

UMKC

*Fall Symposium*

for Undergraduate Research and Creative Scholarship

Wednesday, Nov. 20, 2024 – 4:00–5:15 pm and  
Thursday, Nov. 21, 2024 – 10:00 am–2:15 pm

Miller Nichols Learning Center  
First Floor Lobby

Office of Undergraduate Research  
and Creative Scholarship

[umkc.edu/undergraduate-research/](https://umkc.edu/undergraduate-research/)



## **Office of Undergraduate Research and Creative Scholarship**

[www.umkc.edu/undergraduate-research/](http://www.umkc.edu/undergraduate-research/)

The Office of Undergraduate Research and Creative Scholarship supports high-impact learning opportunities by funding the work of undergraduate researchers, scholars, and artists; linking students with research opportunities; providing opportunities for students to enhance intellectual and career-building skills; and supporting faculty mentorship.

### **Staff**

Jane Greer, PhD, Director  
Alicen Lundberg, Assistant Director  
Laura Bohlman, Administrative Assistant

### **Faculty Advisory Board**

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Alison Graettinger, Earth & Environmental Sciences  
Jane Greer, English  
Amanda Grimes, Health Sciences  
Lani Hamilton, Music Education  
Kimberly Johnson, Multicultural Student Affairs,  
School of Education, Social Work, & Psychological Sciences  
Debra Leiter, Political Science  
Jesse Lowe, Computer Science  
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Zahra Niroobakhsh, Mechanical Engineering  
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Jeff Rydberg-Cox, Classical Studies  
Maria Spletter, Biological Sciences  
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### **Student Ambassadors**

Fardowsa Ahmed, Health Sciences, 2025  
Julia Bruno, Environmental Science, 2025  
Yasmeen Hanon, Political Science & Environmental Studies, 2025  
David Keltner, Physics, 2026  
Isabelle Schroeder, English, 2026

**FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH  
& CREATIVE SCHOLARSHIP**

Wednesday, November 20, 2024

4:00 p.m.-5:15 p.m.

Miller Nichols Learning Center 1<sup>st</sup>-Floor Lobby

Thursday, November 21, 2024

10:00 a.m.-2:15 p.m.

Miller Nichols Learning Center 1<sup>st</sup>-Floor Lobby

## **RECOGNIZING UNDERGRADUATE RESEARCH FELLOWS**

Students who have been deeply involved in the process of research, scholarship, and artistic production from the point of inquiry to the point of presentation, publication, or performance can be recognized with the transcript designation of Undergraduate Research Fellow. The following students were awarded the Undergraduate Research Fellow transcript designation this semester.

**Kailynn Barnt**

Computer Science, Class of 2025

**Tessa Eads**

Biology, Class of 2024

**Yasmeen Hanon**

Political Science & Environmental Studies, Class of 2025

**Audrey Harper**

Psychology & Chemistry, Class of 2024

**Ruweyda Hassan**

Chemistry & Political Science, Class of 2025

**Jordan Jackson**

Psychology, Class of 2025

**Rahma Mohamed**

Health Sciences, Class of 2024

**Semire Olatunde-Salawu**

Electrical & Computer Engineering, Class of 2026

**Theo Raitzer**

Economics, Class of 2025

**Krystal Towne**

Health Sciences, Class of 2024

**Nathan Vanzeyl**

Urban Planning & Design, Class of 2026

## **CELEBRATING EUREKA COURSES**

Experiences in Undergraduate Research are available to students early in their academic careers through EUREKA! Courses. In these courses, students build a relationship with a faculty mentor, learn and practice research skills and scholarly methods, complete a research project, and present their work at a campus-wide symposium.

### **ENGLISH 120 Literary Monstrosities**

Instructor: Dr. Spencer Keralis, University Libraries

### **ENGLISH 225 Intermediate Academic Prose**

Instructor: Dr. Jane Greer, Department of English

### **GECRT-SC 101 Living in a Changing World: Nature's Fury**

Instructor: Dr. Alison Graettinger, Earth & Environmental Sciences

### **GECRT-SS 105 Perspectives on Gender and the Economy**

Instructor: Dr. Sirisha Naidu, Department of Economics

### **HISTORY 437WI Holocaust and Comparative Genocides**

Instructor: Dr. Andrew Bergerson, Department of History

**FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH  
& CREATIVE SCHOLARSHIP**

**Wednesday, November 20, 2024, 4:00 –5:15 P.M.**

**POSTER PRESENTATIONS**

- Poster 1**      **Lillian Le, Janet Salcido, & Maribella Jeffery**      GECRT-SS 105  
*Expansion of Home Health Aides*
- Poster 2**      **Olivia Gebhardt**      HISTORY 437WI  
*Long-Term Consequences of the Cultural Revolution*
- Poster 4**      **Caleb Nielsen & Erin Johnson**      GECRT-SS 105  
*Bridging the Divide: Labor Unions and the Gender Wage Gap in Kansas' Construction Industry*
- Poster 6**      **Asia Petty & Kristyl Dawn**      GECRT-SS 105  
*Power of the Union*
- Poster 8**      **Katherine Dickerson**      HISTORY 437WI  
*Armenian Genocide*
- Poster 9**      **Maiya Harrison**      GECRT-SS 105  
*Addressing Sexual Harassment in Texas: A Call for Change*
- Poster 10**      **Kate McKown**      Psychology  
*Insomnia and Nightmares Predicted by Adverse Experiences in Childhood*
- Poster 11**      **Luke Ballin**      GECRT-SS 105  
*Strength in Numbers: The Benefit of Unionization on the Gender Wage Gap in Louisiana*
- Poster 13**      **Owen Unrein, Aidan Emberton, & Steven Le**      GECRT-SS 105  
*Eliminating the Missouri Wage Gap*
- Poster 14**      **Rebecca Hartman**      HISTORY 437WI  
*Rounded Off to Zero: Sexual Assault of Women in Genocide*
- Poster 15**      **Alana Anderson**      GECRT-SS 105  
*Lowering Poverty in Female Entrepreneurship*
- Poster 17**      **Ulises Nieto-Ceron & Seiry Melendez**      GECRT-SS 105  
*Addressing Workplace Sexual Harassment and Assault in Kansas*
- Poster 18**      **Bryley Smith, Paige Parquette, & Madeline Knapp**      GECRT-SS 105  
*The Lack of Social Security Benefits in Florida*

- Poster 20**     **Delanie Bestgen & Chance Nelson**     GECRT-SS 105  
*Parental Leave, The Solution to Missourian Family's Problems*
- Poster 22**     **Aidan Davis**     HISTORY 437WI  
*Grain and Grief: British Policy and the Irish Potato Famine*
- Poster 23**     **Sophie Marshman & Claire Saubers**     GECRT-SS 105  
*One Standard for All: A Universal Sexual Harassment Policy for California workplaces*
- Poster 25**     **Madeline Villalobos & Chelsey Boehmer**     GECRT-SS 105  
*Too Many Positions Not Enough Teachers*
- Poster 26**     **Jolette Reyna Guzman, Alondra Loya-Vazquez, & Makayla Hatch**     GECRT-SS 105  
*What Impacts does the Motherhood Penalty have on society?*
- Poster 28**     **Faith Livingston**     HISTORY 437WI  
*Crusader Violence*

## ORAL PRESENTATIONS

- 4:30 p.m. -**     **Theo Raitzer**     Economics  
**iX Theatre**     *Interdisciplinary Support for Fiscal Resurgence*

**FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH  
& CREATIVE SCHOLARSHIP**

**Thursday, November 21, 2024, 10:00–11:15 A.M.**

**POSTER PRESENTATIONS**

- |                  |   |              |
|------------------|---|--------------|
| <b>Poster 1</b>  | <b>Ade Williams, Arjelia Guillen Macias,<br/>Vanessa Guillen Macias, &amp; Giancarlo<br/>Ogaz-Flores</b><br><i>Hurricane Changes in The Carribean Over a 50-Year Period</i>                           | GECRT-SC 101 |
| <b>Poster 2</b>  | <b>Kellie Wong, Mariana Fierro, &amp;<br/>Madaline Reynolds</b><br><i>Hurricane Katrina vs. Hurricane Ida</i>   | GECRT-SC 101 |
| <b>Poster 4</b>  | <b>Audrey Childers, Kenneth Johnson,<br/>Firahili Mohamed, &amp; Ian Scarpelli</b><br><i>Investigating Frequency and Intensity of Hurricanes in The Atlantic Gulf Area</i>                            | GECRT-SC 101 |
| <b>Poster 5</b>  | <b>Shirley Moreno-Zarate, Marlen Salais, &amp;<br/>Ja’Niya Eatman</b><br><i>Psychological Impact of Hurricane Katrina</i>   | GECRT-SC 101 |
| <b>Poster 7</b>  | <b>William Clippard, Ethan Tolbert, Zak Ali,<br/>Victor Mejia, &amp; Jim Nguyen</b><br><i>What fault line releases the most energy, San Andreas or North Anatolian?</i>                               | GECRT-SC 101 |
| <b>Poster 8</b>  | <b>Charlie Meyer, Celeste Michael, &amp;<br/>Georgina Trevino</b><br><i>The Economic Impacts of 2005 Category 5 Hurricanes</i>  | GECRT-SC 101 |
| <b>Poster 9</b>  | <b>Mark Rigoli, Ajay Allen, Joel Barraza, &amp;<br/>Omar Aguilar</b><br><i>Secondary Disasters Triggered by Earthquakes</i>   | GECRT-SC 101 |
| <b>Poster 10</b> | <b>Ian Pond, Baneen Albasri, Jalyssa Head,<br/>David Oyona Ibandzo &amp; Sam Schisler</b><br><i>Nature's Fury: Destruction of Hurricanes</i>  | GECRT-SC 101 |
| <b>Poster 11</b> | <b>River Gwyn, Mateo Huggins, Isaac Smith,<br/>Elizabeth Thang, &amp; Olivia Wrisinger</b><br><i>Natural Defenders: Using Mangroves to Mitigate Tropical Storm Impacts on<br/>Coastal Communities</i> | GECRT-SC 101 |
| <b>Poster 13</b> | <b>Sheyda Dehghani, Meilan Cobb, Anahi<br/>Silva, Muna Mohammad, Emily Damian,<br/>&amp; Blake Growney</b><br><i>Increase in PTSD Symptoms Post Hurricane Katrina</i>                                 | GECRT-SC 101 |
| <b>Poster 14</b> | <b>David Fernandez, Estrella Hernandez, &amp;<br/>Michael Reckamp</b><br><i>How 30 Years Impacted Earthquakes Recovery in Mexico City</i>   | GECRT-SC 101 |



<b>Poster 16</b>	<b>Hanna Bober, Sarah Wulfert, Adithrri Subramaniam, Santi Wilson, &amp; Ryan Pattison</b> <i>How Hurricanes Affect Manatees in Florida</i>	GECRT-SC 101
<b>Poster 17</b>	<b>De' Vine Robinson, Maxwell Folsom, &amp; Oliver Lietzen</b> <i>How have Humans Adapted to Earthquakes?</i>	GECRT-SC 101
<b>Poster 18</b>	<b>Satori Closser, Lia Wilson, Sahra Hussein, My Nguyen, &amp; Phuong Le</b> <i>How Hurricane Katrina Affected the Louisiana Education System</i>	GECRT-SC 101
<b>Poster 19</b>	<b>Maggie Pursley, Emilie Gladieux, &amp; Tyson Leuthauser</b> <i>Hurricane Resilience through Water Management in Florida and Louisiana</i>	GECRT-SC 101
<b>Poster 20</b>	<b>Alexa Omorodion, Sofia Martinez, Sara Hanon, Inara Bhakta, &amp; Arjan Deol</b> <i>Hurricane Ready Hospital Infrastructure, What Went Wrong?</i>	GECRT-SC 101
<b>Poster 22</b>	<b>Areej Falah, Karina Galeas, Alyssa Smera, Dana Valenzuela, Melisa Botello, &amp; Nick Bailey</b> <i>Hurricanes in Relation to Climate Change</i>	GECRT-SC 101
<b>Poster 24</b>	<b>Alissa Ketner, Bryanna Planker, Isabella Almaguer, &amp; Ginger Jones</b> <i>Effects of Damage from Hurricanes</i>	GECRT-SC 101
<b>Poster 25</b>	<b>Ethan Maisonneuve, Isaac Wilson, Brandon Zanatta, Tar Reh, &amp; Imani Dyke</b> <i>Measuring Hurricanes</i>	GECRT-SC 101
<b>Poster 26</b>	<b>Luke Ballin, Ivan Salgado, &amp; Maria Jackson</b> <i>Did Mexico City's Implementation of Alternate Building Materials Reduce Earthquake Damage?</i>	GECRT-SC 101
<b>Poster 27</b>	<b>Avleen Kaur, Heidy Paredes, Da'Mya Thomas, Zoey Marshall, &amp; Ta'Mya Cann</b> <i>The Impact of Climate Change on Typhoons in the Philippines</i>	GECRT-SC 101
<b>Poster 29</b>	<b>Angelina Pearson, Quinn Cavin, Wendy Reyes, Sthepanie Sanchez, &amp; Alvincent Thai</b> <i>Impact of Hurricanes on The U.S. Virgin Islands</i>	GECRT-SC 101
<b>Poster 30</b>	<b>Avari Schwenk, Jessica Yakandji, &amp; Kalkiedan Kassa</b> <i>Investigating the Economic Impact of Category 3 Hurricanes in Florida</i>	GECRT-SC 101
<b>Poster 31</b>	<b>Ian Briscoe, Luke Markley, Brandon Castillo, &amp; Luis Hernandez</b> <i>Differences of Financial Impact from Different Storms</i>	GECRT-SC 101

**FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH  
& CREATIVE SCHOLARSHIP**

**Thursday, November 21, 2024, 11:30 A.M.–12:45 P.M.**

**POSTER PRESENTATIONS**

<b>Poster 1</b>	<b>Mik Alon</b> <i>Sexualization of Monstrous-Feminine Characters in Video Games and its Impact on Women</i>	ENGLISH 120
<b>Poster 2</b>	<b>Alexander Metcalf</b> <i>The Beautiful “Monstrosity”</i>	ENGLISH 120
<b>Poster 3</b>	<b>Angelika Garciano</b> <i>Lust: A Deadly Sin or Man’s Biggest Fear?</i>	ENGLISH 120
<b>Poster 5</b>	<b>Analisa Alvey</b> <i>Lilith and the Evolutionary Portrayals of the Feminine</i>	ENGLISH 120
<b>Poster 6</b>	<b>Ainsley Pickering, Bailee Ehlers, Abigail Swanson, &amp; Alec Roe</b> <i>Impact of Dream Recall on Perceived Stress</i>	Psychology
<b>Poster 8</b>	<b>Ben Balino</b> <i>The Manananggal: Exploring Filipina Marginalization</i>	ENGLISH 120
<b>Poster 9</b>	<b>Antonia Eichler</b> <i>She Who Rises</i>	ENGLISH 120
<b>Poster 10</b>	<b>Michaela Vanden Hull</b> <i>The Continuous Evolution of a Monstrous(?) Medea</i>	ENGLISH 120
<b>Poster 11</b>	<b>Sy Cartwright</b> <i>Monstrous Menstruation: Carrie White as a Female Witch</i>	ENGLISH 120
<b>Poster 12</b>	<b>Ashton Pond</b> <i>Medusa as Monster, Medusa as Feminist Icon: Tracing the Transformation of a Mythological Figure</i>	ENGLISH 120
<b>Poster 14</b>	<b>Eric Thong</b> <i>Bloodless Spite of a Rebellious Maiden</i>	ENGLISH 120
<b>Poster 15</b>	<b>YoungHoon Han</b> <i>Evolving Narratives of the ‘Gu-Mi-Ho’: Reflections on Female Sexuality in Korean Society</i>	ENGLISH 120
<b>Poster 16</b>	<b>Mason Percy</b> <i>Vipers: An Exploration of the Women in Anno Dracula</i>	ENGLISH 120

<b>Poster 17</b>	<b>Morgan Cole</b> <i>The Vampiress: A Monster of Blood and Beauty</i>	ENGLISH 120
<b>Poster 18</b>	<b>Chyann Rashaw</b> <i>Laurie Strode: Evolution of a Final Girl</i>	ENGLISH 120
<b>Poster 20</b>	<b>Iyanna Moss, Adelin Baynum, &amp; Laine Ross</b> <i>Insomnia &amp; Nightmares: Effects on Suicide</i>	Psychology
<b>Poster 21</b>	<b>Molly Brown</b> <i>Animating Gothic Literature: How Tim Burton Reimagines Frankenstein and Resurrection</i>	ENGLISH 120
<b>Poster 22</b>	<b>Eulises Valdez</b> <i>Cosmic Horror and the Abject: Exploring the Great Ones in Bloodborne</i>	ENGLISH 120
<b>Poster 24</b>	<b>Madelyn Chavez</b> <i>The Abjection of Amanda Young</i>	ENGLISH 120
<b>Poster 25</b>	<b>Gianna Comelli</b> <i>Maternal Horror in Bloodchild and Alien: Romulus</i>	ENGLISH 120
<b>Poster 26</b>	<b>Lakingya Wells-Horn</b> <i>Monstrous Mothers and their victim children</i>	ENGLISH 120
<b>Poster 28</b>	<b>Sarah Park</b> <i>Long Hair and Lucious Fangs: Exploring the Lesbian Vampire in Carmilla and The Vampire Lovers</i>	ENGLISH 120
<b>Poster 29</b>	<b>Lexi Shirley</b> <i>The Link Between Changelings and Neurodivergence</i>	ENGLISH 120

**FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH  
& CREATIVE SCHOLARSHIP**

**Thursday, November 21, 2024, 1:00–2:15 P.M.**

**POSTER PRESENTATIONS**

- Poster 1**      **Aiden Thompson**      ENGLISH 225  
*How Individual Elements in Advertisements Manipulate Audiences*  
*A Rhetorical Visual Analysis of Blu’s “MyBlu” Campaign*
- Poster 2**      **Kenzie Keightley, CJ Kreeger, & Preston Newman-Snow**      Earth & Environmental Sciences  
*Characterizing Aeolian Loess Properties and Weathering on AR210 Highway, Kansas City, MO, 4.0-5.0m*
- Poster 3**      **Hameed Suleiman**      ENGLISH 225  
*Victory and Defeat: Exploring the Rhetorical Shifts in Sports Journalism*
- Poster 4**      **Edgar Contreras**      ENGLISH 225  
*The Power of SHPE’s Website Digital Identity*
- Poster 6**      **Muhammad Chaudhary**      ENGLISH 225  
*How to Make Engineering Resumes Better for ATS Acceptance*
- Poster 7**      **Danny Del Castillo, Makenzie Dobbins, Madison Hillbrand, & Alex Norvell**      Earth & Environmental Sciences  
*Characterizing Aeolian Loess on AR210 Highway, Kansas City, MO, 0.0-1.0 m*
- Poster 9**      **Niharika Mallela**      ENGLISH 225  
*Language Discrimination in Academic and Professional Settings: A Cross-Cultural Study*
- Poster 10**      **Mercedez Boateng**      Biology  
*Impact of Pelvic Congestion Syndrome Pain on Women’s Quality of Life*
- Poster 11**      **Emily Shoemake**      ENGLISH 225  
*What They Never Taught Us In School Ladies: A Rhetorical Analysis of Feminist Zines*
- Poster 13**      **Maydi Ramirez**      ENGLISH 225  
*Culture and School: How UMKC Avanzando Writes to Students & Supports Their Success*
- Poster 14**      **Mary Klene, Harrison Kurz, Cooper Lennard, & Yelitza Perez**      Earth & Environmental Sciences  
*Sediment Composition and Properties of Glacial Loess on AR210 Highway, Kansas City, MO, 1.0 – 2.0 m*

- Poster 16**      **Jovany Velasquez Flores**      ENGLISH 225  
*How the Language of an Environmental Impact Statement Can Affect a Stakeholder's Perspective*
- Poster 17**      **Krystal Towne**      Health Sciences  
*Healing Through Nutrition: The Development of a Food is Medicine Program in the Kansas City Metro*
- Poster 18**      **Gabi Martin**      ENGLISH 225  
*Nursing Associations' Literary Impact on Nursing Burnout*
- Poster 19**      **Pasquale Trozzolo**      ENGLISH 225  
*Decoding Legal Persuasion: Analyzing the Messaging Strategies within Lawyers' Advertisements*
- Poster 21**      **Shelby Huber, Tabitha Taylor-Post, Darius Uche, & Aaron Upton**      Earth & Environmental Sciences  
*Characterization of Loess Deposits through Geochemical, Mineralogical, and Grain Morphology Analyses in Kansas City, MO, USA*
- Poster 23**      **Ethan Boothe, Grace Church, & Karissa Jenesse**      Earth & Environmental Sciences  
*Loess Depositional Processes Through Geochemical, Mineralogical, and Grain Morphology Analyses in Kansas City, MO, USA*
- Poster 24**      **Umer Muhammad**      ENGLISH 225  
*AI in Healthcare*
- Poster 25**      **Jillian Guhr**      ENGLISH 225  
*Climbing Through Names: The Changing Language and Identity of Queer Community as Seen in The Ladder*
- Poster 27**      **Ella Trucano**      ENGLISH 225  
*Shaping Recovery: The Power of Language in Mental Health Narratives*
- Poster 29**      **Maci Branch**      English  
*Bergman's Body: A Rhetoric of Perseverance in Show Business*

**EUREKA! COURSES**

**ENGLISH 120**  
**Literary Monstrosities**

**Mik Alon**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

## **Sexualization of Monstrous-Feminine Characters in Video Games and its Impact on Women**

**Introduction:** This research analyzes how as a result of many video games being created by and for heterosexual men many female characters, even monsters, are often hyper-sexualized resulting in negative outcomes for women in gaming communities. This topic is significant because it both facilitates discussion of the negative impact of hyper-sexualization of female characters on women, and outlines how video games and video game spaces could be improved.

**Research Question:** My research question is: How does the sexualization of female monster characters in video games affect women and their place in video game spaces?

**Methodology:** A qualitative approach was used for this research through secondary data analysis of previous papers and studies in the literature. I am implementing textual and character analysis by looking at characters in different games that were selected to show differing levels of sexualization.

**Key Findings:** My research finds that many popular video games are created by heterosexual men for the heterosexual male gaze. As a result, women are often under-represented in video games and/or are hypersexualized which leads to women turning away from video games despite high interest. Women being pushed away from games results in them often seen as inherently less competent than male counterparts. Additionally, hyper-sexualization of video game characters can lead to increased online sexual harassment.

**Conclusions:** My research concludes that hyper-sexualization of monstrous female characters negatively impacts women and their role in gaming spaces. Practical implications of these findings suggest how the video game industry can be improved for women.



## **Analisa Alvey**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Lilith and the Evolutionary Portrayals of the Feminine**

This project explores the evolution of femininity and sexuality in the portrayals of the female character “Lilith” and how cultural norms and ideals are reflected in the changing representations of an ancient character, manifesting specifically in relation to her identity as a woman. Originally found in Hebrew folklore and now represented in modern forms of media, I argue through my research that the variety and progression of Lilith as a character acts as a representation of traits villainized with their association with women, such as open sexuality, dominance, power, etc. I examined the texts in which she originated from (*Alphabet of Ben Sirach*) and observed her character in various modern television series. My research also included essays that analyze Lilith and her characteristics specifically through a feminist lens, and incorporates the idea of the “monstrous-feminine” by Barbara Creed and as well as the concept of “the monster’s body is a cultural body” (Cohen 44) from Jeremy Cohen’s essay “Monster Culture (Seven Theses)” in order to understand the societal and cultural factors that influence the portrayals of female villains. Through this variety of research, we can see how Lilith’s social image changes from monstrous and despised into a name that represents many modern feminist ideals.

