

STRONG STUDENTS CREATE, EXPLORE, AND LEAD.



UNDERGRADUATE RESEARCH CONFERENCE
ANNUAL ACADEMIC AND LEADERSHIP AWARDS CEREMONY
SPECIAL EVENTS HIGHLIGHTING STUDENTS' ACCOMPLISHMENTS

20TH ANNUAL
CELEBRATING STUDENT ACHIEVEMENT

Program of Events
April 7, 2022

MEREDITH
COLLEGE

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ACKNOWLEDGEMENTS

The commitment and dedication of Meredith students, faculty, and staff make this day of celebrating student achievement possible. Special thanks go to —

Jo Allen, '80, President

Matthew Poslusny, Senior Vice President and Provost

Jean Jackson, '75, Vice President for College Programs

Carolina Perez-Heydrich, Director of Undergraduate Research

Cheryl Jenkins, Director, Office of Student Leadership and Service

Isabella Rossi, Administrative Assistant for Academic Special Programs

Destiny Calvin, Student Assistant, Undergraduate Research Program

The Undergraduate Research Advisory Committee

Department of Marketing and Graphic Designer Marissa McCauley

Copy Services and Printing

Dean Laura Davidson, Jeffrey Waller, and the Reference Staff of Carlyle Campbell Library

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Coordinator Lauren Hickey and Student Technology & Training (STAT) Interns

Meredith Events: William Brown, Kaitlin Toxey, Jim Frick, Ginny Watkins, Chris Droessler, Eric Leary

The faculty mentors who have given concentration, care, and many extra hours to encourage and support today's student presenters and performers.

Day at a Glance

8:30 – 8:45 a.m.	Opening Ceremony <i>A welcoming address will be given by Dr. Jo Allen, along with refreshments and breakfast treats and a brief dance performance</i>	SMB Mall
9 – 11:50 a.m.	Global Music at Meredith	WAI 117 Carswell Hall and Lobby
9 – 10:15 a.m.	Studies on Social Identity https://meredith.zoom.us/j/95512893192	SMB 118
9 – 11:15 a.m.	Studies on College Populations https://meredith.zoom.us/j/99424919430	Ledford 101
9 – 11:15 a.m.	Pandemics: History behind the Headlines https://meredith.zoom.us/j/97855193657	SMB 162
9 – 10:15 a.m.	Politics and Society https://meredith.zoom.us/j/92173724922	Kresge Auditorium
10:20 – 11:45 a.m.	Gender Roles in Literature https://meredith.zoom.us/j/95512893192	SMB 118
10:20 – 11:45 a.m.	Design and Art History https://meredith.zoom.us/j/92173724922	Kresge Auditorium
11:20 – 11:55 a.m.	Chemistry and Biology	SMB 162
11:35 – 11:45 a.m.	Dance 159 Movement Improvisation Performance	SMB Atrium & Mall
12 – 12:15 p.m.	Student Achievement in Leadership Awards Ceremony https://www.youtube.com/channel/UCEZ87JqxTcxW8DhRITcvmg	Online Ceremony
12:15 – 2 p.m.	Senior Spotlights: Celebrating the Next Steps for the Class of 2022	SMB Atrium
12:15 – 2 p.m.	Lunch Break <i>No communal lunch in Belk Dining Hall</i>	
12:15 – 1:15 p.m.	The Colton Review Reveal	Kresge Auditorium
12:15 – 1:15 p.m.	Interior Design Senior Portfolio Exhibition https://www.youtube.com/channel/UCEZ87JqxTcxW8DhRITcvmg	Online Showcase
12:30 – 1 p.m.	Lambda Pi Eta Honor Society Inductions	Harris 214
1 – 1:30 p.m.	Alpha Sigma Lambda Induction and Honor Cord Ceremony	Chapel Common Room
1:20 – 1:30 p.m.	Dance Performance	Cate Center
2 – 3 p.m.	Poster Session	Cate Center Alcove
3 – 5:50 p.m.	Global Music at Meredith	WAI 117 Carswell Hall and Lobby

3 – 3:55 p.m.	Education https://meredith.zoom.us/j/99424919430	Ledford 101
3 – 3:55 p.m.	Interdisciplinary: Games, Stories, and Business https://meredith.zoom.us/j/97855193657	SMB 162
3 – 3:45 p.m.	Staged Reading: The Revision of the Last Work of Katarina Edwards	Jones Studio Theater
3 – 3:55 p.m.	Studies in Social & Visual Perception https://meredith.zoom.us/j/95512893192	SMB 118
4 – 4:35 p.m.	Nutrition and Health https://meredith.zoom.us/j/97855193657	SMB 162
4:30 – 5 p.m.	Student Academic and Leadership Awards Ceremony https://www.youtube.com/channel/UCEZ87JqxTcxW8DhRITcvmg	Online Ceremony
5 – 8 p.m.	Nutrition, Health, and Human Performance Awards Ceremony	Martin 113
5 – 6 p.m.	School of Natural and Mathematical Sciences Student Awards and Recognition Ceremony https://www.youtube.com/channel/UCEZ87JqxTcxW8DhRITcvmg	Online Ceremony
5:30 – 5:45 p.m.	Celebrating Women of Achievement in Human Environmental Sciences https://www.youtube.com/channel/UCEZ87JqxTcxW8DhRITcvmg	Online Ceremony
5:30 – 6:30 p.m.	Kappa Pi Induction Ceremony and Senior Cord Ceremony	137 Gaddy Hamrick
6 – 7 p.m.	CSA Music Awards	WAI 117 Carswell Hall and Lobby
6 – 7:30 p.m.	School of Business Student Achievement Celebration https://meredith.zoom.us/j/95201858171	Harris 214

Schedule of Events

MORNING CONFERENCE SESSIONS

Global Music at Meredith WAI 117 Carswell Hall and Lobby

- 9 - 9:20 a.m. *Chilean History And Its Way Of Showing The Power Of Music*
Cynthia Styron Sanchez
- 9:25 - 9:45 a.m. *Central America: Panama and comparing other countries*
Angel Kelley
- 9:50 - 10:10 a.m. *Mariachi: The Quintessential Music of Mexico*
Gwyneth Thomas
- 10:15 - 10:35 a.m. *El Chamamé*
Antonella Rosales
- 10:40 - 11 a.m. *Morenada and Marinera: An Examination of Peruvian and Bolivian Music*
Azrielle Marino
- 11:05 - 11:25 a.m. *Northern Native American Music*
Alaire Donofrio
- 11:30 - 11:50 a.m. *Songs of Knowledge: An Exploration of the Music of Indigenous North America*
Sarah Ella Trustman

Studies on Social Identity SMB 118, [Zoom Meeting ID: 955 1289 3192](#)

- 9 - 9:15 a.m. *Queering the Other: Levinas and Gender Identity in Media*
Scout Burch
- 9:20 - 9:35 a.m. *Exploring Edna's Identity as Outcast and Agent in Othering at Grand Isle*
Maria Solorzano
- 9:40 - 9:55 a.m. *Representation in Theatre: The Power of Visibility and Equity on Stage*
Bliss Wells
- 10 - 10:15 a.m. *White Women and Civil Rights: The Sisters Were Only In It For Themselves*
Elena Blackwelder

Politics and Society Kresge Auditorium, [Zoom Meeting ID: 921 7372 4922](#)

- 9 - 9:15 a.m. *Effects of Political Partisanship on County-Level COVID-19 Metrics and Responses to Statewide Executive Orders*
Mary Lovin, Reese Buie, and Sarah Jennings
- 9:20 - 9:35 a.m. *Exploring Hispanic Nationalism in the United States*
Olivia Slack
- 9:40 - 9:55 a.m. *Political Violence in Venezuela: Does Oil Policy Fuel the Fire?*
Adriana Sofia Gomez

10 - 10:15 a.m. *Effects of executive orders on COVID-19 transmissions and mortality of Hispanic populations*
Reese Buie and Mary Lovin

Studies on College Populations
Ledford 101, [Zoom Meeting ID: 994 2491 9430](#)

9 - 9:15 a.m. *Predicting Mental Health Outcomes for Collegiate Athletes*
Sarah Halsey

9:20 - 9:35 a.m. *The Connection Between Career and Family Plans of Meredith Students*
Caroline Welsh

9:40 - 10:15 a.m. *The Effects of Household Pets on Anxiety Exacerbated by COVID-19 in College Students*
June Burchette

10:20 - 10:35 a.m. *Investigating the Impact of Art Activities on the Mental Health of Students*
Lydia Gunn

10:40 - 10:55 a.m. *The Effects of Attachment on Interpersonal Self-Efficacy in Emerging Adults: Postpartum Depression in Mothers as a Moderator*
Molly Perry

11 - 11:15 a.m. *Belongingness of Transgender Students on College Campuses: The Impact of Professors Introducing Personal Pronouns in the Classroom Setting*
Mia Shelton

Pandemics: History behind the Headlines
SMB 162, [Zoom Meeting ID: 978 5519 3657](#)

9 - 11:15 a.m. *Six student presentations on exploring the history of pandemics*

Gender Roles in Literature
SMB 118, [Zoom Meeting ID: 955 1289 3192](#)

10:20 - 10:35 a.m. *The Symbolism and Imagery of Gender Inequality: Color and Time in Federico García Lorca's La casa de Bernarda Alba*
Maria Teakell

10:40 - 10:55 a.m. *Are Gender Stereotypes Tumbling in Gymnastics*
Raynor Dail and Aly Henneberry

11:10 - 11:25 a.m. *Katniss Everdeen: Feminist Icon in The Hunger Games or Upholder of Traditional Gender Roles?*
Brooklynn Watkins

11:30 - 11:45 a.m. *The Faces of Circe: Enchantress, Seductress, Goddess*
Krista Telford

Chemistry and Biology
SMB 162, [Zoom Meeting ID: 978 5519 3657](#)

11:20 - 11:35 a.m. *Analysis and Determination of Protein Function as Related to Structure*
Kendall Putnam

11:40 - 11:55 a.m. *Cloning of B-Glucosidase gene from Lactobacillus plantarum*
Katherine Daniel

Design and Art History
Kresge Auditorium, [Zoom Meeting ID: 921 7372 4922](#)

10:20 - 10:35 a.m. *Turn of the century: an exploration of historical construction and designs from 1890-1910*
Regina Franceschi

10:40 - 10:55 a.m. *Properzia de' Rossi: Femininity, Fruit Stone Sculpting, and Fine Art*
Sarah Shields

11:10 - 11:25 a.m. *The Lisnacrogger Scabbards: A study in Historiography, Iconography, Artisans, and River Cults of the Insular La Tène*
Leah Jensen

11:30 - 11:45 a.m. *Denim Kintsugi: Beauty out of the Breakage*
Lila White

2 - 3 p.m.

