in a variety of tasks engaged in by pairs of children aged 4 to 17 with their friends and siblings. The type of social engagement (solitary, parallel, associative, cooperative, onlooker, unoccupied) has been relatively straightforward and stable in coding reliability. For quality coding, we determine whether a 10-second interval is positive, negative, or neutral. Due to the subjective nature of determining this, achieving high rates of reliability with this coding scheme has been challenging. We set out to update our current coding scheme to improve inter-rater reliability specifically in regards to pair dynamic and intent. To demonstrate the differences in interpretation of the quality coding scheme over time, we will compare the reliability scores of older coded transcripts to those coded more recently.

Subject Category Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart Funding Sources None

114 • Caribbean, Chinese American, and Latinx Emerging Adults' Perceptions of Sibling Relationships: An Idiographic Approach Examining the Unique Role of Culture

Katharine Martin, Selena Pham, Beula Akande, Annabella Vargas, Eddie Galarza, Lia Carswell

Abstract

The present research employed an idiographic approach to cross-culturally examine Caribbean (n= 6), Chinese American (n= 11), and Latinx (n= 4) Emerging Adults' Perceptions of Sibling Relationships. The N= 21 participants ranged in age from 18 to 24 years old. An electronic questionnaire asking for students' demographic information was required prior to eligible participant selection. The survey asked a series of questions pertaining to the individual's perception of how in touch they, their parents, and their siblings are with their culture. Then, individual interviews were video recorded and transcribed. All 21 interview transcripts were reviewed and coded by a team of at least three researchers. Initial thematic coding and In-Vivo methods were used in the first cycle of coding (Saldaña, 2013). Thematic analysis was employed to analyze all data (Braun & Clark, 2006). As a credibility measure, researchers will identify negative cases within the data set and juxtapose them to emerging themes. The thematic analysis revealed similarities in the Caribbean, Chinese American, and Latinx Emerging Adults' perceptions of siblings' relationships, as well as many differences. The emergent themes revealed convergent experiences associated with differential parental expectations and sibling roles/responsibilities, while divergences were revealed in the role of gender and age. These findings offer new insights into the role of culture in shaping emerging adults' experiences of their sibling relationships. The current study provides offers ideographic and novel findings that contribute to the scant cross-cultural literature on sibling relationships during emerging adulthood.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie DeHart; Nick Palumbo Funding Sources TRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

123 • College Students' Perceptions of Sibling Relationships: A Cross-Cultural Investigation

Soleil Rivera, Selena Pham, Leia Dombroske, Jacqueline Johnson, Josephine Wu, Lauren Martin

Abstract

In contributing to the literature on emerging adulthood, this phenomenological study examined the sibling relationships and cultural experiences of Black, Indigenous, and People Of Color (BIPOC) college students (N = 21). Six Caribbean, 11 Chinese American, and four Latinx college students with one or more siblings were recruited through college-affiliated email list serves, multicultural student organizations, and by word of mouth. All participants completed a demographic questionnaire. Participants ranged in age from 18-24-years-old. The data were collected during 30 to 60-minute individual interviews. All 21 interview transcripts were reviewed and coded by a team of at least three researchers. Transcripts were coded separately, and it was determined that exploratory coding would be the most prudent method prior to first-cycle coding to select for the most appropriate coding method (Saldaña, 2013, pp. 63-64). During this exploratory coding procedure, the researchers tested two types of coding methods: initial and in-vivo coding. As a result, 2023 Geneseo Recognizing Excellence Achievement and Talent Day • 17th Annual

two types of codes, initial and in vivo, were applied to the data. Following the first cycle coding methods, and in following the guidelines for thematic analysis proposed by Braun and Clark (2006), all of the codes were collated into emergent themes (pp. 86-93). The emergent themes revealed unique and differential cultural influences on the development of sibling relationships through parenting styles, familial values, and differential sibling expectations. Future research using focus group data would further strengthen these early findings and contribute to the cross-cultural literature on BIPOC sibling relationships.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Ganie B. Dehart, Nick Palumbo Funding Sources None

253 • Ambient Identity Cues Within Digital Spaces: How Institutional Identities Influence Text and Image Selection