#### Works Cited

Cohen, J. J. (2018). “Monster culture (seven theses).” *Classic Readings on Monster Theory*, 61–76. <https://doi.org/10.1017/9781942401209.006>

## **Ben Balino**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **The *Manananggal*: Exploring Filipina Marginalization**

This research focuses on the Philippine folklore monster known as the *manananggal*. In Philippine folklore, the *manananggal* is depicted as a woman who detaches her lower torso and develops wings in order to hunt pregnant women for human fetuses and organs for consumption. This study explores the relationship between the *manananggal* and the demonization of Philippine women, or Filipinas, through the lens of Christian teachings introduced during the Spanish colonization of the Philippines. The research employs literary criticism to analyze texts that examine the significance of the *manananggal* within Philippine culture. It is important to acknowledge the crucial role that Filipinas played in Philippine history, particularly exemplified by the female shaman known as the *babaylan*. The imposition of Catholicism by the Spanish colonizers led to the destruction and marginalization of indigenous religious practices, consequently resulting in the demonization of the *babaylan*. Spanish priests equated the *babaylan* with the *manananggal*, which contributed to the influences that prompted indigenous peoples to renounce their spiritual leaders. These findings offer insights into the marginalization of Filipinas as a consequence of Spanish colonization in relation to the portrayal of the *manananggal*. This research posits that the monstrous representation of the *manananggal* was strategically employed by the Spanish to demonize the *babaylan*, thus facilitating their control over the indigenous population.

## **Molly Brown**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Animating Gothic Literature: How Tim Burton Reimagines Frankenstein and Resurrection**

This study examines Tim Burton's fascination with Frankenstein and resurrection, comparing and contrasting his films *Corpse Bride* and *Frankenweenie* with Mary Shelley's *Frankenstein*. This is a quantitative research study where I analyze and understand the thematic meanings of *Corpse Bride* and *Frankensweenie* in comparison to *Frankenstein*. I observed each film to understand and pick out anything that Tim Burton might have taken as inspiration, but also to understand each main character's motivations compared to each other. In my studies, I have found that Tim Burton plays with resurrection often in his works, which is very much seen in *Corpse Bride* and *Frankenweenie*, as the main plots of both of these films have to do with the idea of "playing God" and bringing someone back to life, even in a similar light as Mary Shelley's *Frankenstein*, as seen in *Frankenweenie* when Victor brings back his dog, Sparky. *Frankenweenie* is much closer to the "Frankenstein" concept, as it takes a great deal of inspiration from the novel, whereas *Corpse Bride* is slightly different in how Victor Van Dort resurrects Emily, but the desperation to rid of his mistake and the fear he expresses when Emily is brought to life is similar to Victor in *Frankenstein*, as he is fearful of the creature and feels a great sense of guilt and shame from his creation. Through a comparative analysis, this research explores the inspiration Tim Burton took from the novel by Mary Shelley, specifically in the ideas of creation, morality, and playing God. After analyzing each film's visual style, character motivation, and narratives, this study aims to understand just how much Tim Burton is inspired by traditional Gothic fiction such as *Frankenstein*.

## **Sy Cartwright**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Monstrous Menstruation: Carrie White as a Female Witch**

In the world of fiction, monsters are not exempt from upholding social norms and attitudes. The concept of the monstrous-feminine, established by Barbara Creed, analyzes female monsters in relation to what societal fears and gender norms they reflect. In Stephen King's novel *Carrie* (1976), Carrie White develops telekinesis and uses her power to exact revenge on her enemies, embodying the monstrous-feminine archetype of the witch. Carrie is commonly categorized as a witch because of her telekinesis, although in both King's novel and the 1976 and 2013 film adaptations, Carrie's menstruation is what activates her power. Thus, the question arises of whether Carrie is a witch solely due to her telekinesis or through a combination of factors, a primary one being her newfound womanhood. Carrie's monstrosity is analyzed using Barbara Creed's concept of the monstrous-feminine and Julia Kristeva's theory of abjection to uncover how her monstrosity is not only related to but wholly centered around her female identity. Scholarship on the historical origins of the female witch archetype is used to further connect femininity with monstrosity and explain why Carrie can be considered a witch even without her power. Due to Carrie's menstruation immediately preceding the development of her telekinesis and King's continued focus on the effects of her menarche, the menstrunormativity thesis that all menstruators are perceived as monstrous is combined with monstrous-feminine theory to advance the conclusion that Carrie White's womanhood overshadows her telekinesis in defining her witch identity.

## **Madelyn Chavez**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **The Abjection of Amanda Young**

My research involves the concept of abjection; taken from Powers of Horror: An Essay on Abjection by Julia Kristeva and applied to the Saw franchise, specifically to the character Amanda Young, an antagonist from the original trilogy. Abjection, as quoted by Barbara Creed in her book *The Monstrous Feminine* is defined as "...that which does not 'respect borders, positions, rules', that which 'disturbs identity, system, order'." (Creed, 10). My research offers a better understanding of Amanda's character. There isn't much research on the Saw franchise, let alone Amanda Young herself. My work provides for the lack of interpretation and understanding of her character. How has the Saw franchise used Amanda Young to embody the concept of abjection throughout their movies? To find this out, I've studied her character closely by watching the first three films and listening to discussions of her character. Then, I compared my own findings to other studies of Saw with a combination of literary criticism and qualitative data collection before applying the abjection theory to her character. The most important takeaway from my work is the significance of abjection to Amanda and how she embodies it throughout her story. We watch as Amanda changes throughout the first three movies and how she develops and grows. Abjection is a key part of it all. Amanda Young is an extremely important character to the Saw franchise, and she is important to the history of horror films as an antagonist.

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## **Morgan Cole**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **The Vampiress: A Monster of Blood and Beauty**

Female vampires in literature are consistently depicted as being strikingly beautiful yet terrifying monsters. Many vampires in literature fall into this trend: being beautiful, yet abject due to their grotesque connection to blood. With this in mind, I have developed a female vampire based on the extensive research gathered. This project answers the question: *How do theories of abjection as well as the qualities of beauty associated with many vampires, shape the way feminine vampires are created?*

My research was gathered through textual analysis of primary sources. One specific one to follow is the various representations of the Vampire Claudia from Anne Rice's *Interview with the Vampire* (both the book and television show, adaptation by Rollin Jones for AMC). As the vampire I created is from a different time period, I also analyzed a female villain from that time period: Lady Macbeth from Shakespeare's *Macbeth*. Both of these characters have an obsession with power and are interested in gaining more power, and a willingness to manipulate others around them to achieve their own ambitions. In my research I also explored sources discussing what makes blood and monsters so scary, while also researching what makes people so attracted to monsters and horror. Through creating my own feminine vampire, I followed many of these themes; ultimately concluding that what makes a feminine monster so compelling is that they are both beautiful and terrifying at the same time. Ultimately, feminine vampires are fascinating monsters with constant hunger for more power.

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## **Gianna Comelli**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Maternal Horror in Bloodchild and Alien: Romulus**

The journey into motherhood can feel like a tough battle for a woman's body and mind. From the physical and mental challenges to the pressures of what society expects, bringing a child into the world can be one of the most difficult experiences a woman faces. In stories like Octavia Butler's "Bloodchild" and Fede Álvarez's "Alien: Romulus," we see how themes of motherhood often explore the fears and struggles associated with giving birth. This research will look into how these fictional portrayals relate to the real-life experiences of childbirth. I'll be interacting with academic journals including Hokama on monstrous birth and Jenkins on reproductive anxiety, and other various sources that explore the monstrous birthing process. My research will portray women's personal stories about dealing with postpartum depression, physical challenges, emotional struggles, and societal expectations. This research aims to provide an important female perspective on the realities of pregnancy. By analyzing these real-life experiences of giving birth, we can better understand the frightening images often shown in media like "Bloodchild" and "Alien: Romulus." However, this work is not meant to highlight the scary aspects of motherhood as shown in those stories, but rather to empower the women who have faced and overcome the challenges of becoming a mother.

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## **Antonia Eichler**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **She Who Rises**

In this paper I will explore how the manifestation of female monstrosity in Junji Ito's horror manga, *Tomie* and *The Fashion Model*, serves to confront societal fears of feminine autonomy and power that challenge traditional patriarchal gender roles. Drawing explicitly from Barbara Creed's initial construct of the "monstrous-feminine," this project examines ways in which female personas created by Ito reflect and resist paternal conventions grounded both in Western psychoanalytic thought and Japanese cultural contexts. To that end, I have created an original graphic novel that reimagines, through visual medium, key concepts—the nature of body horror, beauty, and transformation—into character design, symbolic settings, and graphic depictions of the abject body. The findings indicate that female monstrosity in Ito's works reflects societal anxieties of female empowerment through horror, which faces deeply ingrained patriarchal thinking. It therefore gives a new light on the monstrous-feminine in horror literature and adds fresh eyes to the discussion of gender and power both from a Western and a Japanese perspective.

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## **Angelika Garciano**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Lust: A Deadly Sin or Man's Biggest Fear?**

Across media, female monsters have been a source of male fear. My research examines how the female reproductive body may inform that patriarchal anxiety. Through analyzing the female monster Lust from *Fullmetal Alchemist: Brotherhood*, I seek to answer, How does her characterization communicate this theme of male fear and desire, as articulated by feminist theorist Barbara Creed in her book *The Monstrous Feminine*? Additionally, I contrast her role across other iterations of *Fullmetal Alchemist* and another representation of Lust in manga (Nakaba Suzuki's *Seven Deadly Sins*) to examine how gender roles contribute to feminine culture and patriarchal anxiety. I argue that that men fear their own desire, condemning it as sin, while also harboring attraction for the female body, reproductive or not. Furthermore, I reason that female sexualization specifically is what is feared and monstrous. I use a qualitative research method focusing on literary criticism and close reading of the source material. I have found that Lust in all iterations of *Fullmetal Alchemist* is a hypersexualized creation born from a male character's fear of 'sin' or imperfection. She also lacks reproductive abilities. In contrast, Lust in *Seven Deadly Sins* is a male who is not desired or feared much at all. Through this, I concluded that narratively, women are feared by men for their ability to be desired rather than their reproductive capabilities. This research also highlights the implications in female character design and gender representation, and how it perpetuates a narrative framing of women as dangerous or monstrous.

## **YoungHoon Han**

Faculty Mentor: Spencer Keralis

EUReka! Course: ENGLISH 120 Literary Monstrosities

### **Evolving Narratives of the 'Gu-Mi-Ho': Reflections on Female Sexuality in Korean Society**

This research examines the transformation of the Korean 'Gu-Mi-Ho'—a fox-like creature in folklore—from a figure representing male anxieties surrounding female sexuality to an empowered and sympathetic character in contemporary media. Traditionally, the 'Gu-Mi-Ho' was characterized as a perilous seductress, serving as a cautionary emblem against unrestrained desires, which was consistent with Korea's conservative values. In contrast, recent representations, such as those found in the video game *League of Legends* and the television drama *My Girlfriend is a Gu-Mi-Ho*, reframe the 'Gu-Mi-Ho' as a desirable and often romantic figure. Utilizing Jeffrey Jerome Cohen's thesis titled “The Monster’s Body is a Cultural Body,” this study investigates whether this transformation is indicative of broader societal changes in the perception of female sexuality.

The research employs qualitative analysis to focus on contemporary media representations of the 'Gu-Mi-Ho' and to compare them with traditional depictions. Secondary sources, including media reviews and studies on South Korean societal norms, are utilized to provide contextual depth. Key findings suggest that the evolved representation of the 'Gu-Mi-Ho' signifies an increasing acceptance of female agency and beauty, suggesting a shift towards greater openness in the portrayal of sexuality. This study posits that the modern 'Gu-Mi-Ho' not only reflects the evolving values of Korean society but may also play a role in influencing those values, underscoring the relevance of traditional folklore in understanding societal attitudes.

## Alexander Metcalf

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### The Beautiful “Monstrosity”

For this project, I have developed a design for Lilith that encapsulates the societal issues that women face, including the challenges of living under a patriarchal system. My aim is to highlight these themes in a manner that is both striking and aesthetically pleasing.

In popular culture, it is difficult to find a representation of Lilith that portrays her as truly independent and free from sexualization. Often, Lilith's character is depicted as serving others or is designed to appeal to a male audience. For example, in the animated series "Hazbin Hotel," Lilith is depicted in a conventionally attractive manner.

Another notable representation of Lilith can be found in the show "Supernatural." Lilith appears in multiple episodes. In this context, Lilith serves Lucifer with the intent of liberating him.

The design inspiration comes from my personal insecurities and those of others who identify as women. I sought to imbue Lilith with a more animalistic quality, drawing inspiration from deer, which are often perceived as trophies or targets, much like women in society. Some additional inspirations include Princess Mononoke from the Studio Ghibli film of the same name. Another source of inspiration is the Deer Woman from Native American mythology, a spirit that embodies a woman with deer-like features and is known for seeking vengeance against men who have harmed women and children. My goal is for her design to evoke a sense of power and presence, while also being unexpectedly beautiful.

Overall, my goal is to create a design that is both inspiring and representative of women who may feel underrepresented.

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## **Sarah Park**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Long Hair and Lucious Fangs: Exploring the Lesbian Vampire in *Carmilla* and *The Vampire Lovers***

One of the most prevailing images of lesbianism in media is the lesbian vampire. My research aims to address how queer identities, sex, and the monstrous feminine interact. By using the lens of two texts, *Carmilla* by Sheridan Le Fanu and its 1970s film adaptation, *The Vampire Lovers*, I explore the intersection of these concepts. I seek to answer: how can the novel *Carmilla* be analyzed parallel to the 1970s film adaptation *The Vampire Lovers* to better inform the origins of the lesbian vampire and how it developed in the cultural eye of the 1970s?

I conduct a close reading of *Carmilla*, particularly Carmilla and Laura's relationship. This thematic analysis links the novel to the 1970s film. In comparing these texts, female sexuality and lesbianism are depicted as dangerous—monstrous even. In *Carmilla*, Laura's sexuality hangs in ambiguity thanks to the liberation Carmilla ultimately gave her in a relationship without male influence. *The Vampire Lovers* depicts lesbianism as a disease that Carmilla inflicts upon her victims, and Carmilla's defeat by stake, a phallic representation of heteronormative superiority. These texts show a shift from the fear of female sexuality to a desire to control it for the benefit of patriarchal means.

Lesbian vampires, as shown in the novel *Carmilla* and the film *The Vampire Lovers*, are depicted as hungry, hypersexual deviants that are created through the lens of heterosexual, white, masculine creators. Despite her creator, the titular character of Carmilla represents social change, gender deviancy, and a hunger for queer desire.

## **Mason Percy**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Vipers: An Exploration of the Women in Anno Dracula**

My research project is a series of three fictional documents that display how the vampire women in the *Anno Dracula* book series have internal abjection related to existing as vampires. I am covering this because research projects surrounding the book series are largely non-existent because they are not classic examples of monster literature.

My methodology starts with reading the original novels, along with the novel and film *Dracula* which inspired them. Works such as *Gender, the New Woman, and The Monster* and *Wayward Women: Female Offending in Victorian England* will act as a historical context for the characters and their behavior. This will then be interpreted and displayed in three fictionalized articles to show off my conclusions.

I have drawn connections between the three principal women of the book series to how they exhibit abjection of the self. One of the protagonists displays this through existential dread coupled with the literal and metaphorical distance between the self and their actions at different points in the books (in one of the novels she can view herself from the outside as she debases herself by feeding on a dog). The connections I've drawn extend to the brides from the original *Dracula* novel and film, and the victims of Jack the Ripper as portrayed within *Anno Dracula's* text.

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## **Ashton Pond**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Medusa as Monster, Medusa as Feminist Icon: Tracing the Transformation of a Mythological Figure**

This research proposal examines how the portrayal of Medusa in Greek mythology reflects the ancient perceptions of female sexuality and the threats of feminine power. Medusa, one of the most recognizable figures in mythology, has been described both as a monstrous creature, and as a victim, symbolizing societal anxieties about women's autonomy. Through a systematic analysis of classical, feminist, and monster theory interpretations, this study follows the evolution of the Medusa myth from a cautionary tale to a symbol of feminist resistance.

Using textual analysis and comparative methods, this research explores how Medusa's representation has transformed alongside changing social movements and gender norms. By compiling classical mythological sources with modern feminist scholarship, the study uncovers patterns in how patriarchal cultures have historically used the Medusa figure to reinforce gendered stereotypes. The findings are expected to contribute valuable insights into the intersection of mythology, gender, and societal power dynamics, showing how ancient myths can be reinterpreted to reflect and advance modern understandings of femininity.

This multidisciplinary research combines literary criticism and feminist cultural analysis to provide a comprehensive analysis of the Medusa myth's significance, from its origins in classical interpretations to its ongoing relevance in modern discourse. This study's conclusions may offer new perspectives on how mythological representations shape and reflect evolving social attitudes toward female sexuality and autonomy.

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## **Chyann Rashaw**

Faculty Mentor: Dr. Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Laurie Strode: Evolution of a Final Girl**

This research will explore the complex character of Laurie Strode, the iconic final girl of the *Halloween* franchise. By analyzing her transformation from a vulnerable teenager to a hardened survivor, I plan to explore how she embodies the characteristics of the "Final Girl" and the ways in which her transformation throughout the franchise reflects the notion that survival as a final girl calls for abjection in yet embracing monstrous traits. to explore the psychological, social, and cultural implications of her character arc.

Key themes in this analysis touch on the impact of trauma, the blurred lines between heroism and villainy, and shifting gender dynamics in horror film. I will use textual analysis of this *Halloween* series and other "final girl" narratives, examining the visual and narrative elements that shape Laurie's development. Additionally, my cultural analysis will provide insight into some societal contexts influencing her transformation. This approach will allow me to examine the psychological, social, and cultural implications of Laurie's character arc, offering a deeper understanding of her significance within the horror genre and broader cultural landscape.

Through this in-depth analysis of the *Halloween* films this will aim to provide a comprehensive understanding of Laurie Strode's character and her enduring legacy with her encounter of Michael Myers. With examining her journey as a final girl, this research lets me aim to offer insights into this complex relationship between fear, power, and resilience in ways she may transcribe some of it through the theory of abjection and embracing some monstrous traits.

## Lexi Shirley

Faculty Mentor: Spencer Keralis

EUReka! Course: ENGLISH 120 Literary Monstrosities

### The Link Between Changelings and Neurodivergence

In all mythologies in which they appear, the changeling is a monster representative of childhood neurodivergence. It is important that we understand this and take it into account when we perceive how neurodivergent individuals are treated in society. The question this research study seeks to answer is, “The changeling is a monster that is depicted as being neurodivergent, replacing “normal” children with ones that exhibit neurodivergent behavior. How does the changeling myth represent how society treats those with autism?” In order to explore this topic, the methodology of this project consists of a literature review and analysis. For the literature involved in this project, I have taken a blend of academic sources, historical sources, and online sources. These pieces contain stories about how to deal with changelings, historical accounts of how suspected changelings have been dealt with, the general history of the changeling myth, and how changelings are connected to neurodivergence. There is a gap of academic research surrounding the connection between changelings and neurodivergence. The methods for dealing with changelings, such as the one featured in the *Skeptical Inquirer*, an online publication, are often severely abusive towards neurodivergent children. I aim to fill the gap of research surrounding the idea of how historical changeling myths are linked with neurodivergence, as well as what this means for neurodivergent individuals in today’s society. The old changeling myths show us that neurodivergent people have historically been perceived as an other, disregarded, and, at times, ostracized by society for not fitting into conventional, neurotypical societal norms.

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## Eric Thong

Faculty Mentor: Spencer Keralis

EUReka! Course: ENGLISH 120 Literary Monstrosities

### Bloodless Spite of a Rebellious Maiden



My research topic is on Angela the sentient A.I from the windows game Lobotomy Corporation and Library of Ruina. More specifically, her struggles of being othered and dehumanized due to her identity as a sentient A.I in a dystopian setting simply called “The City”, the consequences this has on her character, and whether or not the struggles she endures in these games reflect upon our own society regarding the dehumanization of real world minorities such as those with disabilities or convicts and how one might overcome such oppression and stigmatization. The study of this research topic comes in the form of qualitative and quantitative research. I’ve used qualitative research in the study of Angela, her struggles and methods of coping and overcoming the hand she’s been dealt with. I’ve used quantitative research in the struggles of the disadvantaged in our society and the consequences that come from this. For the outcomes of this research, my key findings are the restrictions placed upon those who have been imprisoned both socially and economically both in and out of prison, the challenges people with disabilities face in education and in society, and the natural progression of Angela’s character through the events of the two games and how that shapes her overall worldview. The conclusion to my research topic is that it is society and the government that leads to the perpetuation of the disadvantaged, but to fight against the systems we exist within, we have to act in a way that doesn’t perpetuate the pain and suffering experienced such as assaulting parties who are neutral or in opposition, or else whatever comes afterwards will be just as bad, if not worse for everyone and a continuation of the cycle we find ourselves trapped in.

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## **Eulises Valdez**

Faculty Mentor: Spencer Keralis

EUReka! Course: ENGLISH 120 Literary Monstrosities

### **Cosmic Horror and the Abject: Exploring the Great Ones in Bloodborne**

This research examines how *Bloodborne*, a critically acclaimed action RPG, uses the imagery of the Great Ones, cosmic entities inspired by H.P. Lovecraft's mythos, to explore Kristeva's concept of abjection. The Great Ones represent beings beyond human comprehension, evoking fear and existential dread. These entities destabilize the player's sense of self, embodying Kristeva's abjection, a reaction to the disruption of boundaries between self and other (Kristeva 4). The central research question is: How does *Bloodborne* use the Great Ones to challenge the player's identity, and how do they provoke abjection through grotesque appearances and incomprehensible cosmic forces? This study employs a qualitative, literary-critical approach, focusing on textual and visual analysis of the game's narrative and design. By closely analyzing encounters with the Great Ones, I explore how visual elements, gameplay mechanics, and fragmented storytelling contribute to feelings of abjection. The research also compares *Bloodborne's* cosmic horror to Lovecraft's work, particularly *The Call of Cthulhu*, emphasizing the destabilization of human identity. Lovecraft's entities, like Cthulhu, invoke madness and existential terror, similar to how *Bloodborne's* Great Ones destabilize the player's sense of reality (Lovecraft 45). I find that *Bloodborne* evokes abjection not only through its grotesque entities but also by confronting players with incomprehensible forces, blurring the lines between human and monstrous. This research contributes to the field of video game studies by offering new insights into how horror games explore complex psychological and philosophical themes.

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## **Michaela Vanden Hull**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **The Continuous Evolution of a Monstrous(?) Medea**

In the time after *Medea's* emergence within Greek Mythology and narrative, audiences have pondered the duality of Medea, who is both a mother and a child killer, a vengeful lover and a loving wife, feminine and unfeminine. The perverse engrossment to the Otherness of Medea's "monstrosity" is what I am researching, particularly with Blandine Le Callet and Nancy Peña's graphic novel *Medea*, and how they perpetuate humanity's lasting curiosity of Medea's gruesome acts of violence against the unjust circumstances of her life. My research entails a combination of examining historical and literary criticisms of the *Medea* myth throughout history, especially in regards of alternative retellings of *Medea*, textual and thematic analysis of the graphic novel, and a comparative analysis of artistic interpretations of Medea throughout time. My research has led me to the conclusion that the graphic novel, *Medea*, is a deeply candid interpretation of *Medea*, portraying the horror of infanticide while still inciting a sense of pity and respect for *Medea*. The art within the graphic novel heightens the Otherness that Medea encounters within her life, as well as sustaining traditional visual interpretations of Medea, such as her curly hair, clothes, snake and moon motifs. *Medea* will continuously be redrawn and recreated repeatedly, but with the addition of this graphic novel, the corpus of *Medea* interpretations will move towards analyzing the multifaceted dualities within *Medea* and how they intertwine and influence each other, rather than one or a selective couple. For one cannot look at Medea's infanticide without knowing Jason's infidelity and its implications for a foreigner like Medea.