POSTER PRESENTATIONS

Cate Center Alcove

Coastal Erosion on the North Carolina Coast
Jessica Bland and Kaitlyn Muraco

Assessing transgenic basil for polyphenol oxidase expression
Katherine Daniel and Kourtnei Gerken

Identification of extracted prodigiosin from Serratia marcescens and application of synthetic sulfanilamide as antibiotic
Bartola Garcia

Regression Analysis of COVID-19 CFRs and Care Quality in VA Healthcare Systems
Robert Hall

The purification of TetR(41) from Serratia marcescens
Jordan Lamont

Biodiversity of Meredith Lake: An ongoing survey post-restoration
Madison Mathis, Sarah Page, Noelle Pearce

Teacher-Family Relationships in Childcare Centers
Lauren Mobley

Identification of Protein Function
Erin Murphy

Batrachochytrium salamandrivorans and the Susceptibility of North Carolina Salamanders
Jessica Ponimansky

*Women in Politics: Activism and Feminism According to North Carolina
Women of Color*
Inaya Rivera and Madison Weiss

*How Casting Entities Can Move The Theatre World To A More Progressive Stance Or
Keep It Stagnant*
Emily Spain

COVID-19 Vaccine Hesitancy Among College Students and Staff
Stephanie Wairagu

AFTERNOON CONFERENCE SESSIONS

Global Music at Meredith WAI 117 Carswell Hall and Lobby

- 3 - 3:20 p.m. *Georgian Music: Songs in the Mountains*
Julia Sullivan
- 3:25 - 3:45 p.m. *Vikings, Scandinavia and Antti Martikainen*
Aliyana Campbell
- 3:50 - 4:10 p.m. *Music in Australia*
Anna Cochran
- 4:15 - 4:35 p.m. *Music in Israel: Comprehending Music in Israel During Biblical Times*
Abby Jones
- 4:40 - 5 p.m. *Indonesian Instrument Tuning- and the Reasons Behind it*
Eliandras Sims
- 5:05 - 5:25 p.m. *Lebanese Maronite Music and the Impact of Westernization on Tradition*
Audrey Hubbard
- 5:30 - 5:50 p.m. *Music of Egypt*
Ayeh Samour

Education

Ledford 101, [Zoom Meeting ID: 994 2491 9430](#)

- 3 - 3:15 p.m. *Math Anxiety*
Grace Snipes
- 3:20 - 3:35 p.m. *Trauma Informed Teaching to Resilience*
Alyssa Eickler
- 3:40 - 3:55 p.m. *Examining How Instructional Strategies in Music Education Classrooms Support
Students on the Autism Spectrum to Develop Positive Social Skills*
Grace Raphun

Staged Reading Jones Studio Theater

- 3 - 3:45 p.m. *The Revision of the Last Work of Katarina Edwards*
Cas Corum

Studies in Social & Visual Perception
SMB 118, [Zoom Meeting ID: 955 1289 3192](#)

- 3 - 3:15 p.m. *Perception of Adopted Individuals among Non-Adoptees*
Annabel Hablutzel
- 3:20 - 3:35 p.m. *The Effects of Birth Order on the Big Five*
Paige Verica
- 3:40 - 3:55 p.m. *The Color of Words: Investigating the Effects of Consonant Sounds in Synesthesia*
Safa Ahmed

Interdisciplinary: Games, Stories, and Business
SMB 162, [Zoom Meeting ID: 978 5519 3657](#)

- 3 - 3:15 p.m. *Visual Storytelling & Storyboarding: The Future of Art at Meredith*
Bridget Gable
- 3:20 - 3:35 p.m. *Playing Games or Being Played?: Marketing to Young Audiences through Game Play*
Regan Andersen
- 3:40 - 3:55 p.m. *Building an app in Xcode*
Abigail Turner

Nutrition and Health
SMB 162, [Zoom Meeting ID: 978 5519 3657](#)

- 4 - 4:15 p.m. *The Effects of Dietary Patterns on Mood*
Kaleigh Paul
- 4:20 - 4:35 p.m. *Diet and Women's Health*
Crystal Chukwurah

ABSTRACTS OF PRESENTATIONS

THE TWENTIETH ANNUAL MEREDITH COLLEGE UNDERGRADUATE RESEARCH CONFERENCE

The Color of Words: Investigating the Effects of Consonant Sounds in Synesthesia

Safa Ahmed

*Research Adviser: Dr. Betty-Shannon Prevatt;
Social and Behavioral Science*

Synesthesia is a neurological condition where senses blend together. In Grapheme-Color synesthesia, people experience colors when thinking about letters, numbers, or words, while different sounds evoke colors in Chromesthesia. The purpose of this study was to determine if consonant sounds affect word-color associations in synesthesia; specifically, if words with soft consonant sounds would elicit lighter shades of color while words with hard consonant sounds would evoke darker shades of color. Participants (n=61) were recruited online and from a small women's college. The control group (n=17) consisted of people without synesthesia and experimental groups included people with Chromesthesia (n=25) and Grapheme-color synesthesia (n=19). Participants completed an online survey where they indicated the color and intensity, selected from a color scale, associated with ten hard- and ten soft-consonant words. Color intensity was quantified on a 0-10 numeric scale (0=lightest, 10=darkest). A 2x2 ANOVA revealed no significant interaction between consonant type and synesthesia (control and Chromesthesia groups), $F(1,26)=1.02$, $p=.321$. Additionally, color intensity did not differ significantly between hard- and soft-consonant words $F(1,26)=3.83$, $p=.061$. Grapheme-participant responses were not included because they did not conform to survey instructions. An examination of perceived colors revealed that hard-consonant words commonly evoked blue and green while soft-consonant words commonly evoked red, yellow, and blue in all three groups. Perception of

multiple colors was reported more frequently by Grapheme-participants. More research is needed to better understand word-color associations in Chromesthesia and Grapheme-Color synesthesia.

Playing Games or Being Played?: Marketing to Young Audiences through Game Play

Regan Andersen

*Research Adviser: Dr. Jeff Langenderfer;
Interdisciplinary*

The Federal Trade Commission has long been concerned about advertising directed at children and has worked to regulate the amount and nature of such advertising, because many children are unable to discern when they are being persuaded or deceived. As a valuable and easily swayed consumer segment, however, marketers see children as influential members of the consumer household and thus desirable marketing targets. Though most child-directed advertising was historically limited to television, radio, and print, children today face an onslaught of advertising efforts from traditional communication vehicles as well as social media, video-oriented apps such as Tiktok and Instagram, and increasingly gaming. Because of its ubiquity, growing importance, and limited attention from regulators, this paper focuses on children's in-game advertising, in an effort to qualify and quantify the nature and incidence of child-directed ads within the most popular children's gaming apps.

This research effort involved playing, recording, and cataloging the top twenty gaming apps in the iPhone app store in November 2021. The resulting analysis indicates that much of children's game time is actually advertising time, raising serious questions about the effects on children and their families with respect to health outcomes, financial impact, and the ethics of marketing to a vulnerable

population. Though gaming advertising remains largely unregulated, some gaming companies are clearly taking advantage of a regulatory vacuum to aggressively sell to America's youngest consumers.

White Women and Civil Rights: The Sisters Were Only In It For Themselves

Elena Blackwelder

Research Adviser: Dr. Shannon Grimes; Arts and Humanities

After a year of reignited activism for racial justice, larger conversations about social justice have revealed the flawed gender dynamics of the Civil Rights Movement and the inherent racism of the women's rights movement. Though feminists have described a vague alliance with other movements, they have failed to recognize how their goals may not align with those of communities of color. This brings forth questions about performative activism, and whether white people can work toward the interests of people of color without acting as a "white savior."

Movies and TV series have used friendship as a way to depict changing views on race by making racism a personal story without creating structural change. The typical narrative centers around interracial relationships while telling viewers that everyone should be able to be friends. In plotlines, interpersonal change is emphasized over systemic change; relationships between women of color and white women show the white friend experiencing a racial reckoning. This presentation will investigate the portrayal of these relationships, drawing from *The Help*, *The Long Walk Home*, *The Sisterhood of the Traveling Pants*, and *Little Fires Everywhere*; the analysis will rest on womanist theory supported by bell hooks' *Ain't I A Woman* and Mikki Kendall's *Hood Feminism*, as well as Critical Race Theory in order to evaluate how well or how poorly each relationship tackles how race influences interactions. Ultimately, this project will answer the question: What is the impact of white women and exclusive feminism on the advancement of equality in America?

Coastal Erosion on the North Carolina Coast

Jessica Bland and Kaitlyn Muraco

Research Adviser: Dr. Matthew Stutz; Natural and Mathematical Sciences

The study of coastal erosion shows the continuously rising sea level. Extensive research and data analysis on coastal erosion of the North Carolina coastline through comparative mapping analysis using Google Earth historical images and path tools helped collect the data. Images from 1994, or the earliest clear image available (2002 in some comparisons), to 2019 were used to analyze the erosion rates. Google Earth's path tool was used to create paths along the wet/dry line in the 1994 image and then again on the 2019 image. Vertical lines were then drawn every 50 km, allowing for measurement between the horizontal path lines. Coastal erosion rate was compared to different locations throughout the North Carolina islands. Comparing the results using graphs provides a detailed and in-depth look at the erosion rates in different areas. From there, it was easier to compare which areas were more affected by coastal erosion than others. Other aspects had to be included, such as the replenishing of sand. Islands that experience tourism or inhabited areas have gained land. Due to erosion and government interception on capes/inlets, they have changed shape entirely and have reformed with the tide. A rise in coastal erosion can vary depending on location. Several islands showed a steady incline in erosion rates while others under development commonly showed a decline. Areas without the influence of people show how coastal erosion is affecting those areas and how the implications can affect the island in different ways.

Stress and Burnout Among Educators Related to COVID-19.

Kimberlynn Bradley

Research Adviser: Dr. Amy Scrinzi; Education

In 2019, COVID caught the attention of the world. Education was one the most affected industries. With a moment's notice, educators from had to rethink and restructure their instruction methods to

be done from a distance. As a student training for a career in education, I am in a unique position to see things from both perspectives. I am interested in how this change to virtual education has affected the mental health of educators.

I conducted a survey to examine the challenges, stress and burnout among education professionals and the effects on teachers' mental health. In order to collect information for this study an anonymous electronic survey through Google Forms was used to gather honest answers from preschool teachers through college professors (N=55) while protecting the privacy of the participants. Survey answers were submitted through Google Forms and the data are stored in a password protected electronic format.

Results were not surprising in that the majority of educators preferred in-person learning and reported a high level of stress. A variety of challenges were expressed in regards to virtual learning. On a positive note, many respondents reported that they still love teaching and interacting with their students in any format. Technology skills for both staff and students were also noted as improved after virtual and/or hybrid learning.

Effects of Executive Orders on COVID-19 Transmissions and Mortality of Hispanic Populations

Reese Buie and Rachel Lovin

Research Adviser: Dr. Carolina Perez-Heydrich; Interdisciplinary

The COVID-19 pandemic is a widespread disease that has impacted the lives of millions across the world. In the United States, the consequences of the pandemic have disrupted the Hispanic population in a multitude of ways. This project will address whether the effects of state-level executive orders on COVID-19 transmission and deaths differed between Hispanic and non-Hispanic populations. This investigation dives into the efficacy of North Carolina policies that were in place to prevent the transmission of COVID-19 between March 1, 2020 and February 17, 2022. Regression models were used to evaluate the effects of loosening or tightening state-

level restrictions on COVID-19 growth rates and mortality rate changes, and used to determine whether these effects varied between Hispanic and non-Hispanic populations. Additionally, this study will report on broader disparities in county-level vaccination rates associated with Hispanic ethnicity. It is important to consider ethnic disparities when evaluating the effectiveness of state-level COVID-19 mitigation strategies in order to investigate the efficacy of these interventions. We expect, based on prior studies, to see higher case growth rates, higher death rates, and lower vaccination rates in counties with higher Hispanic populations. Additionally, this project will discuss the barriers that the Hispanic population faced during the pandemic and examine the influences COVID-19 transmission and mortality has had on the community.