Rachel Denzler, Kaitlyn Britt, Daniel Regan, Michelle Costa, Charlotte Sutphin

Abstract

Belonging is a basic human need with substantial impact on overall health and well-being (e.g., Baumeister & Leary, 1995). The presence of ambient identity cues, socially symbolic objects that communicate stereotypes about group members inhabiting a given environment, can powerfully impact perceptions of belonging and interest (Cheryan et al., 2009). Our previous work examined the presence of identity cues in academic digital spaces regarding text analyses. Through examining 36 institutional website pages, we conducted a qualitative assessment of identity cues via Linguistic Inquiry and Word Count (Pennebaker et al., 2001). The current work analyzes the images within the institutional websites, particularly their about and welcome sections, to determine the various emotions and feelings of belonging evoked from selected images. PWIs are coded as majority-serving institutions; HBCU and Tribal institutions are coded as minority-serving institutions. Analyses found that minority-serving institutions feature more images with people. Regarding exemplification of a diverse student population, minority-serving institutions feature more photos with diverse individuals. However, majority-serving institutions over-represent diversity relative to the conservative estimates of expectedness within their student population. In our current study, students are presented with a number of randomized images conveying multiple themes, diversity, academics, etc. Responses will be analyzed regarding what emotions were evoked and level of belongingness felt dependent on the image shown. Given the critical link between belonging and academic achievement/knowledge retention (Brannon & Lin, 2021; Suhlmann et al., 2018), it is important to gain a better understanding of how cues differ across institutions and their impact on prospective students.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Claire Gravelin Funding Sources None

47 • Emotional Role Reversal with Fathers and Young Women's Sexual Autonomy: Potential Mediating Effects of Gender-Based Power Beliefs

Simonee Ross Abstract In families characterized by emotional role reversal, traditional caregiving roles are inverted, such that children are expected to provide nurturance to their parents. The current study tested the potential associations between daughters' past emotional role reversal with fathers on daughters' gender-typed beliefs about dating relationships (i.e., that women should sacrifice for sexual partners). In turn, such beliefs were predicted to be associated with lesser current sexual assertiveness. Undergraduate women (N = 187, mean age 19) completed self-report measures assessing past emotional role reversal with fathers, beliefs about dating relationships, and three types of sexual assertiveness with partners: initiating desired activity, refusing undesired activity, and pregnancy/STI prevention. As expected, role reversal with fathers negatively predicted gender-typed beliefs about dating relationships. Also as expected, past role reversal with fathers negatively predicted both initiation and refusal assertiveness. Gender-typed beliefs fully mediated the effect of role reversal on initiation assertiveness, but not refusal assertiveness. These findings suggest that past emotional role reversal with fathers may disempower young women in their sexual relationships with partners.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Jennifer Katz Funding Sources McNair Scholars Program Support

196 • Empathy, Mental Health, and Associations with Brain Activity

Thomas Griffin, Melissa Kaplan, Michelle Fitting, Julia Vaughan, Rachel Echols, Catherine Elliott, Lillian Woodworth, Alexandra Young, Maxwell Mesi

Abstract

Our study looks at brain activity underlying empathy processing and its association with underlying mental health. Using a functional near infrared spectroscopy (fNIRS) measuring device, we measured blood oxygenation in the dorsolateral prefrontal cortex, a brain region associated with reasoning and decision-making, while participants engaged in two different empathy tasks. The first task is the Frith-Happé Animations – an assessment of Theory of Mind, the ability to take the perspective of another – and the second task is the EU-Emotional Stimulus Set, which assesses emotion recognition connected to empathy. Accuracy of performance and brain activity during these tasks were then examined alongside mental health questionnaires completed by participants. We expect to find that individuals who are higher in empathy will show unique patterns of brain activity which differentiate them from less empathic individuals, and that this neural response will be associated with higher levels of mental illness. We suspect that increased hypervigilance, associated with forms of mental illness such as social anxiety and depression, may explain these hypothesized trends in performance and brain activity during empathy tasks. Results, as well as implications for further research, will be discussed.