## **Lakingya Wells-Horn**

Faculty Mentor: Spencer Keralis

EUREKA! Course: ENGLISH 120 Literary Monstrosities

### **Monstrous Mothers and their victim children**

This study aims to examine the concept of "monstrous mothers" and their relationships with their children. I will analyze three films to highlight the negative treatment of children by these figures. The research intends to demonstrate the various harmful behaviors exhibited by each mother. The films selected for this analysis, which support Barbra Creed's theory regarding monstrous mothers, are "*Mama*," "*Umma*," and "*The Taking of Deborah Logan*." My research question is: How do the mothers depicted in the films support Barbra Creed's theory? I gathered articles that examine the portrayal of mothers in horror films, specifically focusing on the concept of adverse maternal figures. What I observed is that the maternal figure in "*Mama*" exhibits characteristics often associated with the castrating mother. The character of the mother in "*Umma*" embodies the archetype of the monstrous mother. *The taking of Deborah Logan* embodies a representation of the traditional archaic mother. The analytical method I employed involved reviewing the articles and extracting relevant sections that pertain to the films. The key insights I have identified are the maternal figures in each film, which support Barbra Creed's theory, along with the relevant articles that relate to these films. My primary conclusion is that all the maternal figures depicted in each film align with Barbara Creed's theory regarding mothers. I have observed that the majority of mothers in horror films exemplify the principles outlined in Barbara Creed's theory.

# **ENGLISH 225**

## **English II: Intermediate Academic Prose**

## **Muhammad Chaudhary**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **How to Make Engineering Resumes Better for ATS Acceptance**

Current engineering students face both opportunities and challenges as a result of the rapid adoption rate of Applicant Tracking Systems (ATS) for resume screening in the engineering job market. These days, resumes are scanned by these AI-assisted systems based on specific formatting requirements and keywords, which determine whether a candidate advances to the next stage. This has greatly altered the way that resumes are written, which puts pressure on applicants to not only employ conventional strategies but also to base their resumes on standards that the machines can understand. Less attention has been paid to the analysis of resume formatting and the techniques that contribute to the resume range being enhanced for applicant tracking systems. We must learn about the useful strategies engineering students can use to create effective resumes that are ATS-friendly and appealing to real human recruiters.

This study uses a case study and primary data collection through an interview with Youssef Mekawy, a STEM career services coach at the School of Science and Engineering at the University of Missouri Kansas City. For engineering students, Mekawy provided detailed instructions on how to format a resume to meet ATS requirements. By using a number of helpful recommendations, this paper aims to close this gap of the study of Mekawy ideas regarding resume formatting.

The results show that while prior research highlights the importance of technical language and content density, practical considerations involving ATS-compatible formatting are commonly disregarded. Mekawy stressed that ATS processing and readability are significantly improved by simple formatting. When creating a resume, this means using black-and-white layouts, consistent font styles (like Times New Roman, font sizes 10–12), and steering clear of complex graphics or text boxes like those found in resume templates. Mekawy's warnings against overusing ChatGPT and other AI tools to compose sentences was another crucial lesson I learned from our interview. This is because some applicant tracking systems can identify automated content, which could affect how authentic a candidate is seen.

In order to maintain clarity and authenticity, the study concludes that engineering students should write resumes in a balanced manner that includes ATS-friendly formatting and strategically placed keywords. Resumes are assured to meet ATS requirements with this dual strategy, all without sacrificing their appeal to human recruiters.

## **Edgar Contreras**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **The Power of SHPE's Website Digital Identity**

The Society of Hispanic Professional Engineers (SHPE) is one the largest non-profit organizations in the country that promote science and engineering professional careers and networking opportunities to the Hispanic communities. Unlike mainstream content from other websites, SHPE uses their specific marketing strategies to push their mission to help underrepresented communities. The question is *how* and *why* does SHPE reach out to those in search for a better future? Apart from other researchers looking into the development minority opportunities, by using a rhetorical analysis to examine the website's use of cultural symbols, inclusive language, and calls to action, my research reveals how SHPE uses these rhetorical strategies to effectively connect with its community. This rhetorical analysis will explore how individuals participate in its programs and events but also reinforces a hybrid identity of cultural and professionalism in the workplace. The main finding was the use of how the website's structure creates itself a combination of professional and culture digital identity in order to build a connection with the interested viewer to create the nostalgic sense of familiarity within and out of professional careers. With the use of bilingual context and the organization's highlighted cultural values, SHPE positively attracts their audience, using the rhetorical tools such as pathos, to positively influence and attract on an emotional appeal, where the reader feels a sense of community and belonging to what they are used to from their personal background, yet, simultaneously creates a professional image in career environments, rendering it a healthy combination. This strategy proposes an effective impact to the attendees, as the members are making a significant investment in their futures. Pursuing a career in STEM is something the SHPE members are deeply passionate about, and the emotional appeal aligns with the idea that their participation shapes their professional journeys. SHPE's website leads to highlighting the role of digital forms rhetoric in community building, offering insights into how online platforms can be designed to cultivate a sense of belonging and identity, resonating the importance that we are like some other people, yet like no other person.

**Jillian Guhr**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **Climbing Through Names: The Changing Language and Identity of Queer Community as Seen in The Ladder**

This research investigates how self-identifying language in the queer (particularly lesbian) community changed between 1956-1971 to reflect an evolving community. This is achieved through a content analysis of *The Ladder*, a lesbian periodical published by lesbians for lesbians between 1956 and 1972. For this analysis, the October and May edition from every fifth volume was surveyed (1956, 1961, 1966, and 1971). Through these editions, we can see a large linguistic shift in the words used to define the community. Early editions use words such as “homophile,” “variant,” or “sexual deviant,” while late issues omit such language, predominantly favoring “homosexual,” or “lesbian.” We can see a large shift in earlier language being preceded by definitive articles (the) to later editions using indefinite articles (a/an) or none at all.

Language plays an epitomizing role in shaping community and identity. The linguistic shifts of self-identifying language in *The Ladder* show how the queer community intentionally curated the rhetoric being used to describe themselves alongside major historical events and legislation. Thus, using it as a tool to reform not only their internal perceptions but those of societies' as well.



**Niharika Mallela**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

## **Language Discrimination in Academic and Professional Settings: A Cross-Cultural Study**

In academic and professional settings, language discrimination remains a significant yet often overlooked barrier faced by international students and non-native speakers. The psychological and social impacts of language biases are investigated in this qualitative study, with an emphasis on how linguistic variances affect people's views of their own value, self-confidence, and professional goals. Whether hidden or visible, language prejudice can influence how people perceive their own abilities and position in the academic and professional worlds. Through semi-structured interviews with a domestic student from the United States and an international student from India, this study sheds light on the particular difficulties and nuanced expressions of language discrimination, which can range from overt forms of exclusion to hidden biases in communication. A more sophisticated understanding of how language-based prejudice functions in various cultural contexts and how it impacts people differently based on their backgrounds is made possible by this cross-cultural approach. This offers a framework for comprehending the substantial, frequently undetectable effects of language discrimination by analyzing lived experiences in conjunction with current research on linguistic trauma and identity and also demonstrates that language is not only a means of communication but also a fundamental component of identity, impacting how people see themselves and are seen by others.

The findings reveal that linguistic disparities lead to a variety of detrimental psychological reactions, including loneliness, anxiety, and self-doubt, which have a substantial effect on social integration and academic performance. The participant, an international student, talked about how their accent and word choice were used to critique them, which made them feel less competent and like they belonged in professional and academic settings. Language discrimination impacts both non-native and native speakers, though in different ways, as the domestic student also explained how regional dialect bias affected intellect assessments. This study emphasizes the pressing need for institutions to embrace inclusive policies that appreciate linguistic diversity by examining these lived experiences along with the body of literature already available on linguistic trauma and identity. These linguistic inequalities contribute to feelings of isolation, anxiety, and self-doubt, all of which can hinder social integration and academic performance. The research underscores the importance of creating environments that support all students, regardless of their linguistic background, and offers recommendations for interventions that can help mitigate the psychological effects of language discrimination. In the end, this study promotes a change to a more welcoming academic and professional environment where linguistic variety is valued and everyone is given the tools they need to succeed. Through these efforts, a more inclusive and equitable atmosphere can be cultivated, where language diversity is celebrated and individuals are free to express their identities without fear of marginalization.

## **Gabi Martin**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **Nursing Associations' Literary Impact on Nursing Burnout**

The presented study investigates the impact of associations made for nurses and nursing students and their impact on the alleviation of burnout among people in this field. Nursing burnout remains a critical issue affecting both practicing nurses and nursing students, with significant consequences such as patient care quality, overall healthcare system sustainability, and not to mention the nurse's individual well-being. Nursing associations are a prominent resource for those in the field with educational materials, advocacy information, and peer support. Through a mixed-methods approach, the research done examines the types of resources available and their effectiveness in alleviating burnout. Examining the websites of *The American Nurses Association (ANA)* and the *National Student Nurses Association (NSNA)* breaks down the messages they have put out there to encourage their nurses or students. This research evaluates the availability and effectiveness of resources focused on burnout prevention and management. The findings reveal the common themes in practices and tips. The NSNA provides testimonials from the Board of Directors that prove the encouragement and benefits they received from joining. The Interviews have been done with current nursing students to investigate the likelihood of joining and how they would feel about joining one of the associations. Current nursing students are already facing burnout, and being informed of their resources, this can prevent or halt the effects of draining weeks. Whether the effect is from their website, joining the associations, or going as far as carrying a leadership position in these associations, people have realized the positives of them. This study underscores the importance of digital literary resources in nursing associations and calls for further investment in online educational tools to promote mental health and resilience in the nursing profession. However, the study also reveals notable gaps, such as limited accessibility for certain demographics and a lack of specialized resources for nurses and nursing students facing professional and academic stress. These limitations provoke the need for more support mechanisms, possibly such as online counseling or support groups. It is recommended the nursing associations expand their mental health offerings, resource accessibility, and interactive features. This would facilitate a sense of community and peer support, as well as support tools to equip nurses and future nurses with the necessary resources to navigate and manage burnout. Aspects of nurses and students such as mental health and motivation to continue in the field are looked over. But informing them of their resources and expanding the resources provided by these associations can encourage the nurses.

## **Umer Muhammad**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **AI in Healthcare**

In its “Principle for Augmented Intelligence and Development, Deployment, and Use,” the American Medical Association (AMA) tries to create an ethical framework for what the role of Artificial Intelligence (AI) will be in the healthcare system. AI is a tool that has seen rapid development within the last couple of years, and many are unsure about how to integrate it into the world if at all. My project conducted a rhetorical analysis of the AMA’s document to see how it talks about the roles and responsibilities of healthcare professionals in relation to AI. The AMA addresses these issues through strategic appeals to ethos, pathos, and logos which serve to anchor it as one of the leading authorities on AI in healthcare for physicians and patients in this new era.

The AMA shows ethos in their document by referencing past policy reports on other issues and by building on their already established authority in the healthcare field. By demonstrating that they have dealt with pressing issues in the past and succeeded, the AMA shows their credibility and trustworthiness in the healthcare field. The document’s appeal to logos can be seen by how it outlines systematic risk assessments and evidence-based policies which aim to address the complex ethical dimensions of AI in healthcare. The guidelines that it offers emphasize the standards at which doctors should be held to and argue that AI should complement, and not undermine physician oversight to ensure patient safety and the best possible care for patients. The AMA also talks about transparency multiple times within their document which is one of its focal points. This constant call for transparency further emphasizes their trustworthiness in this matter.

The AMA’s appeal to pathos, on the other hand, speaks more to the emotional, moral, and ethical side of healthcare professionals. Those who are in the field of medicine have compassion for their patients and by using emotional language, the AMA seeks to resonate with healthcare professionals’ desire to provide patient safety and the best possible care. One of the other reasons for the AMA’s call for transparency is that it makes healthcare professionals and practitioners reflect on how AI can affect more than just their own patients. It calls them to think about the greater implications of AI in healthcare.

The AMA also keeps an urgent tone throughout the document. This is to show that AI is an issue that demands the attention of those who work in the healthcare field immediately. By saying that we need a “whole-of-government approach,” the AMA frames AI as a duty and pushes their audience to be mindful and compliant.

The rhetorical analysis concludes that the AMA uses rhetorical strategies to strengthen its position as one of the leading roles in AI in healthcare. Through its use of ethos, pathos, and logos, the AMA advocates for healthcare professionals to be responsible and mindful when dealing with AI as well as to work together to provide patient safety and the best possible care for patients.

## **Maydi Ramirez**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **Culture and School: How UMKC Avanzando Writes to Students & Supports Their Success**

Lack of representation can lead college students specifically Hispanic/Latinos to drop out of college. Recent studies have shown that college students joining cultural student organizations “allows members to create a home away from home, sustain and practice their cultural ties, and collectively build critical consciousness”(Gonzalez 3). Avanzando, a Spanish word that translates to "Moving forward," is a mentoring program offered by the Multicultural Student Affairs office at the University of Missouri-Kansas City or UMKC. I analyzed Avanzando’s Instagram page and Weekly blast and I also interviewed one of Avanzando's peer mentors to get feedback on her experience with the program/organization. Avanzando's use of language translation and persuasive rhetoric pushes students to be more involved in the program and helps bring students' attention to the program. For example, In promoting the Quinceanera experience, Avanzando program leaders wrote in the weekly blast “Hispanic Heritage Month is almost over, but the celebrations continue! Join ALAS and Avanzando for an unforgettable Quinceañera Experience! The event will feature several of the staples of a traditional Quinceañera as celebrated in several Hispanic and Latin American Countries”(WAB10/4). Everything Avanzando does moves towards the ultimate goal “to increase the retention and graduation rates of scholars, as well as ensure their successful transition into the workforce and/or graduate/professional school”(Maquina Panduro). Universities should be open to more programs and Organizations like Avanzando because it benefits both Universities and Students.

## **Emily Shoemake**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **What They Never Taught Us In School Ladies: A Rhetorical Analysis of Feminist Zines**

When contributing to the conversation of grrl zines an author must connect with many types of zines, including digital and paper copies, feminist, punk, poetry, etc. I'll be building onto the research before me, such as previous conversations introducing invitational rhetoric (Sonja Foss) or the importance of fostering community as a pedagogical tool (Alison Piepmeir). From their analysis and many more, there was one particular theme that may have been overlooked. How have feminist Zinesters created invitational rhetoric in messaging for sexual and reproductive health?

Zines have been known for their anecdotal nature, they tell narratives to communicate their purpose. This led me to analyze the many types of rhetorical styles within zines. Through the archival research with LaBudde Special Collections and Chapman University Digital zines proved to provide refreshed ideas of invitational rhetoric. The rhetorical analysis focuses on defining these new styles of rhetoric and providing examples that establish Zinesters' purpose for educational passions.

The three new styles of rhetorical messaging—the contrast in styling, “explicit” conversational tone, and an informative third party—discuss the usage of vulgar language, daring tones, and uncharacteristic feminist formatting. Feminist zines have shifted their rhetorical styles to create ethos and logos appeals for a more gender-diverse audience, in a genre created primarily by women for identifying women this generated questions as to why.

There is a disconnect from personal narrative and increased information and persuasion. Zines are now being used to educate and inform in a way that grabs your attention and pulls in the reader in a new stylized way.

***“An amazing thing about this ability to create life is the human ability to control it...We have the ability to make decisions.”***

*Vasectomy and Men's Sexual Health*

LaBudde Special Collections

Anonymous, Undated

## **Hameed Suleiman**

Faculty Mentor: Jane Greer

EUREKA! Course: ENGLISH 225 Intermediate Academic Prose

### **Victory and Defeat: Exploring the Rhetorical Shifts in Sports Journalism**

When it comes to sports coverage, Reporters and journalists are often tasked with the choice of how they want to portray the teams they talk about. They may paint the underdog in the limelight as opposed to a rival being portrayed as the bad guy. However, sports journalists, such as Brett Martel, can be seen following a trend of the presenting “Fan Favorites” as the next big thing in the article “Cavaliers mark historic 9-0 start by dousing coach Kenny Atkinson in locker room”, whether that be because of their recent success, or simply because of narratives wanting to be pushed, often portraying less successful teams in a negative light or failing to shed light on them altogether.

Shaun Powell’s “30 Teams In 30 Days” series covers a multitude of teams each on different trajectories going into the new NBA season. Using the method of rhetorical analysis, I’ll be able to see how he covers two teams, one with a rich and successful history, the Boston Celtics, as opposed to a team going in the opposite direction, the Brooklyn Nets.

Shaun Powell’s coverage of the Celtics began similarly to many other journalists, elaborating on the bundle of success they continue to have. Powell makes an effort to showcase their victories of the previous season by stating achievements and proceeding them the cause of such triumphs. However, when it comes to the Brooklyn Nets Shaun puts a new spin on the team's problematic past. Rather than highlighting problems and labeling the team in negativity, he utilizes a voice of optimism, expanding on the future and preemptive strikes they could make to improve the roster.

Many sports journalists happen to follow the same formula when covering winning and losing teams. However, Shaun Powell’s work is an outlier amongst the many, with him displaying a less successful team not as an organization full of problems, but one with many solutions for the future, if the cards are played correctly.

**Aiden Thompson**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

## **How Individual Elements in Advertisements Manipulate Audiences A Rhetorical Visual Analysis of Blu's, "MyBlu" Campaign**

Since the mid-2010s, vapes have had a rapid rise in popularity. This is partly due to the aggressive advertisement campaigns conducted by vape brands. Over this time, studies have gone in-depth on the methods of advertising, the questionable morals, and the broad trends resulting from these campaigns. However, these studies often lack a thorough critical rhetorical analysis of particular elements in specific ad campaigns, leaving a window of opportunity. Since previous studies have focused more on general advertising effects, my study targets *how* specific elements shape messages, which is less commonly addressed. By using Sonja Foss's methods of rhetorical visual analysis, my study fills this gap by using a structured method to analyze Blu's "MyBlu," using Stanford Research into Tobacco Advertisements, "MyBlu" advertisement campaign archive. My study aims to use a structured approach to analyze these advertisements and find how imagery, color choice, model choice, and layout are used to create specific themes and appeals within vape advertisements. By using Foss's methods, which focus on the examination of message formulation, message interpretation, and image evaluation, I will be able to assess the effectiveness of the ad's elements in conveying the campaign's intended messages. My findings have shown that Blu's ads are carefully crafted in an attempt to normalize vaping, appeal to a modern yet diverse audience, and showcase vaping as a simple and attractive alternative to smoking and a lifestyle choice. The campaign's goal to normalize vaping within society is achieved through numerous individual elements in their ads. For example, each of their ads portrays vaping as an ordinary activity that takes place in a familiar or casual setting, accompanied by the selection of diverse models that represent various backgrounds while holding their Blu vape devices. This representation of diverse demographics not only broadens the product's appeal to a wide range of audiences but also promotes a sense of inclusivity. These model choices suggest that Blu is not catering to any single demographic or style, but instead, their product can be used to enhance each user's style. The backgrounds of these advertisements are often natural or urban landscapes, which reinforces the idea that vaping is a natural and popular choice. These choices all work to help normalize vaping by associating it with environments that people associate with comfort and relaxation. My findings have highlighted the ethical implications of tactics used in vape advertising, due to the campaign's effectiveness in normalizing vaping, it is important to consider how these advertisements dismiss known health risks associated with nicotine use. With vaping having such a large surge in popularity and showing no signs of slowing down, these ethical implications will only get worse. However, my extensive research into how particular elements in ads are used to manipulate audiences was limited to one specific vape brand ad campaign. It calls for more in-depth research on the particular elements present in all vape advertisements and the ways they convey persuasive messages.

## **Pasquale Trozzolo**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **Decoding Legal Persuasion: Analyzing the Messaging Strategies within Lawyers' Advertisements**

There is minimal research on Client testimonials for lawyers outside of ensuring they fit within the American Bar Association's advertising rules. The messages in their testimonials have been viewed by many but only acted on by a few who need those legal services. I aim to discover what rhetorical methods these advertisements use to gain clients. Many legal problems can arise, from criminal matters to civil matters, and selecting the right lawyer is important. Lawyers recognize this and have tailored their advertisements to appeal to potential clients. I will analyze these methods and discover what they use to appeal to potential clients.

I will use conceptual analysis, a form of content analysis. Conceptual analysis is when a certain concept is chosen and looked for across all analyzed items. The process consists of choosing said concept and then developing a means to discover it. The next step is to analyze the sources and mark down your findings, you then analyze your findings to see if your thesis was proven. This process, broken down for my project, was to create the guidelines for what I was searching for. I decided to search for mentions of experience, professionalism, settlements or the outcome and attempts at gaining sympathy. I then analyzed each of my sources for each of these items and marked down what I found. After that, I took my findings and analyzed them.

I am discovering that the methods used by lawyers are very similar when compared to those in the same field of law they are but vastly different when compared to other areas of law. Injury lawyers mention how much money they got, while criminal defense attorneys mention how good of a deal they got their clients. Lawyers try to appeal to individuals experiencing vastly different problems by showing them the possibility of a good outcome. The only outlier I found within the types of lawyers was that client testimonials for corporate attorneys were not as common and never mentioned a settlement or what was won from a case, just the time that the lawyer has worked for them and how good of a job they have done.

Lawyers' advertisements differ across all forms of law but have the same basic premise when it comes to how to reach potential clients. An advertisement must first reach them when they require a lawyer because most people do not keep a lawyer in their back pocket when a situation arises. Client testimonials give potential clients the best look into what it's like working with that lawyer, and the potential client will want to be as happy as the client in the advertisement when their case ends.



## **Ella Trucano**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

### **Shaping Recovery: The Power of Language in Mental Health Narratives**

Narratives that discuss mental health struggles are a prominent method of self-expression. These narratives—that are often personal recounts of times of grave hardship and suffering—may serve simply as a means of therapeutic relief, self-reflection, or to others, as an inspiring account of the author’s resilience in the face of adversity, or their journey of recovery. This paper aims to address how the language and rhetoric within these mental health narratives both influences and reflects our contemporary perceptions of recovery and self-management strategies.

The Digital Archive of Literacy Narratives (DALN) is an open-source archive of personal user-submitted literacy narratives. Nine of these narratives were chosen based on their explicit discussion of mental health challenges faced by the author, recovery processes, or the authors’ emotional states and sentiments as affected by their circumstances. A qualitative discourse analysis was then conducted using the data gathered from the narratives to analyze their effects on perceptions of recovery and self-management strategies.

A close reading analysis of these selected mental health narratives revealed that there was a deliberate use of isolating or solitary language used in reference to either the author’s mental health struggles, expressions of recovery, or other states of emotion. Such use of this language suggests an inherent belief that recovery is a solely solitary endeavor. This finding highlights how pivotal language and rhetoric are in constructing and sustaining cultural narratives around mental health. Acknowledgement of this idea can shape public discourse towards more inclusive and supportive frameworks that may value solitary resilience and the importance of communal and systemic support in the recovery process.

**Jovany Velasquez Flores**

Faculty Mentor: Jane Greer

EUReka! Course: ENGLISH 225 Intermediate Academic Prose

## **How the Language of an Environmental Impact Statement Can Affect a Stakeholders Perspective**

The discussion of environmental impact statements has been an ongoing one. Many researchers discuss whether it is an effective way of communication or if it touches base on all the ethics and the environmental problems caused by infrastructure projects. Most researchers focus on neutral and technical language contained within the EIS statements and commonly use rhetorical strategies or genre analysis to come to their conclusion. For my project, I will analyze the revised draft EIS statement of the construction of Route 71 going through Midtown Kansas City. Important to note that this is accessible through the LaBudde Special Collections. Discourse analysis will be the most appropriate way to approach the language within this EIS statement, touching on social issues and problems. Discourse analysis will help me create relationships with what is said in the statement and link it to some of the different social issues and relevant biases of that period to see what has influenced some writing within those statements. While looking through the EIS statement I have noticed the neutral and technical language style allows the writers to downplay or gloss over the actual impact this project leaves on the local community. A common technique throughout the EIS statement was bringing up a solution immediately after a problem or setback. As a result, this erases the community aspect or voice from the statement. Overall, I believe the findings in my project add to the ongoing discussion of EIS statements. The only limitation is that I am only analyzing the Route 71 EIS statement, yet it will allow other researchers to look through other statements to see if there are similar findings in other statements.