Queering the Other: Levinas and Gender Identity in Media

Scout Burch

Research Adviser: Dr. Shannon Grimes; Arts and Humanities

Critical discourse about gender identity has come to the forefront of pop culture conversations. Movies like *The Danish Girl* explore the experiences of gender non-conforming individuals for audiences outside of the trans community. The goal of these films is to create empathy for the experiences and lives of transgender individuals, something that may be foreign to the audience. This project will explore media's depiction of gender-nonconforming individuals through the lens of Levinasian ethics to assess whether this encounter with gender otherness through film encourages or discourages gender inclusivity through how they portray these characters and storylines.

Because Levinasian ethics critiques egocentric approaches to ethics, in which the recognition of the Other is only achieved through seeing a reflection of the Self, his work is useful in analyzing these issues. Empathic recognition is the avenue that most media takes when portraying the stories

of gender-nonconforming individuals; mainstream films attempt to make the inner workings of transgender individuals something that the cisgender population can comprehend, but do their simplifications and generalizations distort the truth to the point where it can no longer be considered accurate or constructive? This analysis will show where efforts to represent gender non-conforming individuals have succeeded and where they have failed to represent this community in a productive way; these moments of failure will be occasions to think about the goals, aims, and methods of representation at the mass level.

The Effects of Household Pets on Anxiety Exacerbated by COVID-19 in College Students

June Burchette

Research Adviser: Dr. Gwynn Morris; Social and Behavioral Science

College students are experiencing high levels of anxiety during the current global pandemic. One possible coping mechanism for this anxiety could be interacting with a pet. Thus, this study examined if interacting with a household pet would lower students' anxiety and if playing with a pet can lower anxiety more than other activities. The participants (N = 40) were undergraduate college students. Participants reported their initial levels of anxiety by filling out an online survey, then played with their pet or did another stress-relieving activity of their choice for 3 minutes, and then again reported their levels of anxiety. Anxiety was measured using the established State Trait Anxiety Inventory (STAI) scale, for which scores can range from 20 (low anxiety) to 80 (high anxiety). The mean anxiety levels of participants who interacted with their pets (N = 32) declined from 44.96 to 33.1 in the post test (SD = 13.31 and 11.5) and the mean anxiety levels of the participants that did not interact with their pets (N = 8) declined from 44.62 to 35.25 (SD = 13.31 and 11.50). The pre-test data showed that both groups received a high average score for their anxiety levels and both decreased into a moderate

level of anxiety according to the post test results. A repeated measures ANOVA confirmed that there was a decrease in anxiety levels after spending 3 minutes in any stress-relieving activity ($F(2,38) = 0.56, p < .05$), but that there was no significant difference in this reduction between playing with a pet or doing another activity. Thus, both pet ownership and spending time in intentional stress-relieving activities could have benefits for college students coping with stressful situations.

Keywords: household pet, anxiety, STAI

Vikings, Scandinavia and Antti Martikainen

Aliyana Campbell

Research Adviser: Dr. Jean Wozecraft-Ornellas; Arts and Humanities

When most people hear of the Vikings, images of rugged, ruthless, barbaric killers might come to mind. Although they were best known for their violent invasions of foreign territories, the Vikings did have culture and class. Susan M. Margeson states in *Eyewitness: Viking* that these ruthless barbarians were also great sailors, craftsmen, and storytellers. When the Vikings were introduced to Christianity, there were many changes in their cultural traditions - especially in those related to music. This presentation discusses the Viking traditions of song, dance, and poetry, and the influence of Christianity on Viking culture.

In addition to these main topics, my presentation will discuss the modern musical subgenre of Viking metal and how it is geographically linked to the North (the North being Scandinavia). I will also touch on Finnish folk literature and describe how the *Kalevala*, Finland's epic poem, has influenced the works of many Finnish composers. Then these final two topics will be combined in a breakdown of the compositions of Antti Martikainen, a Finnish musical composer. This was such an exciting project for me and I hope to reflect a similar intrigue for Viking music and Scandinavian music onto my readers.

Diet and Women's Health

Crystal Chukwurah

Research Adviser: Dr. Kaitlyn Leonard; Health and Human Performance

From premature aging to infertility to breast cancer to Alzheimer's Disease, women face their fair share of health issues as they age. Collectively these conditions may critically impact women's skin health, reproductive system, cognitive functions, and overall well-being. When it comes to cancer, more women in America are diagnosed with breast cancer compared to any other cancer, besides skin cancer. With the help of medical treatments, the breast cancer survival rates have improved significantly within the last 50 years. Many of these medical treatments for breast cancer are surgery, radiation therapy, and chemotherapy. Though these treatments may be effective in function, they also may impact the quality of life for the women being treated. As women age, diet may play a role in preventing these common diseases and health issues that arise over time. The purpose of this research is to investigate the role diet can play in preventing common diseases women face as they age. More closely, we will investigate the common conditions related to skin health, the reproductive system, breast cancer, and brain health.

Music in Australia

Anna Cochran

Research Adviser: Dr. Jean Wozencraft-Ornellas; Arts and Humanities

I am researching Australian music, including the Torres Strait Islands and Aboriginal Australian music. I am going to look into the ways that this music is going to make a difference in the lives of Australians, and show the difference between Australian music, Aboriginal Australian music, and Torres Strait Islands music. I am interested to see the different styles, instruments, and events for the music being played. Having not studied Australian music in class, I do not know much about Australian music. From common knowledge, many people know that the didgeridoo is from Australia. I plan to go in depth about its rich history and

popularity. I hope to show people new music and a new style of music from across the world. An interesting thing that I researched already was that the folk music in Australia has a combination of many different cultures, including African, Asian, Celtic, Greek, Klezmer, and many more. I also am excited to go into different instruments that come from Australia, one of which being Gum Leaf. I am also excited to go dive into the Aboriginal culture of Australia. Aboriginal people believe strongly in the music and dance of Australia, understanding that it is important to keep the tradition of their country. I am excited to look at more of the traditions, music, and dance in Australia. I am very eager to listen to more Australian music and look into the history of the instruments, music ensembles, people, and all things Australian.

The Revision of the Last Work of Katarina Edwards

Cas Corum

Research Adviser: Dr. Steven Roten; Performance/Artistic Production

This full length play is based on a 10 minute play I wrote in my first playwriting class in the Fall of 2020. Its about a dysfunctional family that has to deal with their parent's legacy and impact on their lives after their mother's suicide. The three siblings find that their relationships with each other have been affected by both their parents' influences and the siblings endeavor to heal what has been broken between them. The play always had an unconventional structure, but eventually it took a play within a play format. The youngest sister is a writer and has written a play about the aftermath of her mother's death. The play involves the three siblings reviewing and commenting on the daughter's play as it is being acted out by a different trio of actors in front of the three characters. It was set up this way to comment on how the events of the play changed the characters and to show the further growth they still have to do. When writing this play, I wanted to raise awareness about mental health, while experimenting with how childhood trauma can affect siblings differently

based on the individual relationships they have with their parents, and to experiment with how that trauma can continue to influence children well into adulthood. The result was three unique, complex characters that I have come to love dearly. I hope that the feedback I get from this presentation will help me continue to develop this piece.

Are Gender Stereotypes Tumbling in Gymnastics

Raynor Dail and Aly Henneberry

Research Adviser: Dr. Holly Fischer; Arts and Humanities

In American society, athletes hold a special place in society. Some dedicate their lives to their sport in hopes of representing their country at the highest level. To many, there is no better way to show the world America's power than on an international stage. Compared to their fellow athletes, however, women's gymnastics represents the United States of America in a dramatically different light. Gymnasts for Team USA are popular household names. These women are bold and daring on the competition floor, often performing routines that are incredibly dangerous if done wrong, but viewers admire gymnasts for their beauty and grace. Ultimately, female gymnasts not only represent their country because of their spectacular talent but because they are a microcosm of American attitudes towards women. Once the spotlight fades, many gymnasts return to their private lives to deal with issues including PTSD due to abuse from trusted adults, body image issues, and eating disorders - issues many American women experience too often. Several famous gymnasts are using their fame to demand change within the sport. These changes include standards of conduct for officials and coaches, treatment of athletes, and the education of young girls in nutritional wellness and personal rights. However, concerns such as abuse, body image issues, and eating disorders will continue to plague future gymnasts despite demands for change within USAG because women's gymnastics is a microcosm

reflecting the overall treatment of women in American society, and until society changes, women's gymnastics will remain stagnant as well..

Cloning of B-Glucosidase Gene from Lactobacillus Plantarum

Katherine Daniel

Research Adviser: Dr. Jason Andrus; Natural and Mathematical Sciences

L. plantarum is one of many lactic acid bacteria (LAB) that are involved in bacterial processes pertaining to a multitude of fermented food and beverage products (Behera et al. 2018). β -glucosidases are key enzymes in releasing aromatic compounds that reside in fruits allowing for natural flavoring (Sestelo et al. 2004). In this study, the gene in *L. plantarum* that codes for the β -glucosidase enzyme, *malZ*, will be isolated and amplified via PCR and expressed in *E. coli* to allow for further studies of the enzyme. Genomic DNA isolations were performed to extract genomic DNA from *L. plantarum* to be used as a template for polymerase chain reaction (PCR) to amplify copies of the *malZ* gene. Primers for the gene were designed using Primer 3 Plus and WebCutter. PCR results were analyzed using gel electrophoresis on 1-2% Agarose gel to confirm the amplification of a 1375bp fragment of the *malZ* gene. Positive results were cleaned using the QIAquick PCR purification kit. Purified PCR product was ligated following Promega's pGEM-T Easy Vector protocols, generating the new plasmid pGEM-*malZ* containing the *malZ* gene from *L. plantarum* and transformed into *E. coli* cells. Work to confirm the presence of this plasmid in *E. coli* and subsequent cloning into an expression vector to produce the MalZ protein for study is underway.

Assessing Transgenic Basil for Polyphenol Oxidase Expression

Katherine Daniel and Kourtnei Gerken

Research Adviser: Dr. Karthik Aghoram; Natural and Mathematical Sciences

Sweet basil (*Ocimum basilicum*) is a culinary herb most notable for the usage of the leaves in making

the ever-popular Italian pesto. For this and other preparations, leaves of the basil plant are ground or chopped finely. This type of processing often results in an unpleasant browning of the product. Not only is the color unpleasant, but the chemical change results in an unpalatable bitter taste which is a result of common defense mechanisms that trigger polyphenol oxidase (PPO) enzymes. Transgenic sweet basil plants have been developed with the goal of knocking out these PPO enzymes. The goal of this project is to assess successful gene transformation in sweet basil plants via PCR and PPO activity assays. Genomic DNA from 6 putative transgenic sweet basil plants were assessed using PCR targeting the NPTII gene, which is a marker for transgenesis. The PCR products were analyzed using gel electrophoresis on 1.2% Agarose gel to confirm the amplification. Five out of the six transgenic basil plants had the NPTII gene incorporated in their DNA, confirming successful transgenesis. Work to test PPO activity in the transgenic basil plants via PPO assay's and ensure plant fertility proceeds is underway.