Subject Category Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Michael Lynch Funding Sources

None

277 • Emotion Regulation and Empathy at a Restorative Youth Summer Camp

Marina Rabideau, Maddy Klotz, Dr. Bradley Taber-Thomas, Dr. Christine Merrilees Abstract

People's emotion regulation processes play a role in their empathetic responses to the emotions of others (Thompson et al., 2019). These processes occur as a response to the perceptions one has about what others may be feeling (Maibom, 2019). The associations between empathy and emotion regulation have been established in the literature (e.g., Trujillo et al., 2022). For example, the type of emotion regulation strategies one uses is related to their ability to accurately perceive another person's emotional state (Eckland & English, 2019). Thus, while accounting for both positive and negative mood, the current study assessed changes in empathy and emotion regulation during a two-week session of summer camp whose programming was centered on empathy development. When examining changes in outcome variables over multiple occasions, it is important to consider both between-person and within-person changes. Within-person changes track changes in one individual over a certain period of time, while between-person changes represent differences in starting points and differences in growth between people (Curran et al., 2012). The current study assessed daily mood, empathy, and emotion regulation among 41 thirteen to fifteen-year old campers at a two-week program which used restorative practices to manage conflicts. These variables were measured using campers' self-report in a short diary entry they completed every night before bed. Multilevel modeling will be used to assess both within-person and between-person changes. We hypothesize that campers will exhibit more empathy on days in which they report being more emotionally regulated.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Christine Merrilees Funding Sources None

71 • Patterns in the Quality of Same-Sex and Other-Sex Friendships: Associations with Adjustment

Hannah Dougherty, Lindsay Merenda, Devin Brazell, Jenna Zon, Blake Tripodi

Abstract

Friendships that are high in positive features and low in negative features are considered the highest quality friendships. Adolescents report more positivity in their same-sex friendships compared to their other-sex friendships (Hand & Furman, 2009). In addition, adolescents who have high-quality friendships report higher interpersonal competence (Buhrmester, 1996), social acceptance, and self-esteem (Keefe & Berndt, 1996) than adolescents with low-quality friendships. The present study aimed to replicate these findings with an older age group. College students did report higher levels of positivity with their same-sex friends than their other-sex friends. We also used cluster analysis to group the students into five profiles based on their reports of positivity and negativity with their closest same-sex friend and closest other-sex friend. Students who had high-quality relationships with both friends tended to feel better about their ability to have good relationships. The other profiles varied in their associations with adjustment outcomes.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Karen Mooney Funding Sources None

145 • Facial Expressions and Emotion Induced Blindness

Melissa Kaplan, Sharlenn La, Alana Aga Abstract Emotion Induced Blindness occurs when an emotionally arousing distractor picture disrupts subsequent processing of a target picture in a Rapid Serial Visual Presentation (RSVP) stream. Using a pair of RSVP streams, Most and Wang (2011) found that this interference in processing was spatially localized, being strongest at the location of the arousing distractor. In the current experiment, we test whether facial stimuli depicting negative emotions (anger or fear) also elicit a spatially localized disruption in visual processing. We also expand the number of streams to four, allowing us to examine competition within and between visual fields. Contrary to Most and Wang, our results show that visual processing is facilitated at the location of the distractor face. This suggests that the distractor faces capture spatial attention to their location, but they do not compete with the processing of subsequent stimuli at that location.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Jeffrey Mounts Funding Sources None

48 • Stereotypical Hippocampal Clustering Predicts Navigational Success in Virtualized Real-World Environments

Abigail Verhayden, Madelyn Campbell

Abstract

Structural differences along the long-axis of the hippocampus have long been believed to underlie meaningful functional differences, such as the granularity of information processing. Recent findings show that data-driven parcellations of the hippocampus sub-divide the hippocampus into anterior-medial, anterior-lateral, and posteroanterior-lateral components, whereas the posterior hippocampus divides into middle and posterior components. We tested whether task and experience could modulate this clustering using a spatial learning experiment where subjects were trained to virtually navigate a novel neighborhood in a Google Street View-like environment over a two-week period. Subjects were scanned while navigating routes early in training and at the end of their two-week training. We used the previously established hippocampal clusters from past research as the ideal template. Relating our clusters to learning, we find that subjects who eventually learn the neighborhood well exhibit hippocampal cluster-maps consistent with the ideal template—even on their second day of learning—and their cluster mappings do not change over the two week training period. However, subjects who eventually learn the neighborhood poorly begin with hippocampal cluster-maps inconsistent with the ideal, though their cluster mappings become more idealized by the end of the two week training. We conclude that hippocampal clustering is not dependent solely on structure, and instead is driven by a combination of structure, task, and importantly, experience. Nonetheless, while hippocampal clustering can change with experience, efficient navigation depends on functional hippocampal activity clustering in a stereotypical manner, highlighting optimal divisions of processing along the hippocampal anterior- posterior and medial-lateral-axes.