# **GECRT-SC 101**

## **Living in a Changing World: Nature's Fury**

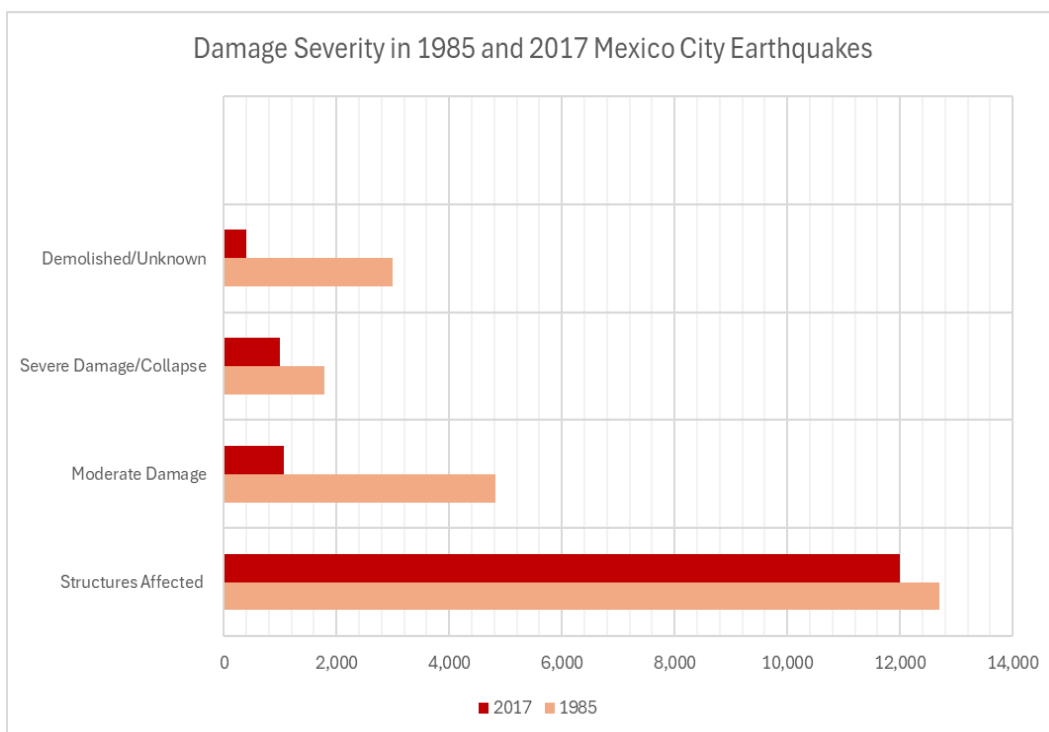
## Luke Ballin, Ivan Salgado, & Maria Jackson

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### Did Mexico City's implementation of alternate building materials reduce earthquake damage?

Mexico City has seen two major earthquakes in recent history. The first being in 1985, where an 8.1 magnitude quake caused catastrophic damage to the city. This was due to multiple factors, but namely, the shoddy construction regulations employed by the city. These lax building codes allowed for buildings to be susceptible to damage. This vulnerability led to 10s of thousands of deaths and millions of dollars in damage. After this event, the city improved their building codes and didn't have an issue like this again. Except it actually did happen again and was just as severe as the first time. In 2017, a 7.1 magnitude earthquake rocked Mexico City and caused very similar damage to the 1985 occurrence. How is this possible if new and improved building codes were in effect? In this project, we explored the damage statistics of the two events such as moderate, severe, and collapsed buildings, as well as statistics to display the materials used in these buildings such as un-reinforced concrete and masonry. We also explore the city's inherent lack of enforcement with regards to the building codes. This allowed for an almost copycat disaster. In conclusion, this project highlights not only the flaws with the construction used in Mexico City, but also the improvements that were never made to said construction.



**Hanna Bober, Sarah Wulfert, Adithrri Subramaniam, Santi Wilson,  
& Ryan Pattison**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

**How Hurricanes affect Manatees in Florida**

Through the process of studying how Hurricanes affect manatees in Florida we have drawn the conclusion that as Hurricanes increase, manatee safety decreases. While it is not directly the Hurricane storms killing manatees, the effects on their habitats, food supply, and separation from each other all come into play. Hurricanes significantly impact manatees primarily through habitat destruction, water quality changes, and food availability. Strong storm surges and high winds from hurricanes can destroy seagrass beds, which are crucial for manatees diets, leading to food scarcity. Hurricanes can also disturb coastal waters, introducing pollutants and reducing water clarity, which can harm manatees' health and hinder their ability to navigate and find food. With habitat and food concerns, hurricanes can also displace manatees. Manatees do not have a high reproduction rate so it is crucial to the population that they are able to mate. Powerful currents can sweep manatees into unfamiliar or unsafe areas, such as canals or areas with colder water, where they might experience stress or difficulty finding food. Despite these challenges manatees have shown resilience in the face of hurricanes, often returning to affected habitats as ecosystems recover. Conservation efforts, including habitat restoration and protections in hurricane-prone areas, remain crucial to support manatee populations and minimize the long-term effects of these severe storms.

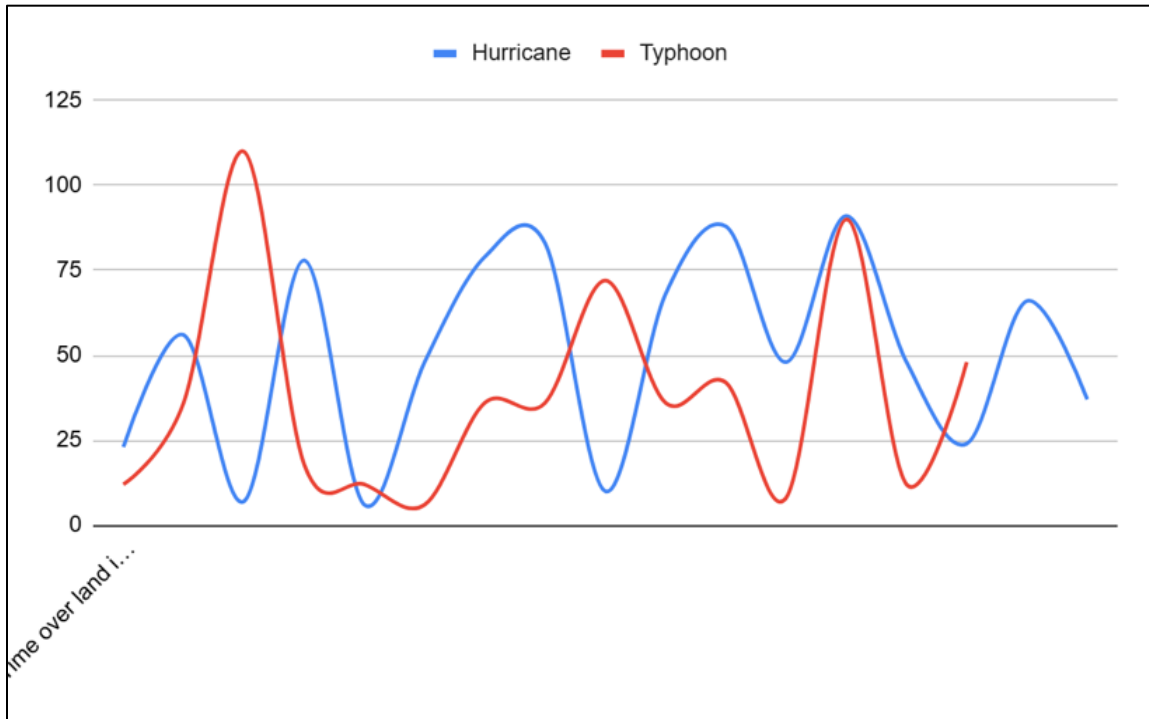
# Ian Briscoe, Luke Markley, Brandon Castillo, & Luis Hernandez

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## Differences of Financial Impact from Different Storms

This project investigates the correlation between different categories of hurricanes and the resulting financial destruction in the United States compared to East Asia. We examined data from the Federal Emergency Management Agency (FEMA) for the U.S and the Japan Meteorology Agency and the Chinese Meteorological Organization for East Asia, we analyzed the relationship between hurricane/typhoon categories and repair costs. For the United States, FEMA provided detailed data on the types of hurricanes and their associated repair costs, which allowed us to assess the financial damage across different hurricane categories. For East Asia, the Japan Meteorology Agency and Chinese Meteorological Organization offer typhoon data, including maps and categorizations. We ran across consistency and reliability problems when investigating data about tropical storms. Verifying a website's legitimacy before obtaining any information was our primary strategy for resolving these problems. Moving forward this project can serve as a foundation for further research into the long-term impacts of these storms on local and regional economics.



**Audrey Childers, Kenneth Johnson, Firahili Mohamed, & Ian Scarpelli**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## **Investigating Frequency and Intensity of Hurricanes in The Atlantic Gulf Area**

The goal of this project is to determine if climate change has an effect on sea surface temperatures which affects the severity of hurricanes in the Atlantic Gulf Area and has an impact on people living in these areas.

By researching hurricanes over the past couple decades and comparing the increase in sea surface temperatures and the increased frequency of hurricanes and finding other scholarly articles that support this finding.

There is a subtle trend that shows the increase in sea surface temperature also increases the frequency of hurricanes. Sea surface temperature variation is increasing and remaining higher than average for longer into the season. The dataset from 1975 to 2023 shows a marked increase in temperature variation on the sea surface, starting at around -0.3 and increasing gradually over the years into the 0.8-1 range, in line with the frequency of hurricane occurrence in recent history. Infrastructure in these states and islands are not equipped to handle the volume of storms occurring during the hurricane season, causing undue stress and damage to people's livelihoods.

According to the data we collected from NOAA, NASA and the EPA, the data proves that an increase in sea temperature leads to more frequent hurricanes that go later into the season. We were able to find a pattern in the sea temperature and the frequency of hurricanes, which was as the sea temperature increased throughout the past 20 years so has hurricane frequency. In recent history, the higher sea surface temperature has led to more and more frequent hurricanes, some coming right after one another. Therefore, our findings answer our question of how sea temperature affects hurricane frequency in the Atlantic Gulf Area.

While the current correlation may seem small there is still a trend that shows how the increase in sea surface temperature, which is affected by the increase in climate change, does increase the frequency of hurricanes.

With the continuing increase in global warming and sea surface temperatures, hurricanes will only get more frequent and possibly more intense.

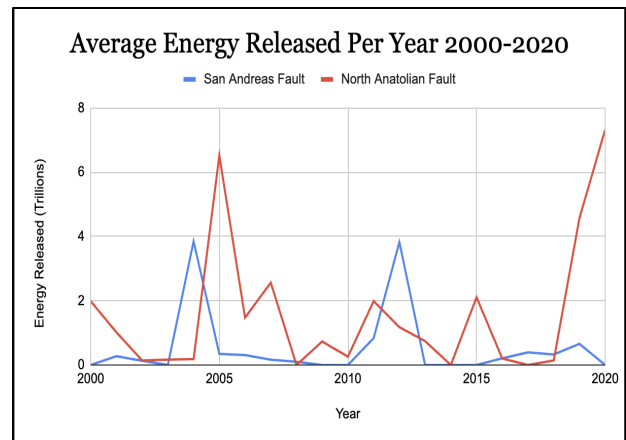
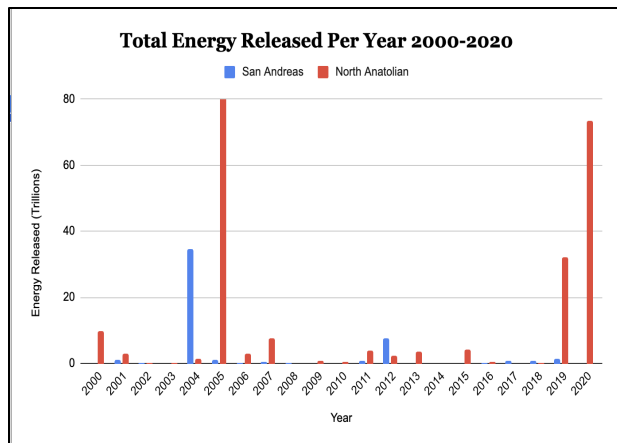
# William Clippard, Ethan Tolbert, Zak Ali, Victor Mejia, & Jim Nguyen

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## What Fault Line Releases the Most Energy, San Andreas or North Anatolian?

The purpose of this research project was to compare earthquakes above a magnitude 4.0 on the North Anatolian Fault with those on the San Andreas Fault, specifically to determine which fault released more energy between 2000 and 2020. To approach this problem, we compared recorded data from USGS. Specifically, this project looked at recorded earthquakes above a 4.0 magnitude that occurred from 2000-2020 to find which fault had released the most Jules in total. Upon collecting data, it became apparent that the North Anatolian fault was more active than the San Andreas, having 45 more earthquakes that fit out data requirements. After totaling up the number of Joules released from each earthquake, we found that the North Anatolian fault had released a significantly higher amount of Jules from 2000-2020, with a difference of 221.6 trillion Jules. In conclusion, this project helps us understand which fault line is arguably more “deadly”. The North Anatolian fault released more energy over the past twenty years; therefore, it should receive more funding and press coverage than the San Andreas. Also, this revelation could help shift the common perception that the San Andreas Fault is a dangerous place to live. The comparison highlights the greater risk faced by other populations along other fault lines, like the North Anatolian.





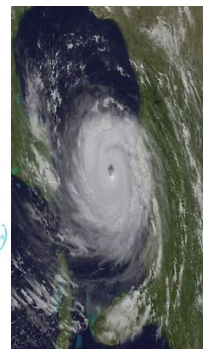
## Satori Closser, Lia Wilson, Sahra Hussein, My Nguyen, & Phuong Le

Faculty Mentor: Alison Graettinger

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### How Hurricane Katrina affected the Louisiana education system

How did hurricane Katrina affect the New Orleans, Louisiana education system, students and faculty from 2005 to 2024? We propose the effects of Katrina can be explained by mostly quantitative data such as the student displacement rate, standardized test rates, graduation and drop-out rates, how many employees were let go, and how many students attempted education further than high school. The data we have collected looks at the 196,000 out of 750,000 students displaced from New Orleans, and how those students were affected. One way to understand might be to look at how students performed on standardized tests like the LEAP, or Louisiana Educational Assessment Program post hurricane Katrina. In 2005, New Orleans evacuees' math test scores are 0.19–0.16 standard deviations below the math scores of other Louisiana students. Another way might be to examine the enrollment rates during and immediately after the storm. Student enrollment in New Orleans in 2006 dropped by **61%**, from 65,000 to roughly 32,000. This data is important in explaining the destruction the hurricane caused to Louisiana's education system. What might have had the largest impact was the complete rewriting of New Orleans' education system in the wake of Katrina, changing much of the state to a Charter system. This new Charter system continues to affect the graduation rate and quality of life for Louisiana students. Hurricane Katrina has had, and still has, clear effects on New Orleans, Louisiana's education system. Now, the percentage of New Orleans students passing the state's standardized tests has nearly doubled, to 62 percent, and the district's graduation rate has climbed to 84 percent. With that said, it can be concluded that Hurricane Katrina had an incredible impact on New Orleans, Louisiana's education system from 2005-current year, 2024. Looking at the future, this research is relevant to those cities that experience hurricanes and should be prepared in the event of one, at every level. It is important to recognize that these quantitative data sets are not proof of perfect causation, mostly correlation. It is also important to note that there may be implications of this research, but that the authors worked diligently to follow ethical procedures every step of the way.



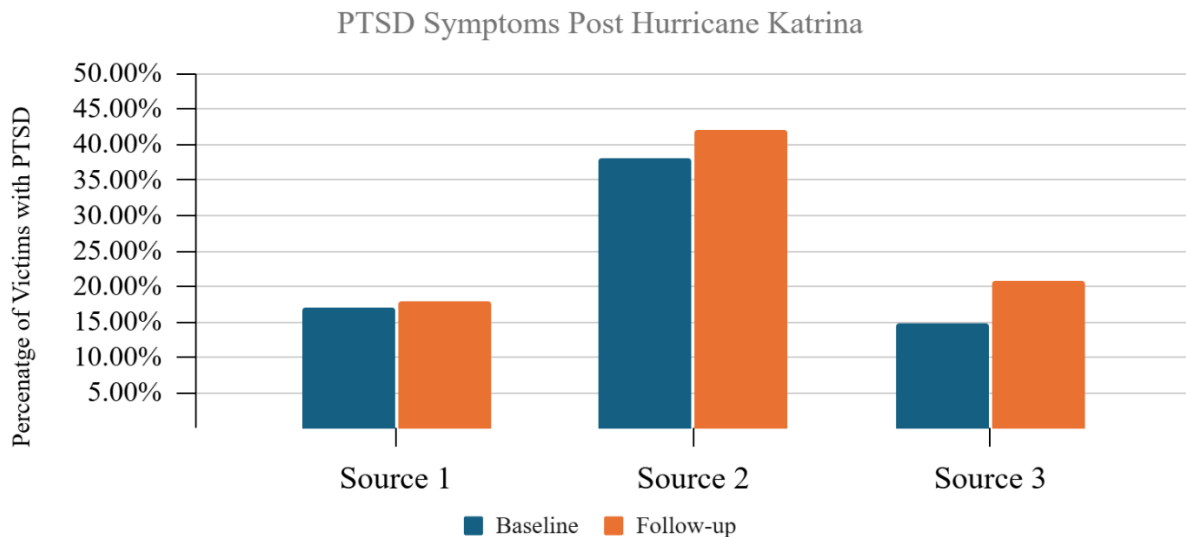
# Sheyda Dehghani, Meilan Cobb, Anahi Silva, Muna Mohammad, Emily Damian, & Blake Growney

Faculty Mentor: Alison Graettinger

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## Increase in PTSD Symptoms Post Hurricane Katrina

We researched how many people got PTSD symptoms after Hurricane Katrina. Using a range of scientific data that had done studies on the survivors of Hurricane Katrina shortly after they experienced the natural disaster and following up months after. In the graph, we can see that for every sample provided each shows an increase in symptoms following Hurricane Katrina. They are showing a delayed reaction in PTSD symptoms reported by the interviewed sample at around the 1-year mark. In one of our sources, 14.9% of people interviewed had PTSD symptoms 5-7 months after Hurricane Katrina, this rose to 20.9% after over a year. Our data displays that there is a clear persistent mental effect on people after Hurricane Katrina, particularly PTSD-like symptoms. Symptoms can include things like anxiety, flashbacks, nightmares, and self-destructive behavior. We conclude that hurricanes are extremely destructive not only to property but to the mental health of those living through it, initially when being interviewed they showed lower numbers of PTSD but when they followed up there was an increase in PTSD symptoms because now they've been living with it longer and know what's different for them. We know that hurricanes impact people, but following the long-term mental consequences of disasters like this is important. It's important to be more informed on the help people may need after a large hurricane.



# Areej Falah, Karina Galeas, Alyssa Smera, Dana Valenzuela, Melisa Botello, & Nick Bailey

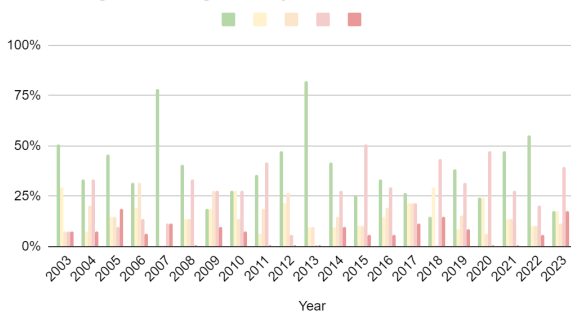
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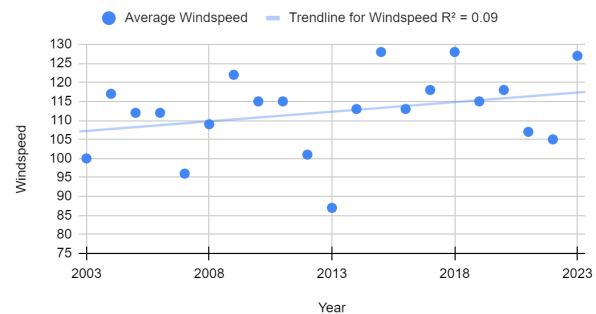
## Hurricanes in Relation to Climate Change

With recent record-breaking weather patterns, scientists believe that we are already seeing the detrimental effects of climate change. The United States alone has experienced 11 hurricanes since the start of 2024, 5 of which were labeled as major hurricanes. Our group chose to investigate the effects climate change has had on the frequencies and intensities of Hurricanes worldwide across the Atlantic, Central, and Eastern Pacific. To do this, we focused on a 20 year range from 2003-2023. Global surface temperatures were our chosen measurement of climate change and wind speeds were our chosen measurement of hurricane intensity. While the data we've collected on hurricanes does not project a significant increase in frequency, it does point to an increased rate of higher category storms (intensity). According to the National Centers for Environmental Information, the ocean's surface temperature increased from 0.44°C in [2003](#) to 1.27°C in August [2024](#). This change can appear small but plays a massive role in our research, as warmer oceans produce the perfect conditions for the formation of intense hurricanes, leading to the exponential rise in wind speeds. With this in mind, it is likely the world will continue experiencing stronger hurricanes than in the past. Thus, it is important to understand the correlation between the two factors to begin determining a plan of action.

Percentage of Categories by Year



Average Windspeed vs. Year (via zoom.earth)



## **David Fernandez, Estrella Hernandez, & Michael Reckamp**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **How 30 Years Impacted Earthquakes Recovery In Mexico City**

The objective of our study is to look at What the path to recovery looks like after an earthquake, and what the differences are between the 1985 Mexico City earthquake and the 2017 earthquake. A few points we look at are infrastructure damage, international aid and organizations, economic recovery, and damage taken by the people of Mexico City. We focused on the 1985 and 2017 Mexico City Earthquakes to compare their recovery or lack thereof. The September 19th, 1985 Mexico City earthquake had a magnitude of 8.1, then exactly 32 years later on September 19th, 2017, there was another earthquake in Mexico City with a magnitude of 7.1 both causing tremendous damage to Mexico City and surrounding regions. A few things happen after a natural disaster, like people helping; in the 1985 earthquake 52 nations and 4 organizations helped Mexico City with food, money, supplies, and people to help Mexico in this tragic time.<sup>1</sup> At the same time, the 1985 earthquake caused 8,440 buildings to sustain damage according to a report from Stanford University<sup>2</sup>. Comparing that number to the 2017 earthquake's damage total of 2,458 according to the National Library of Medicine, Mexico City.<sup>3</sup> This data follows our claim that improvement of building standards and new early warning systems is the best way to prevent damage. According to a report by the University of Colorado after the 1985 earthquake, there was only a small amount of international aid present in Mexico City with 10.4% of people questioned stating they received any form of aid from an international agency, with most saying they received rescue efforts, however, this changed by 2017 with the USAID<sup>4</sup> agency reporting that they sent everything from firefighters from Los Angeles to structural engineers in order to stabilize any buildings that sustained damage. USAID also reported that other countries in the region sent aid including Chile, Canada, El Salvador, Peru, and Panama<sup>5</sup>. While comparing the path of recovery and international aid received for the 1985 and 2017 Mexico City earthquakes we learned that despite their similar magnitude we can see the 2017 earthquake had a better outcome due to better and more efficient infrastructures, more coronation between international organizations and agencies on how to deal with a natural disaster. This proves that learning from past experiences can help the recovery process through time. The reason this is important is because of how much people have had to suffer back in 1985 than how much they would suffer now there is a big difference and it shows why we are evolving.