Northern Native American Music

Alaire Donofrio

Research Adviser: Dr. Jean Wozencraft-Ornellas; Arts and Humanities

Native American music played a foundational role in not only Native American culture, but also the beginnings of western American compositions as we know them today with movements such as "The Indianist Movement" and contributions to later genres including pop and jazz. Northern Native American music spans diversely across North America and the Arctic, reflecting various tribes' cultural histories and social norms. Traditional Native American music was used for ceremonial and entertainment purposes and was preserved over time primarily through oral tradition. Distinct vocal techniques, complex rhythmic structures, and scales that are characterized by half-step intervals and ornamentation make Northern Native American music notable, as well as it's unique and often culturally inspired instruments.

Trauma Informed Teaching to Resilience

Alyssa Eickler

Research Adviser: Dr. Cecelia Toole; Social and Behavioral Science

Childhood Trauma has debilitating effects on the physical development, and mental well-being of a child. The purpose of this study is to research how knowledgeable, prepared, and supported teachers and future teachers are about the effects of childhood trauma. A firm sense of safety is often the first thing that is stolen from a child who has experienced trauma. Equipping teachers with trauma-informed teaching strategies can help transform school environments into safe, welcoming places where all children feel safe and wanted. The Adverse Childhood Experience study explains that children who have one positive trusted adult in their life have a higher chance of overcoming their trauma. Teachers have the opportunity to be that one trusted adult in a student's life and restore their sense of safety, belonging, love, esteem, and purpose. It is important to note that not all students who experience trauma will ask for their teachers help and they may ask for it in the most unloving ways. The results of this research will be used to aid in the development of tangible resources and activities to equip classroom teachers with methods to recognize and respond to the needs of students who have faced traumatic experiences. Through multiple observations of students and interviews with teachers the researcher will develop a professional development for future teachers, and activities based on needs of students who have faced traumatic experiences. Only then can teachers be expected and fully able to meet students where they are by helping them develop resiliency strategies, understand and control their emotions, overcome their trauma, and be successful.

Turn of the Century: an Exploration of Historical Construction and Designs from 1890-1910

Regina Franceschi

Research Adviser: Dr. Eunyoung Yang; Arts and Humanities

Kassia St. Clair's book, *The Golden Thread: How Fabric Changed History*, is the primary inspiration for my project. In this book, St. Clair describes how fashion is a common thread in the fabric of human experience and a traceable progress of our ingenuity and evolution. This project examines the pivotal chapter in history through the lens of fashion during the period of 1890-1899.

This creative project is documented to gain a greater understanding of the garments by reviewing three types of historical evidence used: historical photographs, fashion plates, and paintings found in the literature and a close investigation of a private artifact from the period. Through observation and reconstruction of an existing garment, the researcher will learn not only construction and fit methods of the late Victorian period but also a glimpse of the daily activities of an upper-middle-class woman. In addition, the researcher will experiment with observation and correct interpretation of sources to document the design process by deriving inspiration from historical photographs and illustrations.

The overall objective of the project is to enhance the understanding of fashion construction and design from the perspective of a specific period. The two primary objectives are 1) to show how design elements evolve and apply to the modern era and 2) to demonstrate how clothing is the thread that holds together the human experience.

Visual Storytelling & Storyboarding: The Future of Art at Meredith

Bridget Gable

Research Adviser: Dr. Gregory Carter; Arts and Humanities

Visual storytelling exists everywhere in the world around us, in the form of novels, animation, branding and marketing. Being a good storyteller

is essential for every discipline (including the sciences). While every person has the skill of storytelling, it is a skill that can be refined and honed to improve communication and the world around us. To that end, my presentation will talk about how classes that explore narration and visual storytelling at Meredith can take a half-baked dream and turn it into a reality and a profitable future. The world I have imagined two years ago is now becoming actualized, turning a handful of drawings and loose ends into the placeholder world view that continuously generates new characters, stories, and conflicts. My presentation will talk about the specifics of constructing plot, character, theme, and point-of-view.

Identification of Extracted Prodigiosin from *Serratia Marcescens* and Application of Synthetic Sulfanilamide as Antibiotic

Bartola Garcia

Research Adviser: Dr. Jason Andrus and Dr. Walda Powell; Interdisciplinary

Serratia marcescens is a gram-negative, opportunistic pathogen that can cause fatal nosocomial infections in humans due to its antibiotic resistance. During its growth, this bacterium produces prodigiosin, a red-pigmented alkaloid, as a metabolic by-product. Studies have indicated that prodigiosin has antibacterial, antifungal, and antimalarial properties that could potentially induce apoptosis in cancer cells. The unique tripyrrole structure that the pigment has contributes to the biological role that it plays in several physiological processes. The aim of this study was to employ both bacteriological and synthetic chemistry techniques to an integrated laboratory module that investigated the chemical isolation, purification, and identification of prodigiosin from lab grown *S. marcescens*, while concurrently synthetically developing a potent sulfanilamide antibiotic that could be used on the bacterium. Prodigiosin was extracted from *S. marcescens* and purified through thin layer chromatography. Sulfanilamide was made from acetanilide through reflux, simple distillation, and suction filtration. The results showed that the sulfanilamide antibiotic did not inhibit any

bacterial growth, however, the synthetic process used was improved to increase the product yield of sulfanilamide from 6.70% to 10.04%. The extracted prodigiosin was relatively pure and identified through H-NMR and infrared spectrometry. Since there are few integrative educational modules that incorporate interdisciplinary skills between organic chemistry and microbiology, establishing effective and interactive modules that cross-interdisciplinary skills like this one can further enhance students' understanding and application of conceptual modules.

Political Violence in Venezuela: Does Oil Policy Fuel the Fire?

Adriana Sofia Gomez

Research Adviser: Dr. Jeffrey Martinson; Arts and Humanities

The purpose of this investigation is to explore causes of political violence in Venezuela today. The situation in Venezuela has been developing since the 1970s but has gained more attention recently as the economic crisis has caused a humanitarian and political violence crisis as well. The research focuses on the role historical factors of Venezuelan and global politics play in the crisis that has been occurring for years now. As a contributor to the violence, this research will hopefully determine the impact of poor oil policy decisions, a drop in revenue or a combination of both.

Investigating the Impact of Art Activities on the Mental Health of Students

Lydia Gunn

Research Adviser: Dr. Betty-Shannon Prevatt; Social and Behavioral Sciences

College student mental health has been significantly impacted by the COVID-19 pandemic (Son et al., 2020). Art therapy is an effective technique to treat mental health symptoms used in both individual and group settings (Braus & Morton, 2020; Sonnone & Rochford, 2020). The present study examined the effect of art activities on the mental health of college students. Participants (N=19) completed a 60-minute art activity using various materials and mediums at one of four sessions over the span of three months. Stress

and anxiety levels were assessed using a pre- and post-test adapted from the Perceived Stress Scale and the General Anxiety Disorder Scale (Cohen, et al., 1983; Spitzer, et al., 2006). Individual stress and anxiety levels were calculated by the sum of the participants' answers for each question. A one-way ANOVA revealed no significant difference in stress ($p > .419$) and anxiety ($p > .642$) scores at pre- or post-tests between data collection groups; thus data were aggregated. A t-test revealed a significant difference between pre- (M=7.26, SD=2.92) and post-test (M=4.32 SD=2.40) stress levels, $t(18)=6.21, p < .001$. A significant reduction in anxiety from pre- (M=13.79, SD=5.47) to post-test (M=6.70, SD = 4.14) was also revealed, $t(18)=7.91, p < .001$. Findings indicate that art interventions that are easy to implement and acceptable to students are an effective tool in improving mental health and could supplement existing student mental health resources on college campuses.

Perception of Adopted Individuals among Non-Adoptees

Annabel Hablutzel

Research Adviser: Dr. Cynthia Edwards and Dr. Mark O'Dekirk; Social and Behavioral Sciences

Fiske, Cuddy, and Glick (2006) found that when people form stereotypes, they tend to decide whether people are warm or competent. Miall (1987) and Garber and Grotevant (2015) found that adopted people may often experience microaggressions. The purpose of the current study was to further examine people's perception of children who are adopted across the dimensions of warmth and competence. Participants were 85 Meredith College students recruited from undergraduate psychology and sociology courses. Each participant was presented with four scenarios describing a hypothetical situation where the character in the scenario was either described as being adopted into a family or described as living with their biological parents. The participants were asked to rate the person in the scenarios on perceived warm and competence on a scale from very likely to very unlikely. For this study, the independent variable was the scenario given (adopted character vs. biological character) and the

dependent variable was how that character was rated on warmth and competence. All participants received all four scenarios in a counterbalanced within-subject design. I hypothesized that the adopted character would be rated as less warm and less competent than the character who was not adopted. As hypothesized, this study found statistical significance with participants rating those who are adopted as less warm, $t(84) = 5.31, p < .05$, and less competent, $t(84) = 2.85, p < .05$, indicating a potential bias in our culture against adopted individuals on various measures of personality characteristics.

Regression Analysis of COVID-19 CFRs and Care Quality in VA Healthcare Systems

Robert Hall

Research Adviser: Dr. Carolina Perez-Heydrich; Interdisciplinary

The purpose of this study is to identify variables that influence the COVID-19 Case Fatality Rates (CFRs) seen in healthcare systems run by the Department of Veterans Affairs (VA). Evidence of variable relationships with COVID-19 CFRs could inform VA healthcare policy. 50 VA Healthcare Systems in the continental United States were sampled and simple linear regression analysis was conducted for their COVID-19 CFRs and healthcare quality metrics published according to the VA Strategic Analytics for Improvement and Learning (SAIL) value model. Additionally, a geographic variable was considered where the difference in median COVID-19 CFRs by US region were assessed with a Kruskal-Wallis test. Of the 13 tested healthcare quality metrics, only the 30-Day Standardized Mortality Ratio (SMR30) and employee satisfaction had statistically significant slope coefficients, with a moderate-strength positive relationship for SMR30 and a very weak positive relationship for employee satisfaction. The Kruskal-Wallis test determined that regional COVID-19 CFR medians were not substantially different enough to warrant further testing with pairwise Wilcoxon Rank Sum tests. The relationship between SMR30 and COVID-19 CFR at VA Healthcare Systems suggests that SMR30

algorithms may inaccurately forecast COVID-19 mortality risk, and/or certain VA Healthcare Systems have worse COVID-19 patient outcomes in an acute care setting. Further studies should continue to investigate this relationship and conduct regression analyses with additional SAIL healthcare quality metrics.

Predicting Mental Health Outcomes of Meredith College Students

Sarah Halsey

Research Adviser: Dr. Emily Lada; Natural and Mathematical Sciences

Mental health has become an increasingly important topic to discuss with the rise in reported mental health conditions over recent years. Anxiety is the most common category of mental health disorders, affecting 40 million adults in the United States. Furthermore, up to 35% of elite athletes suffer from anxiety and other mental health disorders. It is important to recognize, however, that the pressure athletes face to appear strong often prohibits them from coming forward with their mental health struggles. As a result, many athletes do not receive the treatment they need for their mental health. The purpose of this research is to investigate the prevalence of anxiety disorders affecting athletes at Meredith College. For comparison, this study also includes Meredith students who are not on an athletic team. A survey of Meredith College students is used to collect data, and the survey includes questions pertaining to academics, such as year in school, major, and GPA, as well as questions pertaining to symptoms of anxiety. In addition, athletes are asked about their athletic career prior to and during their time at Meredith College. We use visualization techniques to compare anxiety prevalence in athletes and non-athletes. We also apply logistic regression techniques to predict the probability that a Meredith college student will experience severe anxiety, using athletic status as one of the factors. We hope the results of this research can be used to determine which students at Meredith College are at high risk for developing an anxiety disorder.