Subject Category

Science and Mathematics Categories: Neuroscience Faculty Sponsor Department Psychology Faculty Sponsor Jason Ozubko Funding Sources Other Source of Support

90 • The Role of Microaggressions in Students' Experience of Campus Climate as a Function of Identity

Abstract

We examined how students' experiences with microaggressions both in and out of the classroom were related to their experience of three factors contributing to campus climate (i.e., satisfaction, belonging, and well-being). Moreover, we were interested in examining how these relationships intersected with identity. Results indicated significant differences in satisfaction, belonging, and well-being as a function of identity: students with privileged identities (White, heterosexual, no disability reported) reported greater satisfaction, belonging, and well-being than students with disadvantaged identities (Black, Latinx, LGBTQ+, students with disabilities). We conducted correlations comparing the relationship between witnessing/experiencing microaggressions based on different identities and campus climate outcomes. Results indicated that witnessing or experiencing microaggressions more strongly predicted campus climate outcomes for members of underrepresented racial/ethnic groups, suggesting that the presence of microaggressions at SUNY Geneseo are particularly problematic for students with underrepresented identities. Moreover, which identities were targeted by microaggressions mattered in that they predicted different college outcomes for underrepresented groups. Lastly, results examining students' experiences with different types of microaggressions in the classroom revealed that students with underrepresented racial/ethnic identities reported experiencing all types of classroom microaggressions compared to students with privileged racial/ethnic identities. In addition, Black, Latinx, Asian or Multiethnic students reported that feeling excluded was experienced significantly more often than the other types. Implications for understanding how microaggressions are related to college adjustment for students with different identities and for developing meaningful interventions designed to improve campus climate are discussed.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor DepartmentPsychologyFaculty SponsorMonica SchneiderFunding SourcesTRAC Grant (Geneseo Foundation and Student Association Travel, Research and Creativity Grant)

140 • Comparison of Pupil Core Eye Tracker Calibration Methods

Anna Quatrale, Madison Nuttle, Grace Kanaley, Sam Lee, Alise Hale

Abstract

As part of a larger study measuring attention bias to threat in real world scenarios, different techniques used to calibrate mobile Pupil Core eye trackers were examined in order to determine the most accurate method. In most studies, behavioral tasks or stationary eye tracking are used to measure threat bias, whereas mobile eye tracking allows the subject to take advantage of the technology in everyday settings. On the downside of mobile eye tracking, it is often not the most accurate and has great difficulty in detecting fixations. In the calibration testing, single marker calibration was compared to an eleven point calibration in both smaller scales (handheld device) and on a much larger scale, encompassing the full range of eye movement. Using mean calibration error in degrees present through the Pupil Core software, the accuracy of each calibration method was able to be determined. It was expected that: (1) calibration using the eleven point method would be more accurate than single point calibration and (2) calibration at a larger scale would have the best overall accuracy, with the large scale eleven point calibration being the most accurate. Obtaining the most accurate calibration of the mobile Pupil Core eye trackers will allow the overall study on attention bias to threat to yield the most accurate and replicable results in the future.

Subject Category

Social Science Categories: Psychology

Faculty Sponsor Department Psychology Faculty Sponsor Bradley Taber-Thomas Funding Sources None

226 • Topographical Individualized Neuromarkers in Children with Autism Spectrum Disorder