1. Comfort, "INTERNATIONAL DISASTER ASSISTANCE IN THE MEXICO CITY EARTHQUAKE" 1986
2. Suzki and Kiremidjian, "The mexico earthquake of september 1985, A preliminary report" 1986
3. Tena-Colunga A, Hernández-Ramírez H, Godínez-Domínguez EA, Pérez-Rocha LE. Mexico City during and after the September 19, 2017 earthquake: Assessment of seismic resilience and ongoing recovery process., 2021
4. USAID saves lives, "mexico earthquakes-one year later" 2018
5. USAID saves lives, "mexico earthquakes-one year later" 2018

## **De' Vine Robinson, Maxwell Folsom, & Oliver Lietzen**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **How have humans adapted to earthquakes?**

The purpose of our project is understanding how humans have adapted to earthquakes. Our focus was limited to California because it's known for having many earthquakes due to the San Andreas Fault System, providing us with ample data. We used data from 1980-2022 on the number of earthquakes related building codes in California and compared them to the total amount of earthquake related deaths each year. We noticed a trend that as California implemented more earthquake related building codes less people died to earthquake related deaths. In 1994 a 6.7 magnitude earthquake occurred in Northridge Los Angeles, CA where 60 people died and 7,000 were injured. The Los Angeles Department of Building and Safety reported many problems such as numerous houses were built on steep slopes that collapsed, and Steel moment frame welded joints had fractures through the welds etc., that caused many deaths. As a result, improvements were made in LADPS Mandatory Seismic Retrofit Programs in both 1994 and 1995. This improved hazard reduction in Tilt-up concrete wall building and allowed special provisions for repairs of welded steel moment frame buildings in high earthquake damaged areas. This is an example of how humans have adapted to earthquakes. As Humans adapt and understand earthquakes the better our safety measures will be able to protect people's lives, our important infrastructure, and faster recovery. This matters more than just the present but also the future for a world without death from disasters such as earthquakes and keeping society safe.

# River Gwyn, Mateo Huggins, Isaac Smith, Elizabeth Thang, & Olivia Wrisinger

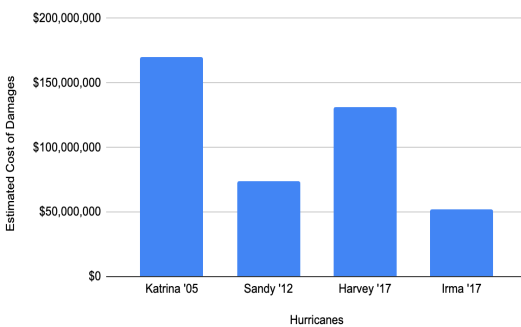
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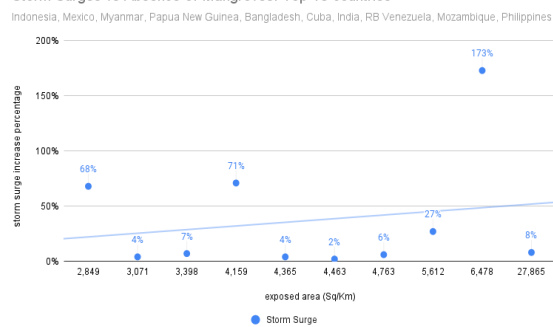
## Natural Defenders: Using Mangroves to Mitigate Tropical Storm Impacts on Coastal Communities

Mangroves play an essential role in protecting coastal communities from tropical storms; as we see an increase in the severity of tropical storms, we must find a way to protect these communities. Over the past fifty years, we have seen  $\frac{1}{3}$  of the global mangrove population die off. The decline in the natural buffer between tropical storms and civilizations has been “due to clearance [...], domestic and industrial discharge, oil spills, and poorly managed dredging” (Akram, 2023). The scientific community has done extensive research on Mangroves as a protective barrier, specifically following Hurricane Katrina in 2005, the Transoceanic Tsunami in 2022, and Hurricane Irma in 2017. Mangroves regulate sediment accretion, control erosion rates, and attenuate storm surges, all of which reduce the severity of a storm before it reaches coastal communities (Ihinegbu, 2023). In our research, we have found most causes of mangrove deforestation is due to the conversion of the area for aquatic activities. There has been an increase in storm surges in areas where mangrove deforestation is common, leading us to conclude the cause of higher storm surges is due to human interference with the natural barriers. By expanding existing mangrove forests, we have the ability to lessen the severity of future tropical storms before they make landfall and impact coastal communities.

Costal States Repair Cost from Tropical Storms

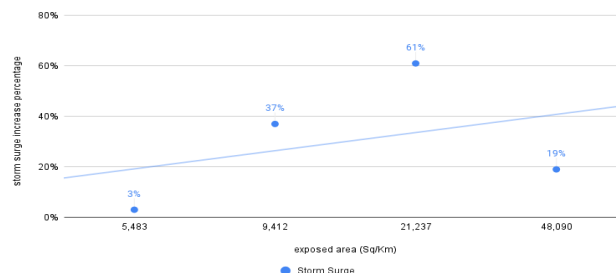


Storm Surges vs Absence of Mangroves: Top 10 countries



Storm Surges vs Absence of Mangroves: 4 Regions

(Sub-saharan Africa, East Asia & Pacific, Latin America & Caribbean, South Asia)



## **Avleen Kaur, Heidy Paredes, Da'Mya Thomas, Zoey Marshall, & Ta'Mya Cann**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **The Impact of Climate Change on Typhoons in the Philippines**

For our research thesis, we looked into the impact of climate change on the frequency and intensity of typhoons in the Philippines. To conduct this research, we compared the global average sea surface temperature to the yearly numbers and classification of typhoons in the Philippines. The global average sea surface temperature has steadily increased at a rate of 0.14°F per decade. We aimed to determine whether or not this rise would result in more frequent and disastrous typhoons within the categories 4 and 5.

In order to determine whether climate change and surface sea temperatures rising had an effect on the intensity of typhoons, we had to gather information on the sea surface temperatures from 2000-2023 and compare it to how many level 4 and 5 typhoons hit the Philippines in those years. Most of our data was gathered from PAGSA and EPA.

Our data indicates that there is no correlation between the intensity or frequency of typhoons in the Philippines and average sea surface temperature. As global sea surface temperatures continued to rise during multiple periods between the years 2013-2023, the number of typhoons were relatively average. There were even points during the decade when the number of typhoons dropped drastically, such as in 2017, 2018, and 2022 when there were only 1-2 typhoons per year. Since 2021, the global sea surface temperature has continued to rise more than 0.7 degrees Fahrenheit above the average. Despite this, typhoon frequency in the Philippines has been the lowest it has ever been since 2005, with only 1 typhoon in 2021 and 2 in 2022. Additionally, there has been only a single Category 5 typhoon (super typhoons) since 2017, while there were 9 from the years 2010-2016.

After comparing the sea surface temperatures with the intensity of typhoons in the Philippines we noticed there is no correlation between the two. Even when the sea surface temperatures would rise there would not be more or less or more intense typhoons in that year.

While researching, we discovered how hard it is to find international data sources that cover tropical storms and hurricanes in the Philippines specifically. For future implications, I think more access to scientific sources that cover a larger timeline would help answer a thesis exploring international storms.

In closing, our research thesis looked into the impact of climate change on the frequency and intensity of typhoons in the Philippines. To explore this thesis we compared the global average sea surface temperature to the yearly numbers and classification of typhoons in the Philippines.

## Alissa Ketner, Bryanna Planker, Isabella Almaguer, & Ginger Jones

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### Effects of Damage from Hurricanes

History of hurricanes category 3 and above and the reflecting damage associated with them along the southeast coast of the U.S. Using the National Weather Service, World Vision, and NOAA, we located all hurricanes on the southeast coast of the U.S. starting in 2000 we then measured damage categories by looking at fatalities and damage costs to the state affected. While looking at the data and charts, a pattern of hurricanes reaching category 3 and above was frequently shown. The damage costs ranged from millions to billions. Categories 3 and above require more extensive rebuilding efforts, with significant community and governmental support. Areas impacted can prolong recovery due to the extent of damage since common vital damages consist of economic impacts with insurance claims and disruptions of businesses. Flooding/water damage and inland flooding damaging homes and infrastructures. Environmental Impacts, like habitat destruction and pollution, are also a factor. Ultimately, it causes enhanced preparedness and increasing investments and infrastructures while planning to mitigate the impacts of future hurricanes. We can tell when storms are approaching and by building up an emergency fund based on the category anticipated we can reduce the amount of impact each storm has on the nation. Based on the chart and research provided we can conclude that by anticipating the damage each hurricane category brings we can reduce the impact on the surrounding area and nationwide economic challenges. Overall, from the information gathered, we are researching hurricane activity based on category and regional location along with the effect it has on the nation.

#### *Notable Hurricanes from 2000-2024*

Hurricanes	Category (maximum cat. reached)	Damage Costs	Total Fatalities (entire hurricane)	Most Effected State	Year
Ivan	5	\$26.1 billion	91	Alabama	2004
Katrina	5	\$161 billion	1,833	Louisiana	2005
Dennis	4	\$2.5 billion	16	Florida	2005
Cindy	4	\$12 million	3	Louisiana	2005
Ike	4	\$38 billion	214	Texas	2008
Gustav	4	\$8.31 billion	153	Louisiana	2008
Isaac	4	\$3.11 billion	5	Louisiana	2012
Nate	1	\$18 billion	48	Alabama	2017
Irma	5	\$77.16 billion	134	Florida	2017
Harvey	4	\$125 billion	107	Texas	2017
Michael	5	\$25.1 billion	74	Florida	2018
Barry	5	\$600 million	3	Arkansas & Louisiana	2019
Zeta	3	\$4.4 billion	9	Louisiana	2020
Delta	4	\$4.4 billion	5	Louisiana	2020
Ida	4	\$75 billion	95	Louisiana	2021

Data from:

National Weather Service: <https://www.weather.gov/mfl/hurricaneirma>

The Weather Channel: <https://weather.com/news/news/2018-03-13-hurricane-irma-death-toll-nhc-final-report>



**Ethan Maisonneuve, Isaac Wilson, Brandon Zanatta, Tar Reh, & Imani Dyke**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## **Measuring Hurricanes**

Should hurricanes be measured by their wind speed or is there another category that is more correlated with damage and harm to human society, infrastructure, and the environment?

Our purpose, for the betterment of hurricane preparation, disaster response, and communication of damage and details of hurricanes, is there a higher causational characteristic to measure hurricanes by rather than their wind speeds'. We measured all hurricanes from 2000-present day, and the different harmful processes that hurricanes bring. Those other parts of the hurricane being - storm surge, rainfall, and size. We got statistics, and almost all of our information came from U.S National agencies, or state run agencies. There were some organizations that provided information, and we did use some of their information, but were sure to use reliable sources and beware of misinformation. We observed that wind speed is still a viable solution and source of information. On average, each part of the hurricane was increased in height, or damage as wind speed increased too. More specifically, we found that between category 4 and category 5 hurricanes, rainfall increased too. And for storm surge too, that also increased in height as wind speed increased. Since high wind speeds equate to higher storm surge, and more rainfall, we find that there is no reason to discredit wind speeds as the main way to categorize hurricanes. As winds push higher and faster, this causes higher storm surges, and it's found that because more wind is moving, more clouds are being formed, which in turn makes more rain and causes high amounts of rainfall per inch, and more areas being affected. For the betterment of measuring, predicting, archiving, and spreading information about hurricanes, it is still most effective to measure the hurricanes with wind speed categories. Moving forward, it is still very important to be skeptical, and always question what you are told and how processes are measured. But in the scope of hurricanes, it is clear that wind speeds are the most reliable, consistent, causational, and effective.

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## **Charlie Meyer, Celeste Michael, & Georgina Trevino**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **The Economic Impacts of 2005 Category 5 Hurricanes**

For this project, we examine the correlation between the economic impacts of Category 5 hurricanes in 2005 and the storm's components. All four Category 5 hurricanes, Emily, Katrina, Rita, and Wilma, all hit land as category three. These storms may have all been similar, but Katrina was the most costly, costing 161 million dollars (USD). Initially, we wanted to determine if the highest sustained wind speed and correlation with overall economic-related impact. Although Hurricane Wilma and Hurricane Emily had the highest sustained windspeed they cost the least. Next, we wanted to see if the presence of tornadoes correlated with economic impact; with hurricane Rita having the most with a total of ninety documented tornadoes. Finally, regarding overall storm duration, we found that Hurricane Emily was the longest, and Hurricane Wilma lasted the shortest at just twenty-four hours. The data we found overall remains inconclusive. In terms of sustained windspeed at the time of landfall, it appears that the two most costly storms, Hurricane Rita and Hurricane Katrina. Hurricane Katrina had a lower average sustained windspeed at landfall despite having a significantly higher economic impact. Additionally, our results remain inconclusive in regards to tornadoes given that Hurricane Rita had over double the amount of tornadoes as Hurricane Katrina but did not result in a higher economic impact. Lastly, we were unable to find a correlation between the length of the storm and economic impact given that Hurricane Emily lasted longer than all Category 5 hurricanes in 2005 despite having the lowest economic impact. In conclusion, we were unable to determine any through-line conclusions correlating the number of tornadoes, sustained windspeed at the time of landfall, and storm duration to overall economic impact. We must investigate these hurricanes because it's important to determine which attempts help reduce hurricane destruction and which could make the hurricane more destructive. The investigation of hurricanes is important because understanding all components of the storm can help educate others on personal estimated economic impact.

## **Shirley Moreno-Zarate, Marlen Salais, & Ja’Niya Eatman**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **Psychological Impact of Hurricane Katrina**

In this project, we’re looking at the effects of Hurricane Katrina, which happened in 2005. More specifically, answering the question “What are the psychological impacts that Hurricane Katrina caused on communities?” Hurricane Katrina impacted many individual communities, but we focused on the states in general, Louisiana, Mississippi and Alabama. We explored how the disaster affected people’s mental health in these states.

Now that we have our background information covered we can go more in depth about the problems this caused. We decided to look into multiple case studies and research each state that was affected (Alabama, Louisiana, and Mississippi).

In addition to this you can see based on our charts we also covered the multiple mental effects Katrina caused like anxiety, depression and PTSD. With this you can see that although Louisiana was the state with the most damage done Alabama still had a higher rate in depression than Louisiana, Alabama had a 47.4% vs Louisiana which only had a 33%.

These results inform us on the statistics of the psychological impact on these states. Even though Alabama didn’t experience much damage, overall, there was still a higher depression rate. It shows that communities can still experience high mental health issues even if the damage wasn’t as destructive.

In conclusion we can see that Katrina had more than just physical effects on people but also psychological effects which most people seem to ignore or not treat with the same importance as they do with physical problems.

With that being said, now that we are aware of these mental problems we can be more prepared for them in case of future hurricanes. Making sure citizens know that there is help out there and that there are people out there who care about these effects that are being caused by not just hurricanes but all natural disasters in general.

**Alexa Omorodion, Sofia Martinez, Sara Hanon, Inara Bhakta, & Arjan Deol**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **Hurricane Ready Hospital Infrastructure, What Went Wrong?**

This study overviews the infrastructural and resource alterations that hospitals can make to reduce structural damage and patient injury. Data on hospitals in the paths of hurricanes Katrina, Harvey, and Ian was collected, such as the storm surge and wind speeds, as well as the number of deaths in the hospitals. We found that hospitals that did not invest in hurricane specific infrastructure suffered more damage to both structural integrity, resource availability, and patient care. After Hurricane Katrina, Ian, and Harvey, certain hospitals (mentioned in the project) decided to take steps to minimize future damage. Hospitals that decided to make conscious efforts toward hurricane infrastructure, such as moving important equipment to higher floors, storing more fuel for power outages, or building boat ramps, are predicted to suffer less damage in the event of another hurricane. These alterations strive to keep hospitals up and running for as long as possible in order to increase patient comfort and health. Especially to those who are unable to leave the hospital, such as patients suffering from chronic illness. Hurricane-ready infrastructure applied to hospitals maintains the safety, health, and comfort of both patient and staff who happen to be in the path of a hurricane. In order to ensure less damage to hospital infrastructure as well as its impact on patients in the future, it is essential to consider this research for better preparation of hospitals before a hurricane occurs.

**Angelina Pearson, Quinn Cavin, Wendy Reyes, Stephanie Sanchez, & Alvincent Thai**

Faculty Mentor: Alison Graettinger

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**Impact of Hurricanes on The U.S. Virgin Islands**

The U.S. Virgin Islands have updated building codes in response to hurricane damages in the last forty years. Using the damage cost of thirteen hurricanes that have hit the U.S. Virgin Islands and years building codes were updated, they were analyzed to determine the effectiveness of new build codes. This analysis revealed that after 1995, when the U.S. Virgin Islands updated their building codes to withstand winds up to 110 mph, lower-grade hurricane damage costs were under 225 million. When you look at lower-grade hurricanes from 1995 and before, the damage costs were over \$300 million. Higher-grade hurricanes still had damage costs well over billions of dollars even when building codes were updated again in 2018. When this data was interpreted, the conclusion that was made was how new building codes have helped with lower-grade hurricane damage costs. To be specific, category four hurricanes and under. But when you look at the damage cost of category five hurricanes, the building codes that were implemented did not work as effectively as they did for lower-grade hurricanes. These results indicated that as much as building codes are updated, there will still be hurricanes that will cause a significant amount of damage to the U.S. Virgin Islands. As hurricanes continue to get stronger, building codes will continuously need to be updated to reduce damage costs and help communities recover faster, especially in damage-prone areas.

# Ian Pond, Baneen Albasri, Jalyssa Head, David Oyona Ibandzo & Sam Schisler

Faculty Mentor: Alison Graettinger

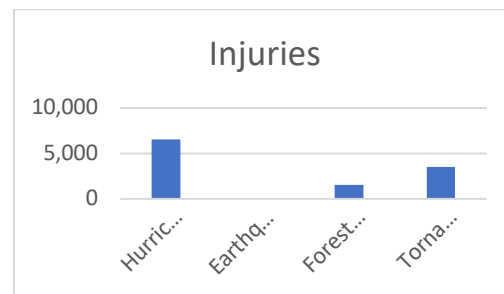
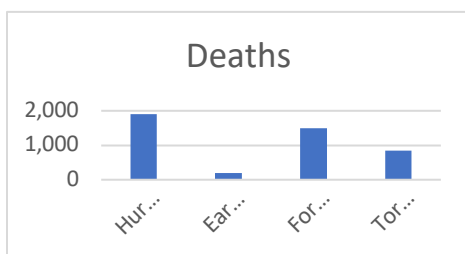
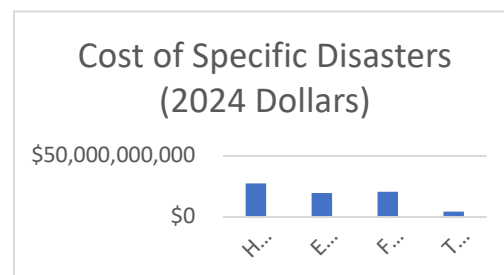
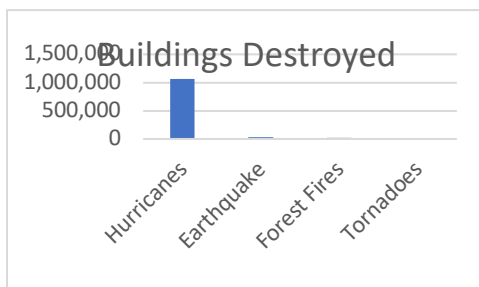
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## Nature's Fury: Destruction of Hurricanes

The purpose of our project was to see how much more devastation is caused by extreme hurricanes compared to other notable natural disasters in America. We utilized primary data for our research, particularly government sources such as the National Weather Service, NOAA, & USGS along with other public records. From there, we compared two historical hurricanes (Andrew & Katrina) up against two other historical events three other common natural disasters in America: Wildfires (the Camp Fire & the Peshtigo Fire), earthquakes (the Great Alaska Earthquake & the San Francisco Earthquake), & tornadoes (the Tri-State Tornado & the Joplin Tornado). Each of these natural disasters were measured against four different categories: buildings destroyed, cost of damage, injuries, and deaths.

The statistics collected in the graphs below showed that hurricanes in America do indeed cause more financial ruin and negatively affect the wellbeing of people across all categories compared to the other natural disasters. Hurricanes caused \$6.6 billion worth of damage more than forest fires which came in second & hurricanes also more than doubled the amount of buildings destroyed & injuries caused by other disasters.

In summation, we accomplished what we set out to do in showcasing how much more destructive hurricanes are than other events. Moving forward, we have more incentive to better anticipate hurricanes & to better protect our homes, businesses, and people overall. Some recent innovations that have come about are installing storm panels to protect windows & doors from flying debris, anchoring one's roof with hurricane straps, installing flood barriers, & several others. Hurricanes are a force to be reckoned with and our research has made the assertion more abundantly clear.



**Maggie Pursley, Emilie Gladieux, & Tyson Leuthauser**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## **Hurricane Resilience through Water Management in Florida and Louisiana**

Improvement to risk reduction systems in water infrastructure is the most efficient preparedness strategy for reducing hurricane damage in Louisiana and Florida.

Utilizing Continental United States Hurricane Impacts/Landfall data from NOAA, we selected hurricanes Katrina, Ian, and Ida as the focus of our research and conducted a comparative analysis of the death tolls and monetary damages before and after the enactment of the Post-Katrina Emergency Management Reform Act (2006).

Analysis revealed that one of the major vulnerabilities contributing to catastrophic damage in New Orleans during hurricane Katrina was the inadequate state of water infrastructure. Levees in the area were old and in need of repair, which ultimately led to their failure and the widespread flooding of the city. A similar trend was seen in Hurricane Ian, where over 18 million gallons of wastewater overflowed from management facilities and flooded residential areas. In contrast, Hurricane Ida's damages were less impactful in many parts of New Orleans, where the \$14.5 million Levee Protection System which was built following Hurricane Katrina provided protection. However, some unprotected areas, like Galliano, experienced more devastating impacts than during Hurricane Katrina, despite Katrina's increased total wind speed. In Galliano, wind gusts reached up to 121 mph during Ida, while they peaked at 94 mph during Katrina.

These results indicate that the main cause of overall increased damages during hurricanes is a lack of adequate risk reduction in water management systems, including storm surge barriers and wastewater treatment facilities.

High risk areas for flooding and infrastructure loss in Florida and Louisiana need to focus on preparing water management systems prior to hurricane season to prevent further monetary damages and loss of life, especially as climate change continues to fuel the intensification of storms.

## **Mark Rigoli, Ajay Allen, Joel Barraza, & Omar Aguilar**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **Secondary Disasters Triggered by Earthquakes**

Earthquake can be very destructive natural events, This event happens all over the world, often causing immediate and extensive damage. However, beyond the initial impact, earthquakes commonly trigger secondary disasters that intensify their effects and complicate recovery efforts. This paper investigates the interconnected risks posed by these secondary hazards including landslides, tsunamis, fires, infrastructure collapses, and public health crises that typically follow significant earthquakes. Landslides and tsunamis, triggered by seismic shifts, can devastate regions far from the quake's center, while fires, often ignited by damaged gas lines or electrical infrastructure, can quickly spread and strain emergency resources. Additionally, the collapse of critical infrastructure, such as roads, bridges, and hospitals, hinders rescue and relief operations, isolating affected areas and prolonging hardship. Furthermore, health risks including physical injuries, disease outbreaks due to compromised sanitation, and mental health challenges from trauma add complexity to disaster response.

This paper uses recent case studies to demonstrate how these secondary impacts can intensify the overall destruction and place a significant burden on disaster response systems. Through examining current preparedness measures, response strategies, and gaps in existing disaster management frameworks, this study underscores the importance of adopting a comprehensive, multi-hazard approach to earthquake preparedness. Anticipating and planning for these cascading effects are essential to building resilient systems that can safeguard lives, limit economic losses, and speed recovery. This research advocates for more integrated policies and heightened readiness to address the full spectrum of earthquake impacts on communities globally.





