

**31st Annual
Centenary College Academic Research Conference
Thursday, April 20, 2023**

Each year Centenary students and faculty present their best works of exploration and invention at our annual Research Conference. A community event for over 30 years, the Research Conference is modeled on long-standing academic traditions of conference-based information sharing and feedback.

The 2023 Research Conference is sponsored by the Douglas F. and Marion S. Attaway Foundation and is made possible with the support of Centenary's Convocation Committee, the Office of the Provost, Campus Activities Board, and the Student Government Association.

This year's Research Conference was organized by Dr. Scott Chirhart (Biology), Dr. Jeanne Hamming (English), Dr. Jessica Alexander (Psychology), and Dr. Amanda Donahoe (Political Science). Special thanks to Jeremy Johnson for his graphic design skills, Candace Metoyer for her web skills, and to Connie Whittington for her unwavering support of our students.

Generous thanks to our judges:

- Poster Presentations: Rebecca Murphy, Jarret Richardson, Jeffery Evans, Bethany Hanson, George Tiller, Katherine Weeks,
- Humanities Oral Presentations: Darrel Colton, David Cowles, Bellee Jones-Pierce
- Social Science Oral Presentations: Mohammad Ali, Priyanka Chakraborty, Amanda Donahoe, Amy Friesenhahn, Jama Grove, Amy Hammond, Terrie Johnson, Helen Sikes, Pete Zunick
- Natural Science Oral Presentations: Xiaoxia Zhang, David Kordahl, Russel Rahman
- Creative Writing: Matthew Blasi, Jeanne Hamming, Jeff Hendricks, Rachel Johnson, Emily Leithauser, Chrissy Martin

Winners from this year's Research Conference will be presented with awards at the Annual Honors Convocation on May 5 from 5:30-7:00 pm in Brown Chapel.

Quick View

8:00-9:20 SESSION 1

- 1A. Natural Sciences Oral Presentations (Mickle 114, starting at 8 am)**
- 1B. Arts and Humanities Oral Presentations (Whited Room, starting at 8:20 am)**

9:30-10:50 SESSION 2

- 2A. Natural/Social Sciences Oral Presentations (Mickle 114)**
- 2B. Social Sciences Panel (Kilpatrick)**
- 2C. Arts and Humanities Oral Presentations (Whited Room)**

11-12 Keynote Address (Whited Room)

12:45-1:45 SESSION 3

- 3A. Social Sciences Oral Presentations (Mickle 114)**
- 3B. Humanities Panel (Kilpatrick)**
- 3C. Arts and Humanities (Whited Room)**

2-3 SESSION 4

- 4A. Social Sciences Panel (Mickle 114)**
- 4B. Humanities Panel (Kilpatrick)**
- 4C. Library Panel (Whited Room)**
- 4D. Poster Presentations (Mickle 2nd floor)**

3:15-4:15 SESSION 5

- 5A. Social Sciences Panel (Mickle 114)**
- 5B. Humanities Panel (Kilpatrick)**
- 5C. Arts and Humanities Performances (Whited Room)**
- 5D. Poster Presentations (Mickle 2nd floor)**

4:30-5:45 SESSION 6

- 6A. Social Sciences Panel (Mickle 114)**
- 6B. Humanities Panel (Kilpatrick)**

Dinner in Lot 1 sponsored by C.A.B. and Sodexo

Expanded View

8:00-9:20 SESSION 1

1A. Natural Sciences Oral Presentations (Mickle 114, starting at 8 am)

Moderator: Kathrine Weeks

1. Effect of intrathecal fentanyl dose on the use of anesthetic adjuvant medication for patients who underwent cesarean delivery - Maddie Vacula
2. Qualitative to Quantitative: Optimizing an SOP - Bryn Jenkins
3. Effects of Prenatal Opioid Exposure - Camryn Hebert
4. Evaluating Self-Masked Aldehydes for Free Aldehyde Content – Haley Bordelon

1B. Arts and Humanities Oral Presentations (Whited Room, starting at 8:20 am)

Moderator: Jessica Hawkins

1. “Radical” Black Femininity and White Desire in “Reena” - Emily Moreno
2. Identity and Advertising Campaign for the Shreveport Railroad Museum - Mackenzie Newlan
3. The Meaning in Art: The Philosophy of Artistic Aesthetics - Anna DiMaggio