Phoebe Sweet, Jamie Fleck, Emma Piwko, Julia Massoni

Abstract

The Topographical Individualized Neuromarkers (TIN) project aims to develop novel brain markers of social-emotional functioning and development in children by analyzing spatially arranged topographical patterns of brain function. Previous research has found that the intrinsic functional connectivity (iFC) graph of Anterior Cingulate Cortex (ACC) connectivity to the insula displays a curvilinear pattern in typically developing children. This graph shows a peak in the mid-dorsal ACC followed by a steep drop as regions of interest (ROI) move ventrally (Taber-Thomas et al., 2016). In comparison to typically developing children, children at risk for anxiety show a more linear pattern as opposed to the curvilinear pattern. In the current study, we focus on the topographical iFC patterns in children with Autism by examining ROIs within the entire limbic loop, which is responsible for emotional regulation and processing. We calculated these topographical maps from publicly available functional magnetic resonance imaging (fMRI) data. The fMRI data for typically developing brains was sourced from Neurosynth and data for children with ASD was sourced from the ABIDE (Autism Brain Imaging Database Exchange) project. We expect that the pattern of functional correlation between ROIs and the right anterior insula will be less curvilinear in children with autism than in typically developing children. We hope these findings can have clinical implications, specifically as a means of facilitating earlier diagnosis and therefore earlier intervention in developing children.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Psychology Faculty Sponsor Bradley Taber-Thomas Funding Sources None

116 • The Effects of Tetrahydrocannabinol on Circadian Rhythmicity and the Response to Nicotine in Long-Evans Rats

Lauren Mac Taggart, Anna Hendricks, Joey Morgan, Vincent Markowski

Abstract

The marijuana legalization trend promotes the notion that cannabinoids such as tetrahydrocannabinol (THC) can be safe and effective medications for conditions such as insomnia. Unfortunately, exposure to THC during development has been shown to impair cognition and motor behavior in humans and laboratory animals. The current study used VitalView software and cage-top infrared activity monitors to quantify the effects of a range of THC doses on activity and circadian rhythms in adult rats that were exposed to THC throughout adolescence. Rats were further administered acute nicotine drug challenges to determine if THC altered the development of the acetylcholine neurotransmitter system. It is hoped that the results of this work in progress can be used to determine if THC presents a risk to adolescent brain development and predisposes an individual to future activity and sleep dysregulation.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience

Faculty Sponsor

Vincent Markowski

Funding Sources

Other External Grant

126 • The Effects of Perinatal or Peripubertal Exposure to Tetrahydrocannabinol on Developmental Milestones, Motor Behavior, and Somatosensation in Rats

Anna Hendricks, Lindsey Toole, Allyson Surowick, Danielle Roemer

Abstract

Tetrahydrocannabinol (THC) is the primary psychoactive agent in marijuana, one of the most popular recreational drugs in the world. As the legalization trend in the U.S. expands, more women are consuming THC during pregnancy and more teens are experimenting with the drug. Unfortunately, the effects of THC on fetal and adolescent brain development are poorly understood. The current study was designed to identify the developmental and somatomotor effects of THC exposure. Long-Evans rats were assigned to one of two cohorts: prenatal exposure where pregnant rats were administered THC from gestational day 1 to postnatal day 21 or juvenile exposure where pups were directly administered THC from postnatal day 22-40. Preliminary results suggest that prenatal THC lowered bodyweight gain in pregnant rats and their offspring in a dose-related fashion. Prenatal THC delayed other milestones such as the crownrump length and age of eye-opening. A four-part motor behavior battery consisting of grip strength, coordination, somatosensory reflex, and open field activity tests was conducted in young adult and middle-aged animals. Prenatal THC lowered grip strength and increased somatosensory reflex latency. The more robust effects observed in the prenatal cohort could be due to the increased THC and THC-COOH body burdens that emerged over the course of the exposure period in the pregnant dams.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department Psychology and Neuroscience Faculty Sponsor Vincent Markowski Funding Sources Other External Grant

129 • Effects of the Glutamatergic Drugs MK-801 and CDPPB on Ventriculomegaly and the Development of the Corpus Callosum