Lebanese Maronite Music and the Impact of Westernization on Traditions

Audrey Hubbard

*Research Adviser: Dr. Jean Wozencraft-Ornellas;
Performance/Artistic Production*

Lebanese music stems from old traditions and instruments of Arabia, but Lebanon has also seen many influences from music around the world. For this presentation, I am introducing the traditional music of Lebanon with a focus on the music of Maronite Catholic rite. The music of the Maronite Catholics includes the instruments and sounds of Lebanon while also practicing the Catholic Mass in a unique and beautiful way.

I will focus my presentation on the sounds and history of the Maronite rite. I will discuss several traditional forms of Lebanese music and how music has been used in Lebanon to build community and shape the Maronite music. Lebanese music plays an important role in religious ceremonies and culture. Lebanon has also been subject to influences from other cultures and styles of music. Even as early as the twelfth century the Maronite rite experienced efforts to Latinize the rites, and Lebanese music also has been influenced by various musical trends after World War II and the Lebanese Civil War.

The music and culture of Lebanon is filled with rich sounds and it incorporates traditional instruments and language with Western sounds; while modern Lebanese music may be significantly Westernized, the traditional sounds of Lebanon are appreciated and celebrated in the Western world.

The Lisnacrogher Scabbards: A study in Historiography, Iconography, Artisans, and River Cults of the Insular La Tène

Leah Jensen

Research Adviser: Dr. Beth Mulvaney; Arts and Humanities

The Lisnacrogher Scabbards are a set of Insular La Tène Irish sword scabbards dating to around 200-100 B.C.E found near the river Bann in Ireland, which exemplify the La Tène style chiefly in their undulating, engraved linear ornament. By

examining historiography and iconography of the scabbards, my research considers the effects of biases in past scholarship, as well as what insight can be gained from exploring the scabbards' function and cultural implications. Past scholarship has been biased towards the idea that the Lisnacrogher scabbards are derivative of the Yorkshire scabbard school, when in fact, their iconography hints at a complicated set of relationships between British, Irish, and continental Celts. Study of their iconography also lends insight to their possible function; the method of organizing the ornament by use of s-figures across the group of scabbards shows a cohesive school and helps provide evidence that these scabbards could have come from one aristocratic workshop. The Lisnacrogher scabbards also provide insight into the lives of sword smiths, their patrons, and the workshops that created them. The findspot of the scabbards, when connected with themes from Celtic mythology and religion, support the idea that these objects may have had an association with Celtic river cults. Analyzing artifacts such as the Lisnacrogher scabbards under current models of evaluating Iron Age Art helps to further our understanding of the La Tène and provides evidence of a society with an art tradition in its own right and cultural connections to both mainland Europe and Britain

Music in Israel: Comprehending Music in Israel During Biblical Times

Abby Jones

*Research Adviser: Dr. Jean Wozencraft-Ornellas;
Performance/Artistic Production*

For my CSA presentation, I am researching the music of Israel focusing on Yiddish and Klezmer music, the instruments, vocal styles, cultural impacts, and music from Biblical times. I will discuss the role of each of these aspects in Israeli music, focusing on the impact and role of music in Israel during the Biblical period.

Throughout my research, I have concentrated on four particular questions: what instruments were an important part of Israeli music, how was music integrated into the culture of Israel, how has

Israeli music evolved, and what was music's role in Israel during Biblical times? Music in Israel was used during celebrations, laborious work, and worship to name a few of its roles. Multiple instruments were used as part of the creation of music during the time, such as harps, drums, tambourines, trumpets, and horns. Significantly, particular stories within the Bible discuss the instruments used during specific occasions, such as the story mentioned in 2 Samuel 6:5, used as evidence in an article. 2 Samuel 6:5 mentions David and the Israelites celebrating with stringed, wooden, and percussion instruments. In the interest of broadening the appreciation and knowledge of non-western musics, my goal is to introduce the history of the musical instruments and function of Israeli music during Biblical times

Central America: Panama and Comparing Other Countries

Angel Kelley

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

In this paper I will be talking about the music of Central America. Central America is in the southernmost region of North America and is directly under Mexico. It is comprised of countries like Panama, Costa Rica, Nicaragua, Honduras, El Salvador, Guatemala, and Belize. I will be focusing and comparing other countries along with Panamá. I will also talk about their history along with their music. I will be investigating the different instruments that are played in Central America music, while comparing them to other instruments used in other countries like Belize. I will provide examples of these instruments such as the Accordion, Pandeiro, Timbale and many more. Central America was originally populated by the indigenous people who inhabited Central America, however in the 16th century Central America was colonized by the Spanish. In 1821, The five countries of the Former Captaincy General eventually formed the Federal Republic of Central America. In the Panamanian culture along with the rest of Central America their music is influenced

by many cultures like Spanish, Caribbean, African, Indigenous, and American. Due to these different cultures, Panamá music has flourished with music and dances such as Salsa, Merengue, Cumbia, Reggae. However, folkloric típico (typically folk music) which is called pindín is usually played with an accordion and yodeling. At the end of my presentation I hope to encourage others to do their own research about certain places in Central America and to perhaps discover for themselves information that I did not cover in my project.

The Purification of TetR(41) from *Serratia Marcescens*

Jordan Lamont

Research Adviser: Dr. Jason Andrus; Natural and Mathematical Sciences

Serratia marcescens (*S. marc.*) is a common gram-negative bacillus bacteria that has historically been known to cause nosocomial infections. *S. marc.* infections are such a large problem in hospital settings because of their multidrug resistance, especially due to the wide variety of resistances caused by numerous efflux pump genes that can be intrinsic or acquired through genetic mutations and horizontal gene transfer. One such efflux pump is the tetracycline resistance pump mainly comprised of the *tetA(41)* and *tetR(41)* genes. This pump resists tetracycline, an agent known to exhibit antibiotic activity toward a wide range of organisms. Of the two genes, *tetR(41)* will be purified in this project to study the repressor protein, TetR(41), that binds to the operators of the pump genes to control their production. The gene was isolated from the extracted *S. marc.* genome using polymerase chain reaction (PCR) The primers for the PCR were designed through Webcutter 2.0 and Primer3Plus; these primers included restriction sites for BgIII and Acc65I. The PCR product was cleaned by using a PCR cleanup kit. The Purified PCR product was ligated into Promega's pGEM-T Easy Vector then transformed into competent JM109 *E. coli* cells. After growing, some of these cells underwent plasmid preparation

and a restriction digest with BglIII and Acc65I. Work still needs to be done to ligate into the PinPoint XA expression vector so that TetR(41) can be isolated and purified.

Effects of Political Partisanship on County-Level COVID-19 Metrics and Responses to Statewide Executive Orders

Mary Lovin, Reese Buie, Sarah Jennings
Research Adviser: Dr. Carolina Perez-Heydrich; Natural and Mathematical Sciences

The COVID-19 pandemic disrupted nearly every facet of people's lives. Government mandates and recommendations of social distancing and staying at home were widespread as the pandemic began in the US, and masking recommendations followed soon after. Now, the widespread availability of COVID vaccines has offered a hope that the pandemic will become manageable in day-to-day life. However, political polarization may be a danger in the country's attempts to recover from the virus. This study seeks to investigate (1) whether there is a difference in county level case growth rates, death rates, and COVID vaccination rates based on political partisanship in North Carolina, and (2) whether the effects of state-level executive orders aimed at loosening or tightening COVID-19 restrictions differed according to county partisanship. Partisanship will be measured based on a county's proportion of votes for Donald Trump or Joe Biden in the 2020 presidential election (data from the NCSBE). Health related data is taken from the COVID-19 Dashboard on the website of the NCDHHS, between March 2020 and February 2022. We expect, based on prior studies, to see higher case growth rates, higher death rates, and lower vaccination rates in counties that voted for Trump in 2020. Additionally, we expect to see less of an effect of state-level executive orders on counties that voted for Trump in 2020.

Morenada and Marinera: An Examination of Peruvian and Bolivian Music

Azrielle Marino
Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

Peru has had a rich history, as has Bolivia. The territory that is now part of Peru was once the Norte Chico civilization, the oldest civilization in the Americas, and the whole Andean part of South America was once ruled by the Incan Empire. Ever since then, colonization and migration have developed Andean culture into what it is today and that includes the music. However, despite their shared genres, there is dispute over some of the countries traditional dances much so that there is debate between Bolivia and Peru even today as to who originated the dance. Bolivia has many similarities in its traditional music to Peru, although it is less affected by outside influences, taking more from its indigenous people.

I will focus on Peruvian and Bolivian traditional music and on its various influences. I seek to further examine the impact of those influences on the music and dances of the neighboring cultures, and how the countries compare in contrast when their music is examined. Furthermore, I will explore the instruments present in both countries.

Along with the current musical culture in both countries, it is important to consider the histories of the countries. Spanish and African influence diversified the music in the cultures and introduced new genres and dances, but the colonizers actively attempted to suppress the traditional music in the country.

Although there is much study of Andean music, this presentation will compare and contrast the musics of Peru and Bolivia, within the context of their histories.

Biodiversity of Meredith Lake: An Ongoing Survey Post-restoration

Madison Mathis, Sarah Page, Noelle Pearce
*Research Adviser: Dr. Maria Pickering-Villa;
Natural and Mathematical Sciences*

Biodiversity is important to measure in ecosystems. Each organism has an impact on its environment, and healthy ecosystems are often associated with having higher species diversity. In late March of 2017, Meredith College Lake was drained due to the erosion of pipes, and in late September of 2021, renovations were completed and the lake was refilled. This ongoing project aims to monitor and collect biodiversity information post-lake filling, and, where possible, compare to previous research on the lake prior to draining (e.g., 2014 turtle population survey). Several field methods are being employed to collect data, both targeting particular animal groups (e.g., turtle traps, using echometers to record and identify bat species, etc.) and weekly general surveys (e.g., wildlife cameras and concentrated efforts to document all wildlife encountered within 30–60 minutes). The citizen science app, iNaturalist, is being used to record observations and identify species; currently there are approximately 100 species recorded. All data collected during this project will be used as a baseline for future research. Fall 2021 turtle trapping and Spring 2022 observations confirmed that four of the five turtle species recorded in 2014 are present; additionally there was one mark-recapture individual from 2014, suggesting potential site fidelity. As this is an ongoing survey, we encourage the whole Meredith College community to get involved as citizen scientists by downloading the iNaturalist app and taking photographs of the natural world around all of us!

Teacher-Family Relationships in Childcare Centers

Lauren Mobley
Research Adviser: Dr. Pamela Norcross; Social and Behavioral Sciences

Teacher-family collaboration is important to a child's success and development. Previous research shows the benefits of various methods of communication, such as on-the-run conferences allowing problems to be addressed the day of the occurrence. I surveyed both families and teachers to better understand the views of both groups on the importance of communication and the effectiveness of different methods used, with a focus on creating an environment promoting diversity. I also asked teachers their length of teaching and extent of training on family collaboration to further understand the effects of experience and training on communication. The most common method of communication desired by parents was apps, such as Remind, while the most common provided by teachers was emails. Both groups seek communication to create collaboration and meet the children's needs, however, teachers also include the importance of creating an equitable learning environment. The teachers surveyed expressed the importance of including each family's culture in the classroom, such as using diverse visual aids, helping children study their cultural identity, and openly discussing similarities and differences. In contrast, parents focused more on values such as respect, acceptance, and approach to education. In regard to the effects of teacher experience and training on communication, each teacher had various amounts of training and experience and saw all of what they had learned as beneficial to their collaboration with families. In conclusion, parents' and teachers' perceptions towards communication varies as portrayed by their views of diversity being incorporated into the classroom.