9:30-10:50 SESSION 2

2A. Natural/Social Sciences Oral Presentations (Mickle 114)

Moderator: Amy Hammond

1. Park Interpretation: The Who, The What, and The Why - Siobahn Stanley
2. Conformity in Social Media - Kennedy Stephens
3. No Child Left Behind? Early Child Education’s Role in Development - Natalie Taylor-Watkins
4. A Closed Mouth Might Get Fed: Analyzing Mainstream Media’s Depiction of Kaepernick’s and Kanye’s Differing Social Views - Markiese Boykin

2B. Social Sciences Panel (Kilpatrick)

Moderator: Barbara Davis

Topic: Student Managed Investment Funds

1. Mid to Small Cap & Alternative Investments - Payton Lii and CJ McCulloch
2. Large Cap Funds - Seth Thomas & Jake Bennett
3. International & Fixed Income Funds - Alexis Rostand & Colton Howard

2C. Arts and Humanities Oral Presentations (Whited Room)

Moderator: Shea Hembrey

1. Insecurities - Riana Seidenberg
2. Mori - Jan Gary
3. Fernweh - Sophia Romanski

11-12 Keynote Address (Whited Room)

Chemistry, Capitalism, and the Commodification of Nitrogen: A Global History of an Alabama Cotton Patch

Dr. Christopher Morris

Department of History, University of Texas at Arlington

12:45-1:45 SESSION 3

3A. Social Sciences Oral Presentations (Mickle 114)

Moderator: Amy Friesenhahn

1. Gender and Governing Bodies: The Intersection of Legal Precedents and Sociological Processes - Lauren Warren
2. Soldaderas: Las Mujeres Feroces de la Revolución Mexicana (The Fierce Women of the Mexican Revolution) - Emily Moreno
3. Evaluating Public Attitudes towards Constitutional Provisions in Kosovo - Visar Rraci

3B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: African American Civil Rights

1. The Development of Black Barbershops into Safe Spaces- Camren Hahn
2. Historiography of Racial Health Disparities - Jazzmyn Jones
3. Race and Class in Texas Timber - Ian McDonald
4. New Orleans and the Development of Jazz - Paden Sisterhen

3C. Arts and Humanities Panel (Whited Room)

Moderator: Michelle Glaros

1. Patriarchy, Patriotism, and Power: An Ideological Analysis of "V-J Day in Times Square" - Mackenzie Newlan
2. Gustav Holst: Imperialism and India - Zane Harper
3. Remembering Heritage: United States History as Told by the UDC - Christine Goodman

2-3 SESSION 4

4A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: American Politics and Policy

1. Family Background and the way it Influences a Persons' Political Values- Ann - Elizabeth Knight
2. Effects of Changes in Gun Control Policy on the Frequency and Severity of Mass Shootings - Remi Miller
3. Rural Opinions on Economic Social Programs and Tolerance for Political Education and Outreach - Brenlyee Meaux

4B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: Re-examining Established Historical Perspective

1. The Social and Political Effects on Drag in British Theatre during the Elizabethan Era - Ophelia Scott
2. The House of Medici: Power, Influence, and Beliefs - Debra Brown
3. The United States and the Independence of Kosovo: Examining US Foreign Policy, Diplomacy, and Military Intervention in the late 20th Century - Visar Rraci

4C. Library Panel (Whited Room)

Moderator: Patrick Morgan

1. The Effects of Political Values Upon Corporal Punishment - Jaeda Moreno
2. What do you think of when you think of your grandma? - Tyler Brents
3. Language and thinking - Dani Kimmey
4. What makes a successful urban legend? Memes, Skinwalkers, and Slenderman - Serena Sellers

4D. Poster Presentations (Mickle 2nd floor)

Moderator: Scott Chirhart

- 1A. Phenotypic analysis of sORF-containing lncRNA mutants using low and high throughput techniques - Mali Simmons
- 2A. Effects of BABA on Pathogen Susceptibility - Lauren Hall
- 3A. Treatment of Root Knot Nematodes with Essential Oils - Anton Pelto and Brian O'Hart
- 4A. Computational methods for development of arbidol as a fusion inhibitor of the novel coronavirus - Alireza Moosavi Behbahani
- 5A. Modeling and Applications with the Hodgkin-Huxley Model