Ryan Pelkey, Noah Massey, Evan Eshenaur, Zander Purcell, Vincent Markowski

Abstract

The neurodevelopmental hypothesis depicts schizophrenia as a long-term consequence of aberrant development of the glutamate and dopamine neurotransmitter systems during the perinatal period. The drug MK-801 is a glutamate N-methyl-D-aspartate (NMDA) receptor antagonist that produces schizophrenia-like symptoms in laboratory rodents when administered early in development. Our laboratory has been investigating whether CDPPB, a positive allosteric modulator of the metabotropic glutamate receptor 5 (mGluR5), would reverse the effects of MK-801. To test this, mice were first administered 0.25 mg/kg MK-801 as neonates, and later given 10.0 mg/kg CDBBD or saline during their juvenile period. Previously, our lab found that MK-801 produced a series of long-term behavioral deficits, some of which were reversed with CDPPB treatment. For the current study, brains were extracted, sectioned with a cryostat, and stained with myelin-specific Luxol-Fast Blue. Brain sections were digitized and examined microscopically. Morphometric measures such as total section volume, lateral ventricle volume and corpus callosum volume were determined with ImageJ software. The goal of the current study is to determine if a reduction of myelinated structures such as the corpus callosum and/or enlargement of the cerebral ventricles are related to the behavioral deficits observed earlier.

Subject Category

Science and Mathematics Categories: Neuroscience

Faculty Sponsor Department

Psychology and Neuroscience Faculty Sponsor Vincent Markowski Funding Sources

RESIDENCE LIFE

272 • Impact of Music on Mental Health

Sophia Benanti, Ariel Tabachnikoff

Abstract

As mental health challenges have grown among college-age students, college campuses are struggling to keep up with counseling resources, especially on smaller or rural campuses. One of the more accessible opportunities is in music therapy. Music therapy is a health profession where music is used as a clinical intervention to help patients reach their individual goals. People probably don't realize that simply listening to music, playing an instrument, or even music therapy can have such positive impacts. We have created a survey to collect data on how students' use music currently and how they rate their mental health. We will use the results to demonstrate the impact of music and how people may engage with it slightly differently to see mental health benefits. We found that lots of students already use Music therapy. We suggest adding music to your everyday lives whether you're studying or just in the car listening to music to boost your well-being and mental health.

Subject Category

Interdisciplinary and Other Categories: Other

Faculty Sponsor Department Residence Life Faculty Sponsor Meg Reitz Funding Sources None

200 • Fast Fashion: It's Not What You Think S

Jillian Draper, Chloe Wengewicz, Anamaria Santos Mendez, Logan Sargent

Abstract

What is Fast Fashion? It is like fast food. As with food, clothing manufacturers have found quicker, cheaper ways of producing immense amounts of clothing. These cheaper methods became ubiquitous in the 1990s, and, similar to fast food, yielded detrimental environmental effects. The fashion industry uses 79 trillion liters of water filled with 1900+ chemicals that make their way into our water sources. About eight percent of global carbon emissions are released into the atmosphere from clothes production and 92 tons of clothes and textiles end up in landfills annually. Although cheap clothing is necessary, from a social justice perspective, offering cheap clothes at the expense of healthy communities and labor laws does not create a sustainable market. Our poster will discuss ways to address the unsustainability of the broader industry and we also want to empower students to make a difference on an individual, campus or community level. Alternatives to Fast Fashion include donating clothing, purchasing from thrift stores, making or repairing their own clothes, or supporting local businesses that do not mass-produce products. This project aims to bring awareness to the problematic world of Fast Fashion. By presenting the college with a survey to demonstrate their knowledge on Fast Fashion's environmental impact, as well as getting people to think about what they are buying. Afterward, they can see how their knowledge compares to the facts, allowing them to evaluate how they spend their money and what practices they support.

Subject Category

Funding Sources

Interdisciplinary and Other Categories: Other Faculty Sponsor Department Residence Life Faculty Sponsor Meg Reitz

170

138 • Does the Sensory Room Work?

Hollie Errington, Chantal Martinez, Megan Keach, Ryan Mcdonald

Abstract

Mental health in college students has been a continuous issue with many students suffering from anxiety and depression. Many students are particularly vulnerable to stress, which is correlated to academic underperformance, failure to fulfill academic obligations, and problematic health behaviors, such as substance abuse. A higher perceived stress level in university students can cause a poorer quality of life, well-being, and sleep quality. It is important to recognize coping strategies to relieve these mental health stressors. There are many resources available on campus to help students in regards to mental health, but the newly developed sensory room located in Monroe Hall gives students access to mental health resources without relying on staff members. Students who are uncomfortable reaching out for help can utilize these tools on their own time. We evaluated the current effectiveness of the sensory room through surveying students who use the room. From the survey results, we have identified ways to improve the mental health benefits of the Monroe sensory room by adding things like play-doh, another bean bag chair, and stickers. We also recommend expanding the pilot, implementing it in other residence halls. We have found that the sensory room is a beneficial and resourceful way to combat mental health struggles and relieve stress in college without significant financial commitment from the college.