**Avari Schwenk, Jessica Yakandji, & Kalkiedan Kassa**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

### **Investigating the Economic Impact of Category 3 Hurricanes in Florida**

This project aims to analyze the economic impact of Category 3 hurricanes on Florida's economy with a focus on total cost of property damages, job loss, and insurance claims. Storms of these types are occurring more frequently than before and are costing the U.S. immense amounts of money each year to rebuild and support the families affected, so we must observe impacts to learn how to economically prepare for future disasters. Statistical data gathered from sources such as FLOIR (Florida Office of Insurance Regulation), NOAA (National Oceanic and Atmospheric Administration), and BEA (Bureau of Economic Analysis) provided a numerical foundation for quantitative assessments. When researching the economical impact of Category 3 Hurricanes, we found that residential property damage (*Homeowners, dwelling, mobile owners, commercial residential*) is the most significant piece of total estimated insured losses. For hurricane Milton alone, residential property damages totaled \$2,310,765,973 out of the overall \$3,039,937,990, making up for about 76% of total reported losses (FLOIR). These numbers reflect the significant disruption to local communities, which in turn leads to direct and indirect job loss. This trend is observed in most Category 3 hurricanes but fluctuates depending on hurricane path, population and insurance market adjustments. Overall, the magnitudes of these tropical storms from all categories have greatly damaged Florida's economy as they are becoming more frequent, especially for residential damages and unemployment. This has been a developed pattern in the gulf state and it highlights the need for strategies such as stronger infrastructure, effective insurance practices in response to natural disasters, and critical future development planning that can help deal with the disruptions in the community and economy.

**Ade Williams, Arjelia Guillen Macias, Vanessa Guillen Macias, & Giancarlo Ogaz-Flores**

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

**Hurricane Changes in the Carribean Over a 50-Year Period**

This study explores hurricanes and the changes in wind speeds through a 50-year period on specific islands in the Caribbean. We conducted a comparative analysis between the Bahamas, Jamaica and the Dominican Republic assessing the duration and intensities of specific hurricanes. Utilizing historical data with the use of graphs and tables reveals a significant trend amongst each one. Our findings reveal certain categories being more prominent than others for a period of time. According to our research, a category 3 or higher hurricane happens in these Caribbean islands on average, about every 7 years. Utilizing many sources and our own research we predict that the Bahamas, Jamaica, and the Dominican Republic may see a category 3 or higher over the next 5-10 years. Over time we can expect to see an increase in wind speeds and durations that may be very detrimental for these areas. This is important to note as this could change in the next few years. Taking this into account we can bypass or take necessary actions to better prepare ourselves for the future. Our study highlights the changes through a specific time span and its impact over the years.

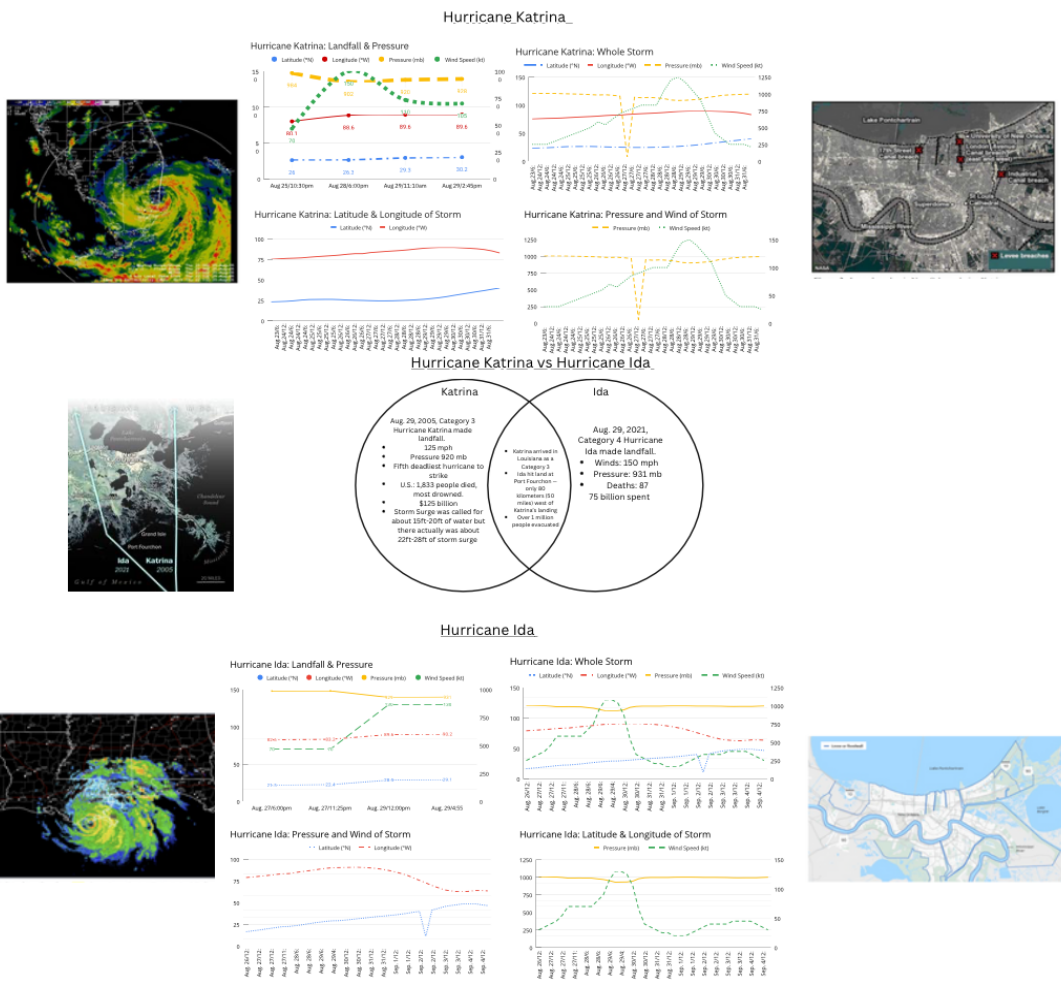
# Kellie Wong, Mariana Fierro, & Madaline Reynolds

Faculty Mentor: Alison Graettinger

EUReka! Course: GECRT-SC 101 How Do I Live in A Changing World

## Hurricane Katrina vs. Hurricane Ida

Our project will cover comparing and contrasting Hurricane Katrina and Hurricane Ida, the categories they were forecasted as and the actual category that they hit, the damages, and change in laws or laws that were helpful for Hurricane Katrina and were kept for Hurricane Ida. For our project we have made a diagram explaining the difference and the similarities of Hurricane Katrina and Hurricane Ida. We also have made four different graphs for each hurricane to give a visual answer to Hurricane Katrina vs. Hurricane Ida. Overall, we have collected data that can help us explain the similarities and differences between Hurricane Katrina and Hurricane Ida. (Image below shows what we have completed so far for our project)



# **GECRT-SS 105**

## **Perspectives on Gender and the Economy**

## **Alana Anderson**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Lowering Poverty in Female Entrepreneurship**

In Kansas, they have a poverty rate of 14.5 for women and female-owned businesses. I want to study this project because we need to help aspiring female entrepreneurs on how they can reduce poverty in their businesses. The main focus in helping female entrepreneurs is lowering poverty rates in female-owned businesses in Kansas. Poverty impacts female-owned businesses which can lose their privilege in marketing and limit their finance. Doing some research on the relationship between female-owned businesses and women's poverty in Kansas, I started by comparing poverty rates on both genders and found out that compared to the female poverty rate of 14.5, the male poverty rate is lower with a rate of 12.7. What I also found when relating female entrepreneurship to women's poverty in Kansas was women in businesses could not get equal pay until 2074. But they can call for equal pay that can reduce poverty from 8.1 to 3.9 percent. Poverty has been an impact in female entrepreneurship limiting their finance. But if we can lower poverty rates in, they can have a chance of high pay in their business and if we can call for equal pay, we can help reduce poverty in female entrepreneurship.

## **Luke Ballin**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Strength in Numbers: The Benefit of Unionization on the Gender Wage Gap in Louisiana**

In the state of Louisiana, women earn on average, 78 cents to every dollar a man makes. This becomes worse when you compare the wage gap of the state of Louisiana to the national average, where women earn 83 cents to every dollar a man makes.

Louisiana's wage gap is among the broadest in the United States while the state ranks lowest in terms of employee satisfaction and opportunities, as well as unionization rates. This could mean that greater unionization in Louisiana could single-handedly improve their job culture.

This project will address the following question. What is the impact of unionization on gender-based pay discrimination?

We've found that by displaying the benefits of unions, we can encourage employees to unionize in their own line of work. In doing so, they're guaranteed to improve their working conditions and pay equity which would have a monumental impact on the women of Louisiana.

## **Delanie Bestgen & Chance Nelson**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Parental Leave, The Solution to Missourian Family's Problems**

The state of Missouri does not currently require paid parental leave. Parental leave positively affects working people by allowing them to take time away from work to care for new children. Paid parental leave is a system that allows members of the workforce to take time away from work while still retaining their wages. Requiring employers to offer parental leave is strongly needed, as it allows members of the workforce to take care of children, perform household tasks, or just take a break from work without the fear of losing their way of living and while being paid. This is important as a quarter of mothers must return back to work only ten days after giving birth. We have found that improving access to paid parental leave in Missouri not only promotes more activity in the workforce for both men and women, but also benefits low-income families the most. It could help decrease gender stereotypes and positively impact social reproduction. Increasing access to paid parental leave will allow families to have more time for social reproduction, combat against gender stereotypes, benefit low-income families, and overall, positively impact the economy.

## **Maiya Harrison**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Addressing Sexual Harassment in Texas: A Call for Change**

Guiding Question: In what way does sexual harassment in the workplace impact women's economic advancement in Texas?

Sexual harassment in the workplace can't go without rectifying because it plays a significant role in sustaining the gender pay gap, job segregation, and many opportunities not made available to women. The biggest to me, being gender pay gaps. According to the Texas Women's Foundation report of 2020, women in Texas earn an average of \$.79 for every dollar earned by men. According to the National Women's Law Center report of 2021 black women earn \$.63 in Latina women come in at \$.55 for every dollar earned by white men. These factors play a vital role in women's chances for career growth and pushes many of them to leave the job, having to start over somewhere else or to overlook the little opportunities they do have as far as work goes trying to find a job that they will earn what they deserve. By acknowledging that gender pay gap is a real issue, setting laws and regularly informing employees that sexual harassment/discrimination of any kind won't be tolerated in workplaces, Texas could create safer and more inclusive workplaces. Which can lead to more financial independence and equality for women in the workforce. This can cause a ripple effect, helping those with other obstacles such as having a disability, feel like they have a fair chance within these companies as well. Achieving pay equity would reduce the poverty rate for employed women significantly, while creating a more supportive and inclusive environment that influences women to remain in well-paying roles. If it's made clear that workplace harassment won't be tolerated, that could be the beginning of closing gender pay gap, and many more underlying issues in our economy, and ensuring lasting economic fairness and safety for women in Texas.



## **Lillian Le, Janet Salcido, & Maribella Jeffery**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Expansion of Home Health Aides**

A report done by Mandar Bodas, Kaushik P. Venkatesh, Lyndsey Gallagher, and Margaret Ziemann Rhea Kalluri found that Missouri was planning to increase provisions to home care agencies through the 2021 American Rescue Plan Act by 3 to 5 percent. Within Missouri, disabled households face inequitable circumstances within the household due to both limited and expensive access to health home aides and the restrictive measures of the workforce. The opportunity of employment for disabled people can be narrow, and this in turn can affect disabled primary caretakers within the household if they must juggle several things at once to meet the necessities of life. Due to the cult of domesticity, women are often expected to carry all house duties. Thus, in Missouri, primary caretakers are forced to stay home and lose out on economic opportunities. Expanded access to home health aides in Missouri will provide more job opportunities to those interested in health care and benefit the economy and social reproduction.

Along with this, the primary caretaker can spend more time going to work and contributing to the economy. The federal benefit of home health aides will ease the workload of the caretakers of children and adults with disabilities and provide them security due to lower costs from federal subsidization. Thus, this policy of expanding home health aides to disabled households will create a positive impact on the economy, quality of life for disabled people, and social reproduction.

## **Sophie Marshman & Claire Saubers**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **One Standard for All: A Universal Sexual Harassment Policy for California workplaces.**

Sexual harassment and assault continue to remain significant barriers to women's full participation in the workforce, affecting their engagement and hindering career progression. The California Department of Fair Employment and Housing, there were 6,487 harassment complaints, with 41% related to sexual harassment in the state of California. 64% of these complaints were filed by women. Women who have experienced sexual harassment are more likely to leave their jobs, impacting their wages and career progression. These continuing issues not only have direct consequences for the individuals but also contribute to the gender wage gap and occupational, where specific jobs are predominantly held by one gender over the other.

By directly acknowledging and confronting these issues, California could significantly improve the workplace environment, making it safer and more respectful for all employees. Implementing such a policy would create a culture of equality, ensuring that all individuals, regardless of gender, have equal opportunities for advancement. As a result, women would be more likely to pursue higher-level positions and leadership roles, thereby contributing to a more diverse and equitable workforce. This comprehensive approach benefits women and enriches the entire workplace, fostering an environment where everyone can thrive.

**Caleb Nielsen & Erin Johnson**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

## **Bridging the Divide: Labor Unions and the Gender Wage Gap in Kansas' Construction Industry**

The construction industry in Kansas grapples with a persistent gender wage gap. Women currently make up 8.9% of the employed construction workers in Kansas and have a median annual income of \$48,000 compared to men's median annual income of \$55,000. Addressing this gap is critical for equity in wages and promoting a more inclusive and diverse workforce contrasting those traditionally dominated by men. This research explores the role of labor unions as a potential equalizing force within the Kansas construction industry, examining how union practices, collective bargaining, and advocacy efforts impact the wage disparity between genders. This study aims to analyze national union-led initiatives that prioritize wage equality and propose a policy that strengthens unions' capacity to negotiate equitable pay structures. Preliminary findings suggest that union involvement has the potential to significantly reduce wage disparities, with unionized female workers in the construction industry experiencing a smaller wage gap compared to their non-unionized peers. In conclusion, enhancing the role of labor unions appears to be a promising strategy for addressing gendered wage gaps in Kansas' construction industry, providing a scalable model for other states facing similar challenges.

## **Ulises Nieto-Ceron & Seiry Melendez**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Addressing Workplace Sexual Harassment and Assault in Kansas**

How does addressing workplace sexual harassment and assault contribute to the **gender wage gap** in Kansas?

Gender wage gap can negatively impact many workers. In our research, we found studies that indicate it can cause poor social reproductivity and an unstable work environment. It is important to recognize many people (especially women), are affected by this globally and there should be more efforts to prevent sexual harassment from happening on the job. Addressing this social policy within the state of Kansas is significant because it allows for more awareness of the issue in a specific area rather than talking about it broadly. Providing more research on the topic allows companies to protect their employees more effectively, which could drastically improve job performance and productivity. Studies also show that it is important for an organization to have an anti-harassment policy. In all, this policy measure raises the amount of awareness for sexual harassment and helps in closing the gender wage gap in Kansas.

## **Asia Petty & Kristyl Dawn**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Power of the Union**

Addressing gender and racial pay disparities is a critical issue for New York, especially given its high rate of union membership. In 2022, statistics revealed that women in New York earned only 87.5 cents for every dollar earned by men. This gap highlights the persistent inequality in compensation that affects many workers, particularly those belonging to underrepresented racial and ethnic groups. Tackling this issue proactively can allow New York to set a powerful example for other states and potentially drive nationwide improvements in wage equality. We propose that unions play a leading role in facilitating pay transparency across all workplaces. By making compensation practices more transparent, unions can help ensure that pay is based strictly on merit and performance, rather than on gender and race. This approach has already shown promising results in certain New York companies that have adopted transparent compensation practices. In these organizations, pay transparency has effectively eliminated discriminatory pay practices, fostering fairer and more equitable workplaces. Expanding this approach statewide could drive meaningful change, helping to create a more inclusive and just labor market for all New Yorkers.

## **Jolette Reyna Guzman, Alondra Loya-Vazquez, & Makayla Hatch**

Faculty Mentor: Sirisha Naidu

EUREKA! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **What Impacts Does the Motherhood Penalty Have on Society?**

Mothers who return to work after having children and even women that are pregnant are impacted by the Motherhood Penalty. They face discrimination in hiring, they have lower pay, and less opportunities to grow in their jobs. The Mother penalty we will be addressing however, is how mothers are forced to stay at home and care for their children when they get sick without getting paid. Study shows that Utah is the state where the issue is most prevalent. Improving Utah's paid leave regulations is one way to address and help resolve this issue. Some states, such as Colorado, have resources like the FAML program that help both parents distribute caregiving responsibilities. If Utah had a program like Colorado, it would allow the caregiving responsibilities of parenting a child to be evenly distributed by both parents. The state of Utah would benefit significantly in a positive way from this approach, and it would not penalize mothers in the aspect of having the caregiving responsibilities emphasized on the sole parent.



## **Bryley Smith, Paige Parquette, & Madeline Knapp**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **The Lack of Social Security Benefits in Florida**

In the economy, unpaid labor has always been unrecognized. Currently, roughly 2.7 million care workers are not receiving social security benefits, their work equating to about \$40 billion. This is a problem because this can lead to poverty and even homelessness, disproportionately affecting the elderly, women, and people of color. While there are programs, such as Managed Medical Assistance and Long-Term Care Waiver, that are able to help families in situations like this within Florida, they have been found to be inefficient and ineffectual, doing little to prevent these issues, and they do not do much to specifically target and help care workers, making it more difficult for them to retire and receive social security benefits. Our policy expands access to these benefits, specifically for care workers in the state of Florida. This expansion would allow social security benefits to be more accessible, contributing to a more equitable economy preventing many of these workers from falling into poverty while assisting them in achieving a higher and more equitable quality of life.

**Owen Unrein, Aidan Emberton, & Steven Le**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Eliminating the Missouri Wage Gap**

The problem of poverty in Missouri is being significantly worsened by the gender wage gap. The poverty rates in Missouri among women, especially single mothers at 27.8%, are exceptionally high and must be brought down. A way to reduce the widespread impact of this problem is to eliminate the gender wage gap in Missouri. Ensuring that everyone is able to make the same amount of money regardless of demographics and other classifications would be a step towards less poverty in Missouri. To compare, if men receive a sustainable living wage where they are able to care and provide for themselves and their families, women must be able to have access to that type of wage too, which can only happen without a gender wage gap. Raised wages for women also improves social and emotional well-being by making self-reproduction much easier. Eliminating the gender wage gap would be a vital step towards reducing and eliminating the problem of poverty altogether.



## **Madeline Villalobos & Chelsey Boehmer**

Faculty Mentor: Sirisha Naidu

EUReka! Course: GECRT-SS 105 Perspectives on Gender and the Economy

### **Too Many Positions Not Enough Teachers**

Right now, in Missouri there is a severe teacher shortage. There are a large number of open positions for teachers but not enough teachers to fill them. There are many reasons for this, but one factor is teachers not having enough paid sick days. Missouri's teacher annual salary is the 2nd lowest in the country. They also are only given 13 paid sick days with only 3 of those being guaranteed. Teachers get paid a non-livable wage and barely any sick days with a punishment if they go over. Going over the sick days can cause them to lose money from their checks. Not only do they have to worry about themselves being sick but 48% of teachers are also parents, so they have to take sick days for their kids too. Allowing more sick days would bring in more teachers. Our research shows that giving more sick leave reduced the amount of absent teachers and has increased productivity. People get sick and it can't be predicted when, and either way no one should be punished for taking time off for that.

**HISTORY 437WI**  
**Holocaust and Comparative Genocides**

## **Aidan Davis**

Faculty Mentor: Andrew Bergerson

EUReka! Course: HISTORY 437WI Holocaust and Comparative Genocides

### **Grain and Grief: British Policy and the Irish Potato Famine**

During the Irish Potato Famine (1845-1852), a million Irish men, women, and children starved, while Irish ports exported over 3 million live animals and countless bushels of grain to England. British officials adhered to laissez-faire economic principles, treating Irish suffering as an outcome of market forces considered inevitable. Prior scholars have argued that the British viewed the famine as a consequence of Ireland's own weaknesses, suggesting that Irish poverty and dependence on a single crop left the population vulnerable. Many historians, such as James Anthony Froude and others, point out that British leaders saw the famine as a natural outcome of Irish "failings" in both culture and practice. This study examines the causes of the Irish famine in terms of British-Irish relations. More recently, historian W.G. Powderly (2019) argues that British indifference intensified the environmental and social vulnerabilities exposed by the famine, suggesting that the suffering of the Irish was regarded as unavoidable by British officials. Irish historian James S. Donnelly Jr. frames the famine as a key moment for British consolidation of control, implying that the mass suffering and mortality were not just collateral damage but an acceptable outcome within the broader colonial framework. Together, Powderly and Donnelly demonstrate that British inaction during the famine was not just a passive response but a deliberate tactic of colonial dominance. Comparatively, Barbara Harff and Ted Robert Gurr's (1987) concept of "politicide" offers a relevant framework for understanding how British policies during the famine aligned with strategies to suppress perceived threats. Rather than direct intervention, British policymakers adhered to economic non-intervention, weakening Irish autonomy and resistance while indirectly securing British influence. This concept aligns with Gotz Aly and Susanne Heim's (2002) technocrat argument, where they suggest that the Nazi scientists, bankers, doctors, planners, advisors, and other experts viewed genocide as a calculated solution to economic issues in Eastern Europe. Similarly, British officials rationalized non-intervention in

Ireland as an "economic policy" that conveniently served their colonial objectives. Ultimately, the Irish Potato Famine illustrates how governments can exploit crises to entrench authority through strategic neglect, particularly in the nonconsensual colonial relationship between Britain and Ireland. This relationship reveals how the British colonial framework used the famine as an opportunity to solidify control over Ireland, leaving a lasting legacy of political and social domination.

## **Katherine Dickerson**

Faculty Mentor: Andrew Bergerson

EUReka! Course: HISTORY 437WI Holocaust and Comparative Genocides

### **Armenian Genocide**

In 1915, the Turkish Government began a series of atrocities to eradicate Christian communities in the Ottoman Empire. In the case of the Armenian community, the Turkish government acknowledged that the atrocities happened but also denied that the atrocities turned into a genocide. Prior scholars have debated whether the atrocities were an accidental ethnic cleansing or an intentional genocide. Officials in the government claim that continuing to spread this story of genocide not only undermines the legitimate claims of Armenians but also takes away from other peoples who suffered mass atrocities. I focused this research paper on this debate. I compared the case of the Armenian Genocide to other cases of mass atrocities (Meierheinrich, Date). George N. Shirinian wrote “Origin of the Concept of “Ottoman Genocides ” to explain the role of nationalism. Shirinan proposed that the national pride of the Turkish government could not withstand the implications of being involved in genocide. *The Origins of Armenian Genocide Denial and League of Nations’ Humanitarianism 1920-1922* by Keith David Watenpaugh was another research article used. Watenpaugh proposed that victimization was a process used by the Turkish Government to control the narrative of the atrocities committed. *Turkey’s “Apology” and Image Repair on the Centennial of the Armenian Genocide* by Senem B. Çevik is the third article used in this research project. I chose this article because Çevik talks predominantly about image repair. If the aggressors can change the narrative of an event, then the events that occurred can be watered down to be more palatable. I found that all these articles relate to victimization and intent, supported by other articles. The first article that I read was *The Politics of National Homogeneity in Serbia* by Ivo Banac. Banac proposes that the Serbian goal of a “naturally homogenous state” was not just a happy side effect but instead the entire aim of war (Meierheinrich, Banac. P. 139). A second comparative author I found this semester is David Scheffer, who wrote the article *Atrocity Crimes*. Scheffer proposes that the term genocide limits a legal definition and that atrocity crimes should take the place of the verbiage “genocide”. From my comparative research, I conclude that there is an ethical difference between intentional and accidental atrocities. The Turkish government also intentionally committed genocide.