Identification of Protein Function

Erin Murphy

Research Adviser: Dr. Andrea Carter; Natural and Mathematical Sciences

Proteins are a necessary component of living organisms. Together proteins can function as enzymes, antibodies, structural and contractile proteins, and signals; they are also used in cellular transport. But what are the functions of individual proteins? By utilizing several different computational tools, the sequence and structural components of a protein can be studied to better understand it's probable function and why it is important. In this study I will analyze two different proteins, with unknown functions that have their structures published in the Protein Data Bank. The results of this analysis and future directions will be shared in the CSA Day Presentation.

The Effects of Dietary Patterns on Mood

Kaleigh Paul

Research Adviser: Dr. Gwynn Morris; Social and Behavioral Sciences

A growing body of research has begun to document links between poor diet and negative effects on mental well-being. The purpose of the present study was to investigate how different dietary patterns impact an individual's overall mood. The undergraduate and graduate student participants (N = 60) reported their dietary patterns and answered questions from three established measures of anxiety, mood, and stress. Participants self-reported whether their diets were classified as Western, Mediterranean, Vegan, Vegetarian, Gluten-Free, Ketogenic, and Other. The majority (62%) of the participants reported eating a primarily Western diet. ANOVAs were used to examine the mood differences from the participants by their dietary classifications. The results suggested no statistically significant association between dietary patterns and anxiety $F(6,53) = 0.27, p = 0.95$, mood $F(6,53) = 0.65, p = 0.69$, and stress $F(6,53) = 0.65, p = 0.69$. Although the current study failed to find an association between diet and mood, this may be due to the error of

measure in the diets of participants and the lack of diversity with dietary patterns reported. Further research should be conducted in order to further the understanding detailed dietary consumption that impacts an individual's mental well-being.

Keywords: diet, dietary patterns, mood, anxiety, stress, college students

The Effects of Attachment on Interpersonal Self-Efficacy in Emerging Adults: Postpartum Depression in Mothers as a Moderator

Molly Perry

Research Adviser: Dr. Betty-Shannon Prevatt; Social and Behavioral Science

Postpartum mood disorders can affect mothers and their children (Ackerson, 2003; Behrendt et al., 2016; Fransson et al., 2020; McMahan et al., 2005). A child's attachment to their mother can influence self-esteem and interpersonal relationships (Julal Cnossen et al., 2019; Keizer et al., 2019). The present study hypothesized that secure attachment with mothers would positively correlate with social self-efficacy and self-efficacy in romantic relationships in college-aged children. Maternal history of postpartum mood disorders was hypothesized to negatively impact social self-efficacy and self-efficacy in romantic relationships in college-aged children. Participants (N = 48) completed an online survey assessing maternal mental health history, maternal attachment, peer attachment, social self-efficacy, and self-efficacy in romantic relationships. Hierarchical regression results revealed that history of maternal postpartum mood disorders was not a significant predictor of social self-efficacy, $F(1,42) = 0.23, p = .633$, nor self-efficacy in romantic relationships, $F(1,41) = 1.43, p = .238$. However, current maternal communication did significantly predict social self-efficacy ($\beta = 1.12, p = .047$) where higher communication scores increased social self-efficacy. Maternal alienation was a significant predictor for self-efficacy in romantic relationships ($\beta = 5.86, p = .008$) where greater alienation resulted in stronger romantic relationships. Findings suggest that college-aged

adult functioning is more impacted by their current relationship with their mothers than a history of maternal postpartum mood disorders in their childhood. While reassuring, these findings do not align with existing literature. Therefore, additional research should explore the nuanced relationships between maternal mental health, attachment, and young-adult self-efficacy.

Batrachochytrium Salamandrivorans and the Susceptibility of North Carolina Salamanders

Jessica Ponimansky

Research Adviser: Dr. Megan Serr, Natural and Mathematical Sciences

The world is in a current biodiversity crisis encompassing a sixth mass extinction event potentially affecting the entire order of Urodela. A newly discovered pathogenic fungus, *Batrachochytrium salamandrivorans* (Bsal), was first detected in the Netherlands in 2013 and then in neighboring countries in 2014. Currently, it appears to be spreading across Western Europe causing a dramatic increase in mortality rates for several salamander species. Fungal infections with Bsal, a type of chytridiomycosis, are considered one of the major drivers of global amphibian population declines. This new chytridiomycosis, Bsal, has not yet reached the United States but is currently being monitored. To inform this investigation, a literature review on the histological morphology of salamander dermis is being completed. The review will investigate the Urodela dermis and its histological features. Further, a research investigation of North Carolina salamander families will be conducted. North Carolina was chosen as the region of study due to high salamander diversity and species endemism. In this study, we will microscopically examine the morphological characteristics of the dermis to compare differences seen within and across several families. The goal is to sample several salamander species from each family (Plethodontidae, Proteidae, and Ambystomatidae), to try and detect features that might inform us about Bsal susceptibility.

As this pathogenic fungus has the potential to create havoc on our North Carolinian salamander populations it is important for researchers to be aware of salamander dermal features and their potential susceptibility to Bsal infections.

Analysis and Determination of Protein Function as Related to Structure

Kendall Putnam

Research Adviser: Dr. Andrea Carter, Natural and Mathematical Sciences

Using computational tools, it is possible to gain insight into a protein's function based upon its structural and sequential components. This is because proteins containing homologous structural and sequential components are more likely to share the same or similar functions. The primary goal of this research project was to propose a function for a particular protein with a known structure. Using online databases such as ProMOL, BLAST, Pfam, Dali, Moltimate, and PyRX, this project has examined the motifs and homologous components of proteins with known functions in order to compare them to the proteins whose function will be determined. The protein that was analyzed and assigned a function throughout this project is 4Q7Q. 4Q7Q is commonly found in soil bacteria *Chitinophaga Pinensis*, and its structure was determined by the Midwest Center for Structural Genomics as a part of the Protein Structure Initiative. It was found that protein 4Q7Q belongs to the GDSL hydrolase family, most likely the class responsible for cleaving carboxylic ester bonds. The proposed function of the protein is as an acetyl-xylan esterase, an enzyme that catalyzes the deacetylation of xylans (or xylo-oligosaccharides); however, the results were not entirely conclusive and require further experimentation within the traditional lab setting.

Examining How Instructional Strategies in Music Education Classrooms Support Students on the Autism Spectrum to Develop Positive Social Skills

Grace Raphun

Research Adviser: Dr. Cecelia Toole; Social and Behavioral Sciences

The connection between music and the positive effects that the music classroom can have in the development of social skills for children with Autism Spectrum Disorder (ASD) is directly related the instructional strategies of the educator in the music classroom. For students with ASD, developing social interaction skills early can promote development of a fuller set of social and emotional skills over time. In each grade span, there are different positive and negative social skills that may be observed and instructional strategies that teachers can use to potentially change a negative social skill behavior to a positive social skill behavior.

For this study the researcher observed an elementary music teacher teaching several different grade levels, and recorded which instructional strategies used by the teacher were more effective in changing negative social skills behaviors. Observations of the teacher's instructional strategies occurred preceding, during, and following the social skill behavior. Data was collected and organized for students in Kindergarten through second grade, and for students in third through fifth grades. Charts were used to document positive and negative social skills, instructional strategies that correlate with those skills, and instructional strategies that were actually implemented. The correlation between the instructional strategies that precede and reinforce each positive and negative social skill were the focus of this study.

Women in Politics: Activism and Feminism According to North Carolina Women of Color

Inaya Rivera and Madison Weiss

Research Adviser: Dr. Daniel Fountain; Arts and Humanities

In the summer of 2021, Inaya Rivera and I took

part in an oral history research project alongside the Legacies of American Slavery Initiative of the Gilder Lehrman Center for the Study of Slavery, Resistance & Abolition. We interviewed a number of African-American women and women of color who had engaged in some form of activism and/or civic engagement. The documentation of these oral accounts allowed us to survey the diverse backgrounds of women of color in North Carolina. Their backgrounds, while each unique and incredible, played a huge role in propelling them to become activists. We would like to display the stories told by these women, as well as the different forms of politics, activism, and civic engagement that they have taken part in.

We would also like to offer students and faculty the opportunity to view the wide array of interpretations of feminism within our community. Interestingly, we found that many women of color did not identify themselves as feminists despite their involvement in advancing women's rights.

Our presentation will be informational and inspiring. Oral history is such a unique way to document and preserve our history as it is raw and keeps its emotional edge.

El Chamamé

Antonella Rosales

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

For this presentation I'm researching El Chamamé, which is a genre of Argentinian folkloric music. El Chamamé has Guaraní Indigenous roots mixed with Jesuitic-Spanish, and most of all German influences. The genre is geographically located in the North East part of the country (El Litoral), mesopotamian region between the Paraná and Uruguay Rivers. In this region, commonfolk speak a mix of Spanish and Guaraní and the genre is often interpreted in this language mix or completely in the Guaraní language.

In this research, I'm aiming to cover the origins of this genre, the transformation of the musical instruments used to play it, the characteristic phonation called "Sapucaí", and the whole cultural aspects that make this music a way of life for the

“Chamameseros” (cultural identity). This music generally is used to express emotions and faith. Love, Friendship, and Nature are common themes in El Chamamé. There exist different types of Chamamé, slow and sentimental (Chamamé Cangí) and Energetic with pulses (Chamamé Maceta), common in festivals and clubs.

I would like to present this music genre hopefully increasing the knowledge and appreciation for this music of the Eastern part of South America, that is not always as recognised as the Andean music (Ex:Huayno, Mornada, Carnavalito, ect.). Regardless, the cultural value of the genre has been globally recognized since El Chamamé has been inscribed on the Representative List of the Intangible Cultural Heritage of Humanity by UNESCO in 2020. I personally find the genre engaging and musically rich.

Music of Egypt

Ayeh Samour

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

For CSA, I am researching the music of Egypt; including instruments, vocal sounds, dance, and styles of new/modernized Egyptian music. I will be discussing how music plays a role in the daily life of Egyptian people and the use of music in the culture. Through this research I will investigate the most important instruments in Egyptian music and analyze how they compare to previously discussed music that we have studied in class. From these studies, I will find the unique voice each of these different instruments contain. To do this, I will provide sound examples of these instruments and how they are used in the life of Egyptians. In class, we have already studied music from several other cultures that are used for ceremonies and expressing moments of happiness. I want to introduce the audience to music they are not familiar with and really how music was used as a form of expression in the ancient days, as well as deep culture reasonings. Thus far in my research, I found new instruments like the Menit Necklace that is more like a literal necklace with beads that

the “performer” would wear and dance with, so that it would create a sound from the shaking of the person body. While viewing modernized versions of Egyptian music, I would like to bring back into light the ancient and cultural dances and instruments that have been buried after all the historical time. To conclude, I am excited to show more in-depth and hopefully secretive things about Egyptian music that will teach viewers new things about the culture.