Subject Category

Social Science Categories: Psychology Faculty Sponsor Department Residence Life Faculty Sponsor Meg Reitz Funding Sources None

207 • The Problems of Bacha Posh

Amy Gluchoski, Logan Sargent

Abstract

Our project surrounds the Bacha Posh women of Afghanistan. Due to the patriarchal nature of Afghanistan, women are oppressed in ways that are unique to this region of the world, and unique to being a woman. Bacha Posh, literally meaning "dressed up as a boy" is the practice of families dressing their daughters as men and having them live their lives as males. The discrimination that they face is based in various different types of hatred towards different people, including women, transgender individuals, and those who simply wish to express their gender in a different way. The discrimination that they face often goes unnoticed, and this is the basis of our project. Learning about these struggles will help people more deeply understand these issues, and will allow some insight on how we can possibly change these issues. This will benefit the environment of SUNY Geneseo by introducing a new perspective to students on things such as gender identity and expression, and shining a light on the ways different cultures operate. This brings us closer to our mission of having an equity centered campus. Our project focuses on bringing these issues to the forefront of your mind by showing them from the perspective of Bacha Posh women, and trying to identify ways to solve them, such as changing stances on issues and adopting a more accepting worldview.

Subject Category

Social Science Categories: Anthropology Faculty Sponsor Department Residence Life Faculty Sponsor Meg Reitz Funding Sources

SOCIOLOGY

282 • "Unmask Our Kids": A Case Study of COVID-19 and Anti-Mask Sentiment in a Rural School District

Matthew Kenyon

Abstract

Following the start of the COVID-19 pandemic, many government procedures were put in place in an attempt to limit the spread of the virus. Among these were masking mandates, which were required in many different places over the course of the pandemic, including schools. In June of 2021, the superintendent of a school district in rural New York made masking optional for students and staff, contrary to state and federal policies. In response to this, many members of the community gathered for a demonstration to show their support for the decision. To understand why these events happened when they happened, a sociological case study is used, gathering data from in-depth interviews, news articles, public signs and symbols, as well as social media posts. Findings indicate that power relations in schooling, a rural identity defined by local independence, and a local history of antagonism with the state are all important factors that contributed to the demonstration

Subject Category

Social Science Categories: Sociology Faculty Sponsor Department Sociology Faculty Sponsor Amy Braksmajer Funding Sources None

SCHOOL OF EDUCATION

31 • Representations of Activism in Young Adult Literature

Sophie Schapiro, Nora Shine, Alyssa Tunnera, Griffin Roddy

Abstract

As a group, we have examined the portrayal of activism in Young Adult (YA) literature. We have compiled a list of over twenty YA novels, all written within the past 6 years, and examined their representations of activism for young readers. Additionally, we have conducted extensive research regarding both YA and activist literature, including examining YA literature's conflicting definitions, history, current views, utility in the adolescent classroom, as well as the historical and current portrayals of activism in literature. The pinnacle of our project is a rubric we have created for public use to evaluate the representation of young activists and the authenticity of their work in YA literature. We will be using this rubric to assess the titles on our chosen book list. Finally, our work will culminate with a thesis concerning the findings from our research.

Subject Category School of Education Categories: Adolescence Education: English Faculty Sponsor Department School of Education Faculty Sponsor Brian Morgan Funding Sources None

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Special Thank You:

President Denise Battles, Interim Provost Joe Cope, and Vice President Ellen Leverich for their support of GREAT Day.

Jack and Carol Kramer for their support through the endowed lectureship. The SUNY Geneseo Student Association for their support of luncheon gift cards. To all the students, faculty, and staff who are participating in GREAT Day.

> GREAT Day is supported by: Office of the President Office of the Provost Student Association Campus Auxiliary Services Jack '76 and Carol '76 Kramer Endowed Lectureship

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