## **Olivia Gebhardt**

Faculty Mentor: Andrew Bergerson

EUReka! Course: HISTORY 437WI Holocaust and Comparative Genocides

### **Long-Term Consequences of the Cultural Revolution**

Psychiatrist Judith Lewis Herman said, “after a traumatic experience, the human system of self-preservation seems to go onto permanent alert, as if the danger might return at any moment.” The Cultural Revolution began in 1966 and ended when Mao died in 1976. The movement was launched to preserve communism in China and anyone who opposed Mao’s political regime faced execution. The Cultural Revolution left its victims with health issues and traumas that still haunt them today. Previous historians have studied the health effects from war and plague on early childhood, however scholar Asadul Islam examines the long-term health effects on utero and early childhood health during a time of political upheaval. Additionally, they have also failed to research the long-term psychological effects of the Cultural Revolution, but Zhiming Cheng focuses on the long-term trauma that survivors of the Cultural Revolution carry. I researched the long-term physical and mental health effects of the Cultural Revolution comparing it to the long-term trauma of survivors of the Guatemalan genocide. First, this paper will review the political violence and threats to which Chinese citizens were subject to during the Cultural Revolution as shown by Wang. Second, this paper will also cover long-term health effects such as, low birth weight, low lung capacity, high blood pressure and stunted growth as shown by Islam. Lastly, my paper will review the mistrust that Chinese citizens now hold in their government and how their perspectives have changed overtime due to the Cultural Revolution. I will apply historian Linda Green’s theory of how victims of political violence who experienced trauma should have a community and space to talk about their experiences with. In addition, I will apply historians Barbara Huff’s and Ted Gurr’s definition of politicide as a more relevant term than genocide to describe the Cultural Revolution. In the long-term, these mass atrocities caused by political violence from the Cultural Revolution and of the Guatemalan genocide created lasting trauma for the victims that are often not discussed or known about, but they are incredibly vital in understanding the violence both historical events caused.

## **Rebecca Hartman**

Faculty Mentor: Andrew Bergerson

EUReka! Course: HISTORY 437WI Holocaust and Comparative Genocides

### **Rounded Off to Zero: Sexual Assault of Women in Genocide**

In her 1962 poem, “Starvation Near Camp Jaslo,” Polish Holocaust survivor Wislawa Szymborska wrote: “History rounds off skeletons to zero. A thousand and one is still only a thousand.” Between 1941 and 1945, two million Jewish women were killed in the Holocaust, but the number of women who were sexually assaulted during the genocide is often rounded to zero. Though there are numerous accounts of Nazis, and even some Jewish men, committing sexual assault against Jewish women, prior Holocaust scholars shied away from the topic. These researchers falsely believed that the Nazi policies against *Rassenschande*, or “race defilement,” protected Jewish women from sexual assault. Even Holocaust survivor Primo Levi minimized the harm Nazis committed against Jewish women, despite ample evidence to the contrary (Sinnreich, 113). Using a hermeneutical approach, this paper will research how Jewish women were sexually violated by German Nazis and even Jewish men during the Holocaust. It will also show that they were further harmed by their communities, who unjustly labeled them as collaborators. By comparing the attacks on Jewish women during the Holocaust to those of the Rwandan women in the genocide of 1994, this paper will show that sexual violence is both a tool and a feature of genocide. This paper will review articles by Jewish historians Katarynza Person (2015), Helene Sinnreich (2008), and Nomi Levenkron (2010). Through witness and survivor testimony, legal documents, and memoirs, their research shows that the Nazis routinely used sexual abuse against Jewish women to destroy the cultural, moral, and social foundations of their community. In his article, “Genocide as Transgression,” historian Dan Stone wrote that war leads to a “collective effervescence,” which creates an excitable sense of community among perpetrators of genocide (Meierhenrich, 2014: 233-236). Using Stone’s theory, this paper will show that genocides create a frenzy that leads ordinary people to commit sexual violence against women. This paper will also use the work of feminist scholar Catherine MacKinnon, who argued in her article “Defining Rape Internationally” that legal and social communities view rape victims differently depending on whether the attacks were the result of non-consent or coercion (Meierhenrich, 2014: 334-337). Applying MacKinnon’s theory, this paper will show that sexual abuse was a tool of coercion against women in both the Holocaust and Rwanda. This work will bear witness to the experiences of women during genocide and prevent their numbers from being rounded to zero.

## Faith Livingston

Faculty Mentor: Andrew Bergerson

EUReka! Course: HISTORY 437WI Holocaust and Comparative Genocides

### Crusader Violence

In the words of Robert the Monk: “The road was strewn with the bodies of the dying; the air was full of groaning voices; the earth, soaked with the blood of the dying” (Asbridge, 24). In the period of the Christian Crusaders, they inflicted waves of trauma upon Muslim and Jewish communities. The First Crusade, beginning in 1095, centered around religious and cultural dominance by the Christian Crusaders to reclaim control from the Muslims. After the capture of Jerusalem groups like the Muslims and Jews experienced extreme violence from the Crusaders. Scholars like Steven Pinker have characterized the Crusades as a form of genocide, concluding that these medieval conflicts were “equivalent to the Nazis’ genocide of the Jews.” At the same time, Professor in Literature like Peter Hulme examine the psychological and social influences on the Crusaders and how these circumstances triggered the violence they inflicted on their victims. The primary debate among historians concerning the First Crusade is the extent to which Crusaders were violent. Historian Christian Gerlach, in “Extremely Violent Societies,” urges researchers within genocide studies to view mass murder through an alternative lens by understanding certain societies as “extremely violent societies.” Through comparative studies, this paper will analyze the role of religion in violence, drawing on Gerlach’s work, Jay Rubenstein’s “Crusaders and Cannibalism,” and Thomas Asbridge’s “An Experiment in Extremity: The Portrayal of Violence in Robert the Monk’s Narrative of the First Crusade,” to explore the nature of Crusader violence within the context of genocide. Two theories, “Mass Murder Technologies” by Jacques Semelin and “Extremely Violent Societies” by Gerlach, provide a framework for comparing the First Crusade to other genocidal cases, such as the Holocaust. Gerlach’s article argues that civilians are more likely to engage in violence when placed within violent societies. Semelin, on the other hand, shows that “methods of killing are human acts, and they reflect a country’s economic and technical development.” Semelin would argue that the violence of the First Crusade reflects the Crusaders’ available resources and cultural influences on violence. Combining these sources allows historians to draw parallels between the First Crusade and the Holocaust, exploring violent tendencies in medieval times and the evidence suggesting that these genocidal cases were fueled by religious and social control.

#### Works Cited

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# **ARTS & HUMANITIES**



## **Maci Branch**

Faculty Mentor: Jane Greer

Academic Unit/Department: English

### **Sandahl Bergman's Body: A Rhetoric of Perseverance in Show Business**

Actress Sandahl Bergman says in an interview with the Star covering a seminar she gave at Stamford's Comedy House, "I got my equity card dancing in the chorus at Starlight Theater. I was being paid a professional salary at 14. When I was 17 I left Kansas City for Los Angeles and was fortunate enough to start working immediately." This work included moving to New York City and dancing on Broadway which saw the beginning of her film career when she was cast as a dancer by Bob Fosse (after numerous collaborations on stage) in his pivotal masterpiece "All That Jazz" (1979). While filming in Los Angeles the Olivia Newton John and Gene Kelly vehicle "Xanadu," (1980) Bergman was evicted from her New York apartment for defying a subletting clause in her rental contract, and thus her career acting in Hollywood movies was born of necessity and not ambition. "

This led to her getting her most famous role of Valeria in John Milius's "Conan the Barbarian" (1982) for which she won a Golden Globe, and Saturn Award. This led to Bergman being popular enough to merit starring in her own work out video. Through her exercise, she persuades her audience that they could look the way she does, if they just follow along. This assumes that all bodies are equal, and that appearance is an indicator of merit which is deeply problematic and sexist.

This is where a careful analysis of the rhetoric of show business becomes imperative. It is a grievous mistake to conclude Sandahl Bergman is complicit in the patriarchy because she worked on a video where she quipped "those love handles are anything but lovable" even if there retains a degree of truth that this fatphobia is an instrument of problematic cultural standards. In Bergman's own words "in this business you encounter a lot more noes than yesses, and usually it has nothing to do with your talent. You've got a director, a client, and an ad agency all debating your worth, and often their choices are based on factors totally beyond your control." This fact about the nature of show business creates a performance economy of desperation, and Bergman's success in this arena shows a rhetoric of perseverance.

# **BEHAVIORAL & SOCIAL SCIENCES**

**Kate McKown**

Faculty Mentor: Westley Youngren

Academic Unit/Department: School of Education, Social Work, and Psychological Sciences

## **Insomnia and Nightmares Predicted by Adverse Experiences in Childhood**

**Introduction:** Difficult childhood experiences are very common and can affect our health and well-being in adulthood. Adverse childhood experiences (ACEs) can be defined as potentially traumatic events that occur in childhood, such as experiencing abuse, witnessing violence, or experiencing neglect. Insomnia can be defined as difficulty falling and/or staying asleep, and nightmares are frightening or unpleasant dreams that result in a sudden awakening. Both result in overall poor sleep quality, especially in chronic sufferers. Emerging research has begun to examine the relationships between ACEs and adulthood sleeping disorders. This is important because sleep disturbances like nightmares have been linked to outcomes such as death by suicide and substance abuse disorders. The current study sought to expand our understanding of the effects of ACEs in adulthood by examining the relationships between ACEs, insomnia, and nightmares.

**Methods:** N = 132 participants completed a survey that included measures of Adverse Childhood Experiences (Adverse Childhood Experiences Questionnaire, ACE), Insomnia (Insomnia Severity Index, ISI), and Nightmares (Trauma-Related Nightmare Survey; TRNS). All participants were female and at least 18 years old. A bivariate linear regression was used to examine how ACEs predict insomnia symptoms, and a bivariate logistical experience was used to examine if ACEs predicted experiencing frequent nightmares.

**Results:** Bivariate linear regression revealed that ACEs significantly predicted insomnia symptoms ( $b = 0.83$ ,  $p < 0.01$ ). Bivariate logistical regressions also revealed that ACEs significantly predicted nightmares ( $b = 0.37$ ,  $p < 0.05$ ).

**Conclusion:** Our results revealed that adulthood trauma-related nightmares and insomnia are both predicted by adverse childhood experiences. These results are meaningful because they provide further insight into the underlying mechanisms that may cause sleep difficulties. Given the established relationship between ACEs and insomnia and nightmares, future research should aim to examine sleep quality in children currently experiencing adverse childhood events, and how disrupted sleep during these developmental periods could impact health related outcomes.

**Authors:** McKown, K. L., Balderas, J. C., & Youngren, W. A.

**Iyanna Moss, Adelin Baynum, & Laine Ross**

Faculty Mentor: Westley Youngren

Academic Unit/Department: Psychology

## **Insomnia & Nightmares: Effects on Suicide**

**Introduction:** Previous research has separately shown that insomnia and trauma-related nightmares are related to suicide. However, the literature currently disagrees as to which is the true predictor of suicide, with some researchers suggesting that the portion of variance in nightmares is explained by symptoms of insomnia. Thus, we sought to further explore this relationship by examining the effects of nightmares and insomnia on suicide in a model that accounted for each variables unique influence.

**Methods:**  $N = 117$  participants completed questionnaires including self-reported insomnia total scores (measured via the Insomnia Symptom Index), frequency of trauma related nightmares occurring monthly (measured via the Trauma-Related Nightmare Survey), and cognitions related suicide (measured via the Brief Suicide Cognition Scale). A multiple linear regression was used to examine the effects of nightmares and insomnia on suicide, while controlling for each variables unique influence.

**Results:** Results of our regression analyses indicated that the overall model was significant ( $t = 7.61, p < 0.001$ ). Within this model, we found that frequently experiencing trauma-related nightmares significantly predicted suicide cognitions ( $\beta=5.17, p < .05$ ), as did insomnia symptoms ( $\beta=0.64, p < .001$ ).

**Conclusion:** Increases in suicide cognitions was predicted by both trauma-related nightmares and insomnia (while controlling for each variable's unique influence). These results lend evidence to the idea that both nightmares and insomnia independently impact suicide, and that nightmares are not just an effect of insomnia. This is clinically relevant as it suggests two unique variables (insomnia & suicide) that could be targeted with interventions, with the overall goal of reducing the risk of suicide.

**Ainsley Pickering, Bailee Ehlers, Abigail Swanson, & Alec Roe**

Faculty Mentor: Westley Youngren

Academic Unit/Department: School of Education, Social Work, and Psychological Sciences

## **Impact of Dream Recall on Perceived Stress**

**Introduction:** Dream recall is the ability to remember and describe the content of dreams that occur during sleep (Schredl et al., 2022). Current research has begun to suggest that the relationship between dream recall, emotional processing, and stress is complicated and multifaceted. Past research has suggested that dreaming may be a protective factor for aspects of emotional regulation, such as stress. Thus, our study aimed to understand how recalling dreams impacted subjective stress levels.

**Methods:**  $N = 117$  participants completed an online survey that included the Cohen Perceived Stress Scale (PSS) and the Manheim Dream Questionnaire (MADRE), which included an item measuring dream recall frequency. The average age for participants was  $M = 21.48$  ( $SD = 3.54$ ), and a majority of participants were female (67%,  $n = 80$ ). A bivariate linear regression was used to examine how dream recall predicted perceived stress levels.

**Results:** Our overall model was significant ( $t = 12.727$ ,  $p < 0.01$ ), where being less likely to recall dreams was predictive of increased levels of perceived stress ( $\beta = 0.82$ ,  $p < 0.05$ ). Our model explained 3.9% of the variance in perceived stress ( $R^2 = 0.039$ ,  $F(1,116) = 4.70$ ,  $p < 0.05$ ).

**Conclusion:** Overall, our results demonstrated that being less likely to remember your dreams was predictive of increased stress levels. Research has shown that emotional processing during dreams is critical in regulating variables such as daily stress. Thus, a reduction in dream recall may indicate disrupted nocturnal emotional regulation. However, dream recall is also associated with increased sleep duration, and poor sleep duration is a known predictor of perceived stress. Future research is needed to determine the exact relationship between dream recall, stress, and sleep duration.

**Authors:** Pickering, A.L., Ehlers, B.E., Swanson, A.R., Roe, A.I., Angle, E.M., Soligo, S.R., & Youngren, W.A.

## **Theo Raitzer**

Faculty Mentor: Mathew Forstater

Academic Unit/Department: Economics

### **Interdisciplinary Support for Fiscal Resurgence**

Recent economic scholarship, mainly that of Modern Monetary Theory (MMT), has argued that fiscal policy, or government spending, should be the main way that the government attempts to control the state of the macroeconomy. These arguments usually are presented in economic terms, often discussing policy effects on financial balances or employment. MMT literature also promotes the idea of Chartalism, which says that the concept of money itself is created by the government, and that governments must engage in fiscal policy by spending before they tax. By doing so, it critiques the logic that government spending can have problematic impacts on the private sector. New research in other fields of humanities, including books written on historical states, aesthetics, the sociology of money, and the care economy, makes arguments similar to those of MMT. My project compares the arguments presented in “core” MMT scholarship, which is centered around economics, to that new humanities scholarship. I argue that this new research, which brings out the idea of money as an organizing force, shows another method of arriving at similar conclusions as previous MMT work. To do this, I compare the qualitative discussions presented in fields outside of economics with the quantitative tools used by MMT, such as the sectoral financial balances map and the concept of inverse causation in the quantity theory of money. I then conclude by thinking about what this interdisciplinary research advocates as the role for government spending in the future, and how it can not only stabilize the macroeconomy, but can be used to better society.

## **Krystal Towne**

Faculty Mentor: Kelsey Gardiner

Academic Unit/Department: School of Nursing and Health Studies

Funding Acknowledgements: Health Forward Foundation

### **Healing Through Nutrition: The Development of a Food is Medicine Program in the Kansas City Metro**

Food and nutrition insecurity is an international issue disproportionately impacting low-income and minority groups. Low-income communities are less likely to have access to adequate food, proper nutrition education, healthcare, and are more likely to experience chronic illnesses. Considering the national attention being given to this topic, there is a corresponding influx of food is medicine (FiM) interventions to address it. This presentation will outline key program components of a FiM intervention engaging multiple community partners. Programming barriers and facilitators will be described from the perspectives of trained nutritional coaches. The FoodFARMacy initiative is a 12-month food is medicine intervention that includes bi-weekly nutrition coaching and a bag of fresh produce for food insecure adults with an existing chronic disease. Each session, participants engage in one-on-one nutrition education and goal setting with a trained coach. Participant data is collected at baseline (1m), mid- (6m), and post-intervention (12m), and includes both self-reported (e.g. food security) and biometric (e.g. BMi, blood pressure) measures. Coaches involved in the intervention are recruited from partner community organizations, trained, and then deliver the intervention to their existing clients/patients. Surveys were conducted among the coaches at the mid-point of the intervention (6m) to identify the effectiveness of the training, their perspective of the program's usefulness, and barriers to implementation. The survey instrument used a Likert scale to measure agreeableness (Strongly agree to strongly disagree) of a variety of statements about the program development and implementation. As of October, 2024, five partner organizations and 32 partner coaches have been recruited and trained through FoodFARMacy and two of the partner sites have reached the 6-month point in the intervention. Eleven coaches have completed the survey with 100% indicating the training and onboarding process prepared them to be a coach in the program and 100% indicating the nutrition education materials provided were clear and easy to understand. Nearly all coaches reported they were satisfied with the quality (98%) and quantity (100%) of produce being provided to clients. When asked about facilitators and barriers, 81.8% identified patient/client availability and transportation as the main barrier, while facilitators include the usefulness of the health education materials (36%) and providing a produce incentive (8%). As food is medicine interventions emerge as a promising strategy to address food as a social determinant of health, it is important to identify key program components, facilitators, and barriers to transfer interventions into practice. This presentation outlines these key elements of implementation from the perspective of key stakeholders to provide lessons learned for both researchers and practitioners.

# **BIOLOGICAL & LIFE SCIENCES**



## **Mercedes Boateng**

Faculty Mentor: Sarah Patel

Academic Unit/Department: School of Nursing and Health Studies

Funding Acknowledgements: UMKC Faculty Funding for Excellence, S. Patel

### **Impact of Pelvic Congestion Syndrome Pain on Women's Quality of Life**

**Purpose:** Pelvic congestion syndrome is a condition causing persistent pelvic pain in women. This is due to varicose veins in the pelvic region, specifically related to uterine and ovarian veins. Pelvic congestion syndrome significantly alters women's quality of life such as emotional stress, discomfort, reduced mobility, and even interferes with daily activities. The most common symptoms are pelvic pain, pain after long periods of sitting and standing, and pain during or after sex. However, many women are undiagnosed due to a lack of knowledge and awareness of pelvic congestion syndrome among healthcare professionals. While quality of life is affected by pelvic congestion syndrome pain and its related symptoms, few studies assess the women's experience with pelvic congestion syndrome and its impact on their quality of life. The purpose of this study is to gain a deeper understanding of how pelvic congestion syndrome affects the physical, mental, and overall well-being of women in order to improve awareness and to create future interventions for diagnosis and treatment.

**Methods:** Nine women with chronic pelvic pain after treatment for pelvic congestion syndrome were interviewed. The interview guide used open-ended responses in order to acquire a deeper insight into women's personal experience with pelvic congestion syndrome and impacts on their quality of life. After the interviews were conducted, the audio recordings were transcribed into word documents and were coded manually. Through coding, we identified recurring themes and patterns.

**Results:** The themes and patterns identified discussed the physical, emotional, and social impact of pelvic congestion syndrome. Physically, women were *suffering from a variety of excruciating pain sensations*. Emotionally, women felt like *a crutch on their family due to a loss of independence*. Socially, women felt as if *everybody has to put their life on pause* because of their pelvic congestion syndrome diagnosis.

**Conclusion:** Pelvic congestion syndrome and the symptoms experienced have a negative impact on women's quality of life with physical limitations, sexual dysfunction, and emotional stress. Women with pelvic congestion syndrome feel misunderstood by healthcare providers and their family. There is a need for education to increase awareness, improve diagnosis, and ensure affordable coverage for women suffering with pelvic congestion syndrome pain.

# **PHYSICAL & NATURAL SCIENCES**

## **Ethan Boothe, Grace Church, & Karissa Jenesse**

Faculty Mentor: Caroline Davies

Academic Unit/Department: Earth & Environmental Sciences

### **Loess Depositional Processes Through Geochemical, Mineralogical, and Grain Morphology Analyses in Kansas City, MO, USA**

Loess is a very fine glacial sediment created via aeolian processes. In the Midwest, the most recent loess was deposited during the last glacial maximum of which Missouri was at the very edge. The research on Missouri loess deposits is not very extensive. We have sampled an exposed loess outcrop in Kansas City, Missouri, off I-435 and Highway 210 West. The samples are pulled from 5 meters of the upper bench, referred to as bench B. Our group is analyzing meter 2 to meter 3 in 5-centimeter increments. The samples will be put through various tests to determine the composition and structure of the loess to gain insight into the process of deposition. All samples were measured in ten-gram increments. The X-ray diffraction (XRD) allows for constructive interference between red and green light waves to determine the mineral composition of the loess. In combination with the XRD the scanning electron microscope (SEM) creates a clearer visual of the particle shapes in the sample by producing 2D microscopic imagery. Loss on Ignition (LOI) involves using a furnace to burn off water and organics to determine the ratio of weight between the aforementioned molecules and the sediment. Finally, grain size distribution will be determined by eliminating the calcium carbonate via 10% hydrochloric acid (HCl) and then placed in a centrifuge to separate sand, silt, and clay sized particles. Analyzing the grain size gives a relative time of deposition and helps determine if any abnormalities are present.

**Danny Del Castillo, Makenzie Dobbins, Madison Hillbrand, & Alex Norvell**

Faculty Mentor: Caroline Davies

Academic Unit/Department: Earth & Environmental Sciences

**Characterizing Aeolian Loess on AR210 Highway, Kansas City, MO,  
0.0 – 1.0 m**

Loess is one of the most prominent types of landscape-forming deposits in northern Missouri. Such glacial sediments were likely deposited in Missouri by the advance and retreat of the southern-most margin of the Laurentide Ice Sheet during the Late Pleistocene. Sediment samples were taken at five centimeter intervals from a five-meter section of exposed loess along Armour Road in Kansas City, Missouri. Processing via Loss-on-Ignition (LOI), samples from the first meter (0.00-1.00m) revealed an average of 5.5 percent moisture by weight. Organic content increased with elevation from approximately 1 percent by weight at 0.00m to 2 percent, with the exception of 4.3 percent in the final 5 centimeters of the first meter. We prepared samples for laser particle size analysis by first removing carbonates, metal salts, and organics through chemical digestion, then disaggregating with  $\text{NaPO}_3$  and ultrasonic vibration. Grain morphometry via laser particle analysis and mineral composition via X-ray powder diffraction (XRD) are in progress to further analyze the mineral makeup of the sediment and any secondary precipitation due to groundwater flow. By analyzing variations in grain size and chemical makeup, we can deduce information about formation processes, intensity of weathering and climatic conditions at the time of sediment deposition, which gives us important information about paleoclimatic conditions of the Kansas City region during an Ice Age.