Belongingness of Transgender Students on College Campuses: The Impact of Professors Introducing Personal Pronouns in the Classroom Setting

Mia Shelton

Research Adviser: Dr. Betty-Shannon Prevatt; Social and Behavioral Sciences

Belongingness is a basic human need essential for well-being and mental health (Baumeister & Leary, 1995; Hatchel et al., 2018). Belongingness requires that people feel like a necessary part of their environment (Asher & Weeks, 2013). People in minority communities are vulnerable to lower belongingness compared to their peers in majority groups, and this is particularly true for members of the gender-diverse community (Valentine & Shipherd, 2018). The present study examined the impact of professors including their pronouns in their course introductions on student sense of classroom belongingness and perception of faculty diversity acceptance. Participants (N=68) from a small women's college were recruited to complete an online survey consisting of two transcripts of a hypothetical professor introducing herself: one included her pronouns and invited students to share theirs, while the other did not mention pronouns. After reading each transcript, participants completed the College Belongingness Questionnaire (Asher & Weeks, 2013) and a modified version of the Classroom Diversity Climate Scale (Grover et al., 2020). Paired samples t-tests revealed that the transcript with pronoun use yielded significantly higher belongingness scores, $t(67)=2.70$, $p=.009$, and perceptions of faculty

diversity acceptance, $t(67)=4.49$, $p<.001$, compared to the transcript without pronoun use. Findings indicate that faculty introducing their personal pronouns and prompting students to do the same can increase belongingness among students in the classroom and student perceptions of the faculty member as accepting of diversity. This intervention is easy to implement and could improve well-being and retention of college students.

Properzia de' Rossi: Femininity, Fruit Stone Sculpting, and Fine Art

Sarah Shields

Research Adviser: Dr. Beth Mulvaney; Arts and Humanities

Properzia de' Rossi, an Italian Renaissance sculptor, was a rarity largely due to her status as a woman. Very few female artists are noted in discussions of the Italian Renaissance, yet she has been recognized for her sculptural mastery since the early sixteenth century. Though she was accomplished in sculpting marble like other renowned Renaissance artists, she had an affinity for miniature carvings, which are unlike any other pieces of her time. I analyze these works through a feminist interpretation in order to understand Properzia's personal identity as a female sculptor, which highlights the harmonious union of different art forms and challenges the notion that fine art manifests only through painting and large-scale sculpture. Paired with decorative elements, Properzia's miniature sculptures create artistic anomalies. These unions may not have been accomplished without the stereotypes between men and women during the sixteenth century. Properzia's status as a woman certainly impacted the opportunities available to her as an artist and influenced how she created her work, which provides a view into what life may have been like for other women artists of the Renaissance, those named and unnamed.

Indonesian Instrument Tuning- and the Reasons Behind it

Eliandras Sims

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

While the music of many far away nations to us sounds completely unorganized, there is a pattern and reason that we just aren't familiar with. Through being exposed to these diverse harmonies, we gain an understanding of sounds that are outside of our norm along with the cultures that are connected to it. The music of Indonesia is one such country that has an extremely unique sound and tuning. I will research various tuning of Indonesian instruments, the stories behind them, and how each individual/group makes them unique. Through my research, I will be able to increase people's interest in the music of Indonesia. I will be expanding upon information garnered from a brief lesson that we received in the Global Music Seminar on the Javanese Gamelan and two of the many tuning systems. The tuning systems of Indonesia vary in the number of pitches and the intervals between them. This is different from Western music as we have 7 note scales, and 12 note scales that typically don't differ from place to place. In my presentation I will be including a brief comparison of a western scale with the scales I am studying to accommodate for those who may not be familiar with how western musical scales work as well. In this presentation, I strive to spark interest in exploring music outside of what we are all comfortable with and learn to understand other cultures.

Exploring Hispanic Nationalism in the United States

Olivia Slack

Research Adviser: Dr. David McLennan; Social and Behavioral Sciences

This study seeks to determine whether a significant number of Hispanic/Latino individuals in the U.S. feel similarly nationalistic as white Americans. It was hypothesized that a strong minority of Hispanic/Latino individuals will favor racial exclusion, and that

these feelings will likely stem from the same kind of racial resentment that white nationalists feel. Data from the Pew Research Center's 2018 National Survey of Latinos was analyzed to determine whether dependent variables of support for racial exclusion or anti-immigration policies and party affiliation or support for Donald Trump were influenced by demographic variables. Questions about immigration policies were used because nationalism often coincides with xenophobia in the U.S., and anti-immigration rhetoric is prominent among nationalist leaders. The hypothesis was supported, with 20.3% of participants favoring expanding the wall along the U.S.-Mexico border, and 26% believing there are too many immigrants in the U.S. Overall, Hispanic men, older people, or people who identified as Republican or evangelical Christian or Catholic were the most likely to feel nationalistic or highly conservative. However, the data also indicated that Hispanic/Latino individuals in the U.S. were still less likely than white people to indicate nationalistic feelings.

Math Anxiety

Grace Snipes

Research Adviser: Dr. Cecelia Toole; Social and Behavioral Sciences

Math anxiety has been described as experiencing feelings of anxiousness when asked to solve a mathematical problem. Research shows that math anxiety can interfere with math performance in the classroom. While most Americans use simple operations, such as addition, subtraction, multiplication, and division, many people want to avoid having to perform advanced mathematics in their everyday lives. The purpose of this study is to understand the frequency of students developing math anxiety and learn if this is affecting their future career or educational decisions. A literature review will be conducted, followed by an online survey via google forms that will be sent out to Meredith College students. I will also use my placement at South Garner High School to gather information from my placement teacher regarding the teaching strategies used to prevent math

anxiety. I will then analyze my data by identifying whether math anxiety correlates with students' future career and educational paths. I hope to find that while math anxiety may affect some student's future decisions, there are strategies educators can use to help these students overcome their fear, or apprehension, about math.

Exploring Edna's Identity as Outcast and Agent in Othering at Grand Isle

Maria Solorzano

Research Adviser: Dr. Jennifer Burgess; Arts and Humanities

In Kate Chopin's *The Awakening* (1899) the main character, Edna Pontellier, plays the roles of an outcast as well as an active agent in the Othering of various characters in the novel. By examining the novel within the cultural and historical contexts in which Chopin composed it, this thesis provides an analysis focused on the racial and class dynamics and disparities at play in the narrative. The thesis illustrates that although she can relate to the Othered characters because she feels and is treated like an outcast, Edna—as an upper-class white woman—still plays an active role as an agent in Othering. Her involvement in Othering and the labor and exploitation of those whom she Others ultimately allow Edna to explore her newly found identity and break free of the societal norms that have stifled her.

How Casting Entities Can Move The Theatre World To A More Progressive Stance Or Keep It Stagnant

Emily Spain

Research Adviser: Dr. Steven Roten; Performance/Artistic Productions

Overtime, theatre has become a place of escape for people. Actors use it as a chance to escape who they are, and audiences use it as a chance to leave reality. Theatre can be used in so many ways, not just to escape reality, but to help lead social changes in the world. Sadly though, theatre is not a safe place for everyone and can be more of a place of isolation than acceptance or escape. For some theatre can be seen as rejection because they are not only

underrepresented on the stage, but in history they have been made fun of on the stage. People of color walk into an audition knowing that the audition could go in drastically different directions, they could be greeted with open arms or cut before they are even given a fair chance. Throughout the years, there has been a slow increase of acceptance for people of color by casting agents and producers but there have also been agencies reluctant to change their ways. They are often casting based on skin color, versus the talent of the actors auditioning. The big topic in theatre right now is how casting entities can move the theatre world to a more progressive stance or keep it stagnant. I would love to see the casting of productions be based on actual talent and what the actor brings, versus what has been done in the past or wanting a specific "look" for the character.

Chilean History And Its' Way Of Showing The Power Of Music

Cynthia Styron Sanchez

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

This presentation will discuss Chile's unique musical history and cultural background, which has had a great impact on the music played in South American countries today. The different instruments, genres, and styles of Chilean music are so distinct to other parts of the world, making it a gem to learn about. I will be focusing my research on the full story Chile has to offer; the countries it has got musical relations with, the beauty of how it's most famous music (cueca) came to be, and how Chilean music has become an important part of South American culture.

One of the significant movements of Chile is known as Nueva Canción. It began in the 1960s in Chile, Argentina, Uruguay, and Cuba, touching on political and social struggles, and though Latin America found ways to express these issues through music. It hadn't been more direct than in Nueva Canción. Artists were murdered, exiled and suffered arrest for taking a stand with the art they would

create. However, the beauty of this is the hope that arose due to it.

Nueva Canción not only addressed the issue, but created change. Internationally it made a difference in governments all over the world. This is a message for everyone to see how inspiring music can be, and how much it has been a part of history. One can make a change and music can be a big help in one's effort of doing so, therefore, it is important for everyone to understand this.

Georgian Music: Songs in the Mountains

Julia Sullivan

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

The country of Georgia has an extensive history of music that has evolved into three genres: art music, liturgical music, and traditional music. Each genre has their own established forms, styles, and functions. Art music contains the classical music practices of Georgia, liturgical music comprises the chants of the Orthodox Christian Church in Georgia, and traditional music includes the hundreds of years of Georgian folksong. Traditional music has greatly influenced both art music and liturgical music. While many are aware of Georgia's geographic closeness to, and, therefore, minor influences from, Russia, Georgia's musical history and traditions still remain very distinct. This presentation will, with the desire to spark greater interest in the rich music traditions of the country, highlight the three types of music, especially traditional, in Georgia, the instruments of Georgia, and how Georgian music is used in society. Research from scholarly papers and institutes points to Georgian choral polyphony, specifically polyphony in three parts, as a unique part of the music history. Each part, or voice, has a specific name, and this is not only a feature of three-part polyphony, but also in larger, more complicated vocal works. Vocal music, in general, is the most common form of musical expression throughout Georgia. There are several notable differences between Western and Eastern Georgia in vocal music, as well as in instruments and the use of text.

This presentation will bring to light a musical culture largely unknown to the Western world.

The Symbolism and Imagery of Gender Inequality: Color and Time in Federico García Lorca's *La casa de Bernarda Alba*

Maria Teakell

Research Adviser: Dr. Jonathan Wade; Arts and Humanities

Federico García Lorca's *La casa de Bernarda Alba* is known for its use of discreet imagery and symbolism, specifically the color white and the concept of time. García Lorca uses color and time to represent the gender inequality that prevailed in Spain during the first decades of the 20th century. Before the play even begins, the list of characters highlights the various ages of Bernarda's five daughters, a fact that will animate the various tensions within the work. During the opening scenes, the reader/spectator learns that Bernarda's second husband has passed away, a reality she would have her five daughters observe by dressing in black for an excessive period of eight years. The color white shows up in many different ways throughout the play, including in the title and main character of the work, as a euphemism for the sexual purity expected of the female characters, and as a sign of cleanliness for the entire house, to just name a few. In each of these instances, whiteness is a demand placed only on female characters. The concept of time appears within the play as a marker of inequality as well. Besides the eight years of mourning and the characters' ages, several other references to time highlight the disparities between men and women, including the bells that invite the confined women to contemplate male freedom and their ability to work the fields. García Lorca invites his audience to feel the frustration of his female characters by confronting them with a reality that is at least, unfair, and at most, fatal. The female characters express the inequality of women in the 20th century through countless aspects of imagery and symbolism within the play.