**Shelby Huber, Tabitha Taylor-Post, Darius Uche, & Aaron Upton**

Faculty Mentor: Caroline Davies

Academic Unit/Department: Earth & Environmental Sciences

## **Characterization of Loess Deposits through Geochemical, Mineralogical, and Grain Morphology Analyses in Kansas City, MO, USA**

Loess is one of the most common surface deposits in the Midwest United States. In this study, loess is collected and analyzed from an exposed section along highway 210 in North Kansas City, MO. These aeolian deposits are likely derived from wind along the front of the Laurentide ice sheet and may be associated with the Peoria Loess, between approximately 25,000 cal yr B.P. and 13,000 cal yr B.P. (Muhs et al., 2008). The exposed section is a total of 21 meters in two benches. Due to exposure to eroding forces, paleosols are not visible to the naked eye at the study site, but geochemical analyses may identify paleosols within the section. Paleosols indicate climatic changes during loess deposition. This study focuses on a 1-meter segment, 3.00 m to 4.00 m from the lower 5 meters of the upper bench, sampled every 5 cm. Sample colors ranged between very pale brown and pale brown 10YR using the Munsell color system. Samples of 10 grams each were weighed out for the following analytical analyses: Loss-On-Ignition (LOI), X-Ray Diffraction (XRD), a Laser Particle Size Analyzer, and Dynamic Particle Imager. Samples will also be prepared for Scanning Electron Microscopy (SEM) and external Inductively Coupled Mass Spectrometry (ICPMS) analysis. Data has been gathered from Laser Particle Size Analysis at the time of writing. Data was graphed as percent of sample and grain sizes on a log base 10 scale. Samples follow a trend very closely—graphs are negatively skewed with a tail that begins to widen at 10  $\mu\text{m}$  to 20  $\mu\text{m}$ . From 30  $\mu\text{m}$  to 40  $\mu\text{m}$  are the most frequent grain sizes. The maximum grain sizes found are around 1200  $\mu\text{m}$ , these make up a small portion of the samples. Some samples are anomalous, possessing a fatter left tail compared to most other samples. This could indicate the presence of a paleosol—LOI will reveal the presence of organic matter in samples later on. These processes aim to characterize the particle size and shape, mineralogical makeup, and geochemical composition throughout this meter section. Synthesizing the findings of these analyses will yield a story of the depositional environment, further deepen academic knowledge of Missouri loess characteristics, and provide context for integrating Missouri loess into the broader Midwest loess sequence.

## **Kenzie Keightley, CJ Kreeger, & Preston Newman-Snow**

Faculty Mentor: Caroline Davies

Academic Unit/Department: Earth & Environmental Sciences

### **Characterizing Aeolian Loess Properties and Weathering on AR210 Highway, Kansas City, MO, 4.0-5.0m**

Loess, composed of fine, wind-blown silt deposits, has created thick, fertile soil layers across much of the Midwest, primarily originating from glacial outwash plains and transported by winds during the last Ice Age. These deposits have formed distinctive landforms, such as loess hills, which are vital to studying soil formation, erosion processes, and sediment transport. Known for their rich nutrient content and excellent moisture retention, loess soils are highly productive for agriculture and play a key role in understanding both the geological history and landscape evolution of the region. In this study, multiple analytical techniques are employed to investigate loess properties. Loss-on-Ignition (LOI) analysis quantified organic and carbonate content by measuring weight loss after sequential heating, providing essential insights into soil moisture retention and organic content. X-Ray Diffraction (XRD) analysis identifies mineral phases through the diffraction patterns produced by X-rays interacting with the crystalline structures in the samples, allowing for a more complete understanding of loess's geological properties. Additionally, Scanning Electron Microscopy (SEM) analysis is currently underway to examine particle morphology and surface characteristics, enhancing our understanding of depositional processes and weathering patterns affecting loess stability. Laser Particle Size analysis is being performed concurrently to determine particle size distribution, which is crucial for interpreting transport mechanisms, energy environment, sediment sorting, and classifying loess texture. Together, these methodologies provide a comprehensive view of loess's physical properties, enriching broader research into soil erosion, sedimentation, and landscape evolution of the north Kansas City region.

**Mary Klene, Harrison Kurz, Cooper Lennard, & Yelitza Perez**

Faculty Mentor: Caroline Davies

Academic Unit/Department: Earth & Environmental Sciences

**Sediment Composition and Properties of Glacial Loess on AR210 Highway,  
Kansas City, MO, 1.0 – 2.0 m**

Loess, a clay-like sediment commonly found along river basins, is primarily deposited by winds in glacial regions or areas influenced by glacial flows. Evidence of Quaternary climate change, loess deposits are one of the only sediments which are deposited directly from the atmosphere. D. R. Muhs (2007) with U.S. Geological Survey defines them as “geologic deposit that contains a record of atmospheric circulation and can be used to reconstruct synoptic-scale paleoclimatology”, thus contributing to the climate reconstruction. This study aims to characterize the composition and properties of loess using various analytical techniques. Scanning Electron Microscopy with Energy Dispersive Spectroscopy (SEM/EDS) mapped the elemental distribution within the sediment. X-Ray Diffraction (XRD) analyzed the phase composition, mineral structure, and orientation, providing insights into the depositional environment. Loss-on-Ignition (LOI) determined the percentages of moisture, organic matter (OM), and mineral components, revealing the organic content and moisture retention of the loess. Additionally, particle size analysis assessed size distribution and abundance, aiding in the interpretation of transport processes and energy environments. Although Inductively Coupled Plasma Mass Spectrometry (ICP-MS) will be conducted to quantify major and trace elements—enhancing our understanding of the geochemical processes involved—its data will not be included in this report. Collectively, these techniques provide a comprehensive understanding of loess, contributing to the reconstruction of past environmental conditions and sedimentary dynamics in glacial and post-glacial landscapes.

## FALL 2024 SYMPOSIUM OF UNDERGRADUATE RESEARCH & CREATIVE SCHOLARSHIP

Alphabetic List of Undergraduate Researchers, Scholars, & Artists

Wednesday, November 20, 2024 & Thursday, November 21, 2024

<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Aguilar Garcia, Omar	Poster 9	Thu., 10:00 a.m. - 11:15 a.m.
Albasri, Baneen	Poster 10	Thu., 10:00 a.m. - 11:15 a.m.
Ali, Zak	Poster 7	Thu., 10:00 a.m. - 11:15 a.m.
Allen, Ajay	Poster 9	Thu., 10:00 a.m. - 11:15 a.m.
Almaguer, Isabella	Poster 24	Thu., 10:00 a.m. - 11:15 a.m.
Alon, Mik	Poster 1	Thu., 11:30 a.m. - 12:45 p.m.
Alvey, Analisa	Poster 5	Thu., 11:30 a.m. - 12:45 p.m.
Anderson, Alana	Poster 15	Wed., 4:00 p.m. - 5:15 p.m.
Bailey, Nick	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Balino, Ben	Poster 8	Thu., 11:30 a.m. - 12:45 p.m.
Ballin, Luke	Poster 26	Thu., 10:00 a.m. - 11:15 a.m.
Ballin, Luke	Poster 11	Wed., 4:00 p.m. - 5:15 p.m.
Barraza, Joel	Poster 9	Thu., 10:00 a.m. - 11:15 a.m.
Baynum, Adelin	Poster 20	Thu., 11:30 a.m. - 12:45 p.m.
Bestgen, Delanie	Poster 20	Wed., 4:00 p.m. - 5:15 p.m.
Bhakta, Inara	Poster 20	Thu., 10:00 a.m. - 11:15 a.m.
Boateng, Mercedes	Poster 10	Thu., 1:00 p.m. - 2:15 p.m.
Bober, Hanna	Poster 16	Thu., 10:00 a.m. - 11:15 a.m.
Boehmer, Chelsey	Poster 25	Wed., 4:00 p.m. - 5:15 p.m.
Boothe, Ethan	Poster 23	Thu., 1:00 p.m. - 2:15 p.m.
Botello, Melisa	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Branch, Maci	Poster 29	Thu., 1:00 p.m. - 2:15 p.m.
Briscoe, Ian	Poster 31	Thu., 10:00 a.m. - 11:15 a.m.
Brown, Molly	Poster 21	Thu., 11:30 a.m. - 12:45 p.m.
Cann, Ta'Mya	Poster 27	Thu., 10:00 a.m. - 11:15 a.m.
Cartwright, Sy	Poster 11	Thu., 11:30 a.m. - 12:45 p.m.



<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Castillo, Brandon	Poster 31	Thu., 10:00 a.m. - 11:15 a.m.
Cavin, Quinn	Poster 29	Thu., 10:00 a.m. - 11:15 a.m.
Chaudhary, Muhammad	Poster 6	Thu., 1:00 p.m. - 2:15 p.m.
Chavez, Madelyn	Poster 24	Thu., 11:30 a.m. - 12:45 p.m.
Childers, Audrey	Poster 4	Thu., 10:00 a.m. - 11:15 a.m.
Church, Grace	Poster 23	Thu., 1:00 p.m. - 2:15 p.m.
Clippard, William	Poster 7	Thu., 10:00 a.m. - 11:15 a.m.
Closser, Satori	Poster 18	Thu., 10:00 a.m. - 11:15 a.m.
Cobb, Meilan	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Cole, Morgan	Poster 17	Thu., 11:30 a.m. - 12:45 p.m.
Comelli, Gianna	Poster 25	Thu., 11:30 a.m. - 12:45 p.m.
Contreras, Edgar	Poster 4	Thu., 1:00 p.m. - 2:15 p.m.
Damian, Emily	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Davis, Aidan	Poster 22	Wed., 4:00 p.m. - 5:15 p.m.
Dawn, Kristyl	Poster 6	Wed., 4:00 p.m. - 5:15 p.m.
Dehghani, Sheyda	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Del Castillo, Danny	Poster 7	Thu., 1:00 p.m. - 2:15 p.m.
Deol, Arjan	Poster 20	Thu., 10:00 a.m. - 11:15 a.m.
Dickerson, Katherine	Poster 8	Wed., 4:00 p.m. - 5:15 p.m.
Dobbins, Makenzie	Poster 7	Thu., 1:00 p.m. - 2:15 p.m.
Eatman, Ja'Niya	Poster 5	Thu., 10:00 a.m. - 11:15 a.m.
Ehlers, Bailee	Poster 6	Thu., 11:30 a.m. - 12:45 p.m.
Eichler, Antonia	Poster 9	Thu., 11:30 a.m. - 12:45 p.m.
Emberton, Aidan	Poster 13	Wed., 4:00 p.m. - 5:15 p.m.
Falah, Areej	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Fernandez, David	Poster 14	Thu., 10:00 a.m. - 11:15 a.m.
Fierro, Mariana	Poster 2	Thu., 10:00 a.m. - 11:15 a.m.
Folsom, Maxwell	Poster 17	Thu., 10:00 a.m. - 11:15 a.m.
Galeas, Karina	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Garciano, Angelika	Poster 3	Thu., 11:30 a.m. - 12:45 p.m.
Gebhardt, Olivia	Poster 2	Wed., 4:00 p.m. - 5:15 p.m.

<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Gladieux, Emilie	Poster 19	Thu., 10:00 a.m. - 11:15 a.m.
Growney, Blake	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Guhr, Jillian	Poster 25	Thu., 1:00 p.m. - 2:15 p.m.
Guillen Macias, Arjelia	Poster 1	Thu., 10:00 a.m. - 11:15 a.m.
Guillen Macias, Vanessa	Poster 1	Thu., 10:00 a.m. - 11:15 a.m.
Gwynn, River	Poster 11	Thu., 10:00 a.m. - 11:15 a.m.
Han, YoungHoon	Poster 15	Thu., 11:30 a.m. - 12:45 p.m.
Hanon, Sara	Poster 20	Thu., 10:00 a.m. - 11:15 a.m.
Harrison, Maiya	Poster 9	Wed., 4:00 p.m. - 5:15 p.m.
Hartman, Rebecca	Poster 14	Wed., 4:00 p.m. - 5:15 p.m.
Hatch, Makayla	Poster 26	Wed., 4:00 p.m. - 5:15 p.m.
Head, Jalyssa	Poster 10	Thu., 10:00 a.m. - 11:15 a.m.
Hernandez, Estrella	Poster 14	Thu., 10:00 a.m. - 11:15 a.m.
Hernandez, Luis	Poster 31	Thu., 10:00 a.m. - 11:15 a.m.
Hillbrand, Madison	Poster 7	Thu., 1:00 p.m. - 2:15 p.m.
Huber, Shelby	Poster 21	Thu., 1:00 p.m. - 2:15 p.m.
Huggins, Mateo	Poster 11	Thu., 10:00 a.m. - 11:15 a.m.
Hussein, Sahra	Poster 18	Thu., 10:00 a.m. - 11:15 a.m.
Jackson, Maria	Poster 11	Wed., 4:00 p.m. - 5:15 p.m.
Jackson, Maria	Poster 26	Thu., 10:00 a.m. - 11:15 a.m.
Jeffery, Maribella	Poster 1	Wed., 4:00 p.m. - 5:15 p.m.
Jenesse, Karissa	Poster 23	Thu., 1:00 p.m. - 2:15 p.m.
Johnson, Erin	Poster 4	Wed., 4:00 p.m. - 5:15 p.m.
Johnson, Kenneth	Poster 4	Thu., 10:00 a.m. - 11:15 a.m.
Jones, Ginger	Poster 24	Thu., 10:00 a.m. - 11:15 a.m.
Kassa, Kalkiedan	Poster 30	Thu., 10:00 a.m. - 11:15 a.m.
Kaur, Avleen	Poster 27	Thu., 10:00 a.m. - 11:15 a.m.
Keightley, Kenzie	Poster 2	Thu., 1:00 p.m. - 2:15 p.m.
Ketner, Alissa	Poster 24	Thu., 10:00 a.m. - 11:15 a.m.
Klene, Mary	Poster 14	Thu., 1:00 p.m. - 2:15 p.m.
Knapp, Madeline	Poster 18	Wed., 4:00 p.m. - 5:15 p.m.

<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Kreeger, CJ	Poster 2	Thu., 1:00 p.m. - 2:15 p.m.
Kurz, Harrison	Poster 14	Thu., 1:00 p.m. - 2:15 p.m.
Le, Lillian	Poster 1	Wed., 4:00 p.m. - 5:15 p.m.
Le, Steven	Poster 13	Wed., 4:00 p.m. - 5:15 p.m.
Le, Phuong	Poster 18	Thu., 10:00 a.m. - 11:15 a.m.
Lennard, Cooper	Poster 14	Thu., 1:00 p.m. - 2:15 p.m.
Leuthauser, Tyson	Poster 19	Thu., 10:00 a.m. - 11:15 a.m.
Lietzen, Oliver	Poster 17	Thu., 10:00 a.m. - 11:15 a.m.
Livingston, Faith	Poster 28	Wed., 4:00 p.m. - 5:15 p.m.
Loya-Vazquez, Alondra	Poster 26	Wed., 4:00 p.m. - 5:15 p.m.
Maisonnieuve, Ethan	Poster 25	Thu., 10:00 a.m. - 11:15 a.m.
Mallela, Niharika	Poster 9	Thu., 1:00 p.m. - 2:15 p.m.
Markley, Luke	Poster 31	Thu., 10:00 a.m. - 11:15 a.m.
Marshall, Zoey	Poster 27	Thu., 10:00 a.m. - 11:15 a.m.
Marshman, Sophie	Poster 23	Wed., 4:00 p.m. - 5:15 p.m.
Martin, Gabi	Poster 18	Thu., 1:00 p.m. - 2:15 p.m.
Martinez, Sofia	Poster 20	Thu., 10:00 a.m. - 11:15 a.m.
McKown, Kate	Poster 10	Wed., 4:00 p.m. - 5:15 p.m.
Mejia, Victor	Poster 7	Thu., 10:00 a.m. - 11:15 a.m.
Melendez, Seiry	Poster 17	Wed., 4:00 p.m. - 5:15 p.m.
Metcalf, Alexander	Poster 2	Thu., 11:30 a.m. - 12:45 p.m.
Meyer, Charlie	Poster 8	Thu., 10:00 a.m. - 11:15 a.m.
Michael, Celeste	Poster 8	Thu., 10:00 a.m. - 11:15 a.m.
Mohamed, Firahili	Poster 4	Thu., 10:00 a.m. - 11:15 a.m.
Mohammad, Muna	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Moreno-Zarate, Shirley	Poster 5	Thu., 10:00 a.m. - 11:15 a.m.
Moss, Iyanna	Poster 20	Thu., 11:30 a.m. - 12:45 p.m.
Muhammud, Umer	Poster 24	Thu., 1:00 p.m. - 2:15 p.m.
Nelson, Chance	Poster 20	Wed., 4:00 p.m. - 5:15 p.m.
Newman-Snow, Preston	Poster 2	Thu., 1:00 p.m. - 2:15 p.m.
Nguyen, Jim	Poster 7	Thu., 10:00 a.m. - 11:15 a.m.

<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Nguyen, My	Poster 18	Thu., 10:00 a.m. - 11:15 a.m.
Nielsen, Caleb	Poster 4	Wed., 4:00 p.m. - 5:15 p.m.
Nieto-Ceron, Ulises	Poster 17	Wed., 4:00 p.m. - 5:15 p.m.
Norvell, Alex	Poster 7	Thu., 1:00 p.m. - 2:15 p.m.
Ogaz-Flores, Giancarlo	Poster 1	Thu., 10:00 a.m. - 11:15 a.m.
Omorodion, Alexa	Poster 20	Thu., 10:00 a.m. - 11:15 a.m.
Oyona Ibandzo, David	Poster 10	Thu., 10:00 a.m. - 11:15 a.m.
Paredes, Heidi	Poster 27	Thu., 10:00 a.m. - 11:15 a.m.
Park, Sarah	Poster 28	Thu., 11:30 a.m. - 12:45 p.m.
Parquette, Paige	Poster 18	Wed., 4:00 p.m. - 5:15 p.m.
Pattison, Ryan	Poster 16	Thu., 10:00 a.m. - 11:15 a.m.
Pearson, Angelina	Poster 29	Thu., 10:00 a.m. - 11:15 a.m.
Percy, Mason	Poster 16	Thu., 11:30 a.m. - 12:45 p.m.
Perez, Yelitza	Poster 14	Thu., 1:00 p.m. - 2:15 p.m.
Petty, Asia	Poster 6	Wed., 4:00 p.m. - 5:15 p.m.
Pickering, Ainsley	Poster 6	Thu., 11:30 a.m. - 12:45 p.m.
Planker, Bryanna	Poster 24	Thu., 10:00 a.m. - 11:15 a.m.
Pond, Ashton	Poster 12	Thu., 11:30 a.m. - 12:45 p.m.
Pond, Ian	Poster 10	Thu., 10:00 a.m. - 11:15 a.m.
Pursley, Maggie	Poster 19	Thu., 10:00 a.m. - 11:15 a.m.
Raitzer, Theo	Location iX Theatre	Wed., 4:30 p.m.
Ramirez, Maydi	Poster 13	Thu., 1:00 p.m. - 2:15 p.m.
Rashaw, Chyann	Poster 18	Thu., 11:30 a.m. - 12:45 p.m.
Reckamp, Michael	Poster 14	Thu., 10:00 a.m. - 11:15 a.m.
Reyes, Wendy	Poster 29	Thu., 10:00 a.m. - 11:15 a.m.
Reyna Guzman, Jolette	Poster 26	Wed., 4:00 p.m. - 5:15 p.m.
Reynolds, Madaline	Poster 2	Thu., 10:00 a.m. - 11:15 a.m.
Rigoli, Mark	Poster 9	Thu., 10:00 a.m. - 11:15 a.m.
Robinson, De' Vine	Poster 17	Thu., 10:00 a.m. - 11:15 a.m.
Roe, Alec	Poster 6	Thu., 11:30 a.m. - 12:45 p.m.
Ross, Laine	Poster 20	Thu., 11:30 a.m. - 12:45 p.m.

<b>Name</b>	<b>Poster</b>	<b>Presentation Day / Time</b>
Salais, Marlen	Poster 5	Thu., 10:00 a.m. - 11:15 a.m.
Salcido, Janet	Poster 1	Wed., 4:00 p.m. - 5:15 p.m.
Salgado, Ivan	Poster 11	Wed., 4:00 p.m. - 5:15 p.m.
Salgado, Ivan	Poster 26	Thu., 10:00 a.m. - 11:15 a.m.
Sanchez, Stephanie	Poster 29	Thu., 10:00 a.m. - 11:15 a.m.
Saubers, Claire	Poster 23	Wed., 4:00 p.m. - 5:15 p.m.
Scarpelli, Ian	Poster 4	Thu., 10:00 a.m. - 11:15 a.m.
Schisler, Sam	Poster 10	Thu., 10:00 a.m. - 11:15 a.m.
Schwenk, Avari	Poster 30	Thu., 10:00 a.m. - 11:15 a.m.
Shirley, Alexis	Poster 29	Thu., 11:30 a.m. - 12:45 p.m.
Shoemake, Emily	Poster 11	Thu., 1:00 p.m. - 2:15 p.m.
Silva, Anahi	Poster 13	Thu., 10:00 a.m. - 11:15 a.m.
Smera, Alyssa	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Smith, Bryley	Poster 18	Wed., 4:00 p.m. - 5:15 p.m.
Smith, Isaac	Poster 11	Thu., 10:00 a.m. - 11:15 a.m.
Subramaniam, Adithrri	Poster 16	Thu., 10:00 a.m. - 11:15 a.m.
Suleiman, Hameed	Poster 3	Thu., 1:00 p.m. - 2:15 p.m.
Swanson, Abigail	Poster 6	Thu., 11:30 a.m. - 12:45 p.m.
Thai, Alvincent	Poster 29	Thu., 10:00 a.m. - 11:15 a.m.
Thang, Elizabeth	Poster 11	Thu., 10:00 a.m. - 11:15 a.m.
Thomas, Da'Mya	Poster 27	Thu., 10:00 a.m. - 11:15 a.m.
Thompson, Aiden	Poster 1	Thu., 1:00 p.m. - 2:15 p.m.
Thong, Eric	Poster 14	Thu., 11:30 a.m. - 12:45 p.m.
Tolbert, Ethan	Poster 7	Thu., 10:00 a.m. - 11:15 a.m.
Towne, Krystal	Poster 17	Thu., 1:00 p.m. - 2:15 p.m.
Trevino, Georgina	Poster 8	Thu., 10:00 a.m. - 11:15 a.m.
Trozzolo, Pasquale	Poster 19	Thu., 1:00 p.m. - 2:15 p.m.
Trucano, Ella	Poster 27	Thu., 1:00 p.m. - 2:15 p.m.
Tyler-Post, Tabitha	Poster 21	Thu., 1:00 p.m. - 2:15 p.m.
Uche, Darius	Poster 21	Thu., 1:00 p.m. - 2:15 p.m.
Unrein, Owen	Poster 13	Wed., 4:00 p.m. - 5:15 p.m.

<b>Name</b>	<b>Poster / Location</b>	<b>Presentation Day / Time</b>
Upton, Aaron	Poster 21	Thu., 1:00 p.m. - 2:15 p.m.
Valdez, Eulises	Poster 22	Thu., 11:30 a.m. - 12:45 p.m.
Valenzuela Portillo, Dana	Poster 22	Thu., 10:00 a.m. - 11:15 a.m.
Vanden Hull, Michaela	Poster 10	Thu., 11:30 a.m. - 12:45 p.m.
Velasquez Flores, Jovany	Poster 16	Thu., 1:00 p.m. - 2:15 p.m.
Villalobos, Madeline	Poster 25	Wed., 4:00 p.m. - 5:15 p.m.
Wells-Horn, Lakingya	Poster 26	Thu., 11:30 a.m. - 12:45 p.m.
Williams, Ade	Poster 1	Thu., 10:00 a.m. - 11:15 a.m.
Wilson, Santiago	Poster 16	Thu., 10:00 a.m. - 11:15 a.m.
Wilson, Lia	Poster 18	Thu., 10:00 a.m. - 11:15 a.m.
Wilson, Isaac	Poster 25	Thu., 10:00 a.m. - 11:15 a.m.
Wong, Kellie	Poster 2	Thu., 10:00 a.m. - 11:15 a.m.
Wrisinger, Olivia	Poster 11	Thu., 10:00 a.m. - 11:15 a.m.
Wulfert, Sarah	Poster 16	Thu., 10:00 a.m. - 11:15 a.m.
Yakandji, Jessica	Poster 30	Thu., 10:00 a.m. - 11:15 a.m.
Zanatta, Brandon	Poster 25	Thu., 10:00 a.m. - 11:15 a.m.

## ACKNOWLEDGEMENTS

Many thanks to the supporters of undergraduate research and creative scholarship across campus. Today's symposium would not be possible without their willingness to share news and information; offer feedback to students; provide technical and administrative support; volunteer at events; and advocate for students.

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