The Faces of Circe: Enchantress, Seductress, Goddess

Krista Telford

Research Adviser: Dr. Robin Colby; Arts and Humanities

First introduced by Homer in his 8th century B.C. epic *The Odyssey*, the mythical figure Circe has fascinated readers for centuries. Although she initially appears as the quintessential evil enchantress who uses spells, potions, and seduction to inflict suffering on her victims, Homer complicates this straightforward identity by suggesting possible reasons for her cruel behavior, highlighting her fallibility, and placing her in the contrasting role of caretaker for a significant portion of the story. By leaving Circe's story open-ended, Homer invites authors to interpret her according to their own understanding of the world, and indeed, countless authors from the Middle Ages through modern times have offered their unique portrayals of Circe, each influenced by the prevailing concerns of their period. While many scholars have focused on specific depictions of Circe, I aim to provide a broad overview of her appearances in literature from Ovid's *Metamorphoses* to Madeline Miller's 2018 novel *Circe*. By surveying over a dozen depictions of this mythical enchantress, I identify several prevailing treatments of her identities. Based on these patterns, I argue that the study of Circe is the study of the fears and desires of the authors who portray her and the world in which they lived.

Mariachi: The Quintessential Music of Mexico

Gwyneth Thomas

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

In this presentation, I will introduce my audience to the music of Mexico, with a specific focus on mariachi music. I seek to explore the unique facets of the music and to create a better understanding of its impact on Mexican culture, life, and even its influence internationally. I desire to explain the influences on Mexican music from other cultures and nations, and the influences that Mexican music puts on the world.

In this research, it is my desire to introduce music that my audience may not be familiar with, and to bring about a greater appreciation for music that they have likely heard before. I have found that mariachi has had a strong impact on the culture of many regions in Mexico, most notably the state of Jalisco. The significance of this music is surprisingly far-reaching, as it appears in everything from Mexican restaurants to American media. Personally, I find mariachi to be beautiful, romantic, and complex—something that I intend to listen to again and again.

Songs of Knowledge: An Exploration of the Music of Indigenous North America

Sarah Ella Trustman

Research Adviser: Dr. Jean Wozencraft-Ornellas; Performance/Artistic Production

Native American music is diverse and complex, yet purpose remains the same: imparting knowledge and strengthening community. Across tribes, music plays a vital role in daily life and survival, due to song's involvement in knowledge retention and transmission.

I will explore the six style areas found in North American music. As Native American music is primarily vocal, focus will be given to vocal production, range, and melody. Metre, scale, use of text, phrase structure, and instrumentation will also be compared. While these aspects vary, there are many unifying elements found in Native American music, specifically in purpose and context. American Indigenous cultures are primarily oral. For this reason, music acts as a mnemonic and holds the collective knowledge of the tribe. Therefore, music has great value and is passed down through initiation, apprenticeships, and inheritance.

Each song contains a piece of the knowledge required to live in the varying terrains found across America. While compositions are owned by individuals, music is considered greater than self and therefore performance is a gift to the community, with true meaning understood by the initiated. Often Indigenous music is misunderstood

by the uninitiated as mysticism and hocus, because outsiders are unable to translate the music into the information contained.

Native American music is some of the most rhythmically and thematically complex in the world. Within each song, layers of meaning impart great knowledge...knowledge that is being watered-down and lost. Native American songs are not lacking; rather, our understanding is.

Building an app in Xcode

Abigail Turner

Research Adviser: Dr. Kristin Watkins; Natural and Mathematical Sciences

Mobile application development is a rapidly growing field in the world of computer science that involves a wide and varied process. The goal of this project was to learn and practice the varying stages of mobile application development, and to create a guide to character creation for Dungeons and Dragons. This project was modeled in Miro, an online visualization tool, developed in Xcode, Apple's integrated development environment (IDE), and coded in Swift, Apple's proprietary programming language. The first stage in this application's development process was modeling the frames in Miro. Once the user interface/user experience (UI/UX) model was complete, the next task was to learn both Swift and the controls and features of Xcode. The data also needed to be categorized and rationalized before it could be incorporated and developed into a fully functioning algorithm. The rest of the time was spent instantiating this data and information and actualizing the UI/UX model. The final product was a mobile application that stores and displays fully responsive Dungeons and Dragons character information, guides users through the character creation process, and allows users to create a fully customizable Dungeons and Dragons character.

The Effects of Birth Order on the Big Five

Paige Verica

Research Adviser: Dr. Andrea McPherson; Social and Behavioral Sciences

The situations that accompany birth order positions have implications on the Big Five personality traits of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. A meta-analysis of studies on birth order revealed that first borns were high achievers and most vulnerable to stress. Middle children had the fewest acting out problems and related well to older and younger people. Last borns were found to be the most rebellious and empathetic (Eckstein et al., 2010). Based on research of existing studies, the current study hypothesized that last borns would be the most open to experience, extraverted, and agreeable while first borns would be the most conscientious and neurotic. Participants (N = 81) were separated on the basis of birth order position then completed the Big Five Inventory-2 (Soto, 2017). Five one-way ANOVAs of birth order position by each trait in the Big Five, revealed that first borns were the most extraverted; $F(2, 78) = 8.667, p < 0.05$. Limitations and possible explanations for no other statistically significant findings are explained later in the discussion.

COVID-19 Vaccine Hesitancy Among College Students and Staff

Stephanie Wairagu

Research Adviser: Dr. Carolina Perez-Heydrich; Social and Behavioral Sciences

Vaccines have long been a controversial topic. Despite their ability to provide herd immunity in a less riskier way compared to actually contracting a disease, some people remain hesitant about getting vaccinated. The purpose of this study was to identify perspectives expressed by individuals who self-identified as being hesitant towards COVID-19 vaccines. The study further sought to assess factors that influence attitudes towards COVID-19 vaccines and to understand how people go about making personal decisions about vaccination. A systematic review of peer reviewed literature was carried out

to interpret different aspects of vaccine hesitancy such as factors that increase hesitancy and ways to gain public confidence. The study involved the use of an anonymous survey through Google Forms to collect views of Meredith College students and staff. Participants were asked about their perceived risk and severity of COVID-19 infection, sources of credible information, concerns about the available COVID-19 vaccines, views on safety and efficacy of vaccines, and whether any incentives would encourage them to get vaccinated. Some common themes identified among the participants' concerns include: lack of FDA approval, the unknown adverse effects of the vaccine, and the short time of research and testing. Overall, results show that different uncertainties about the vaccine need to be addressed thoroughly so that people can understand the science behind vaccines and have confidence in them.

Katniss Everdeen: Feminist Icon in *The Hunger Games* or Upholder of Traditional Gender Roles?

Brooklynn Watkins

Research Adviser: Dr. Jennifer Burgess; Arts and Humanities

For my thesis project, I analyze Katniss Everdeen from Suzanne Collins's dystopian novel, *The Hunger Games*. My research question asked if Katniss defies gender roles, providing readers with an ideal feminist heroine, or if she falls short of providing readers with the ideal feminist heroine. To contextualize the roles of both *The Hunger Games* and Katniss in young adult (YA) literature I provide an overview of YA literature and discuss the importance of providing strong female protagonists for young readers. I additionally examine the sub-genre of YA dystopian fiction, focusing on the status, role, and gendered expectations of female heroines during the early 2000s when *The Hunger Games* was published. I then apply a feminist lens to Katniss, examining what makes her a good female heroine and what hinders her as a good female heroine. I also look at male characters in *The Hunger Games*, such as Peeta and Gale, and analyze how

they adhere to and/or push boundaries within their gender roles. While feminist critics disagree as to whether or not Katniss is an ideal heroine, I conclude that, although Katniss does fall short of embodying the ideal feminist heroine, she is still a strong female protagonist with admirable qualities, and she serves as an important example for young readers.

Representation in Theatre: The Power of Visibility and Equity on Stage

Bliss Wells

Research Adviser: Dr. Catherine Rodgers; Arts and Humanities

People want to be represented in the media, society, and their community. As humans we long to be connected and accepted by the people we care about. Whether it be our family, friends, or our community, there is a want to be seen and heard. Representation has been such a powerful tool for theater today. The impact of theatrical representation has been evident through recent productions and their success on stage and eventually in film. From the stage to the screen there is: *In the Heights*, *Dear Evan Hansen*, *West Side Story*, *Prom the Musical*, *Cinderella*, *Cats*, *Ma Rainey's Black Bottom*, and *Hamilton* (recorded for screening purposes). These musicals and those alike share stories that hold a mirror to not only American society but humanity. In all forms of entertainment, it is critical that children and adults see themselves represented on the stage. In this research presentation, I will explore the impact of representation on marginalized groups by presenting data from current Wake County students and through resources expressing the value of representation.

The Connection Between Career and Family Plans of Meredith Students

Caroline Welsh

Research Adviser: Dr. Anne York; Business and Economics

Historically, women have had to make career related sacrifices in order to have a family and take care of domestic responsibilities. This expectation of women led to occupational segregation and wage inequality because of women's need for a

more flexible work schedule. Since women knew what kinds of fields would best suit their lifestyle, they invested in their human capital accordingly – behavior which can be explained by the Human Capital Model. In modern times, women have been increasingly infiltrating male dominated fields and balancing career and family. So, are women in college still making their career decisions based on how they want to structure their family life? This research explores the Human Capital Model and whether it still applies to young women making career and family decisions today. To test this hypothesis, a survey was sent to Meredith College undergraduate students (n=138) which asked about college major, career, and family plans. Based on responses from these students, the initial findings suggest that Meredith College students' family and career plans are not necessarily connected and challenge the idea of traditional occupational segregation based on future plans for family and children.

Denim Kintsugi: Beauty out of the Breakage

Lila White

Research Adviser: Dr. Eunyong Yang; Performance/Artistic Productions

This design project is an exploration of how the upcycling process can be elevated through advanced construction and fabric piecing techniques. Japanese Kintsugi provides the inspirational force behind the construction process, while current sustainability trends inform the material choice and sourcing. The project as a whole will demonstrate another way to approach sustainability from the standpoint of using existing garments while achieving increased valuation in the final designs.

As companies and individuals push for solutions to waste and pollution issues, sustainability is a key concern in garment design and construction. Concurrent with the development of sustainability practices is a growing popularity of DIY and upcycling projects. With these particular trends, items perceived as lesser or even as trash are re-

evaluated to introduce new value and meaning.

The driving principle of repair and recycling of broken items, however, can be traced back thousands of years to the practices of Japanese Kintsugi. Broken pottery pieces are reassembled and the cracks are covered with precious metal powder/leaf such as gold, silver or platinum. The piece is then reintroduced to its owner as a beautifully mended, restored piece with a potentially greater value from the precious metals used in the repair. DIY and upcycling in particular with clothing can provide similar results.

Denim is a significant candidate for these sustainability efforts, owing to its notorious pollution reputation and its popularity as fast fashion. This project applies the upcycling processes of denim to produce garments favored by consumers who seek to purchase sustainable clothing.

Meredith College challenges students to discover what makes them strong, build on those strengths, and prepare to make a positive impact on the world. With more than 90+ undergraduate academic programs, 30 graduate and certificate programs, and StrongPoints®, a powerful strengths-focused personal coaching initiative, it's no wonder *U.S. News*, *Princeton Review*, and *Forbes.com* have all named Meredith a "Best College." **Wherever you're going in life, lead with your strengths – and go strong.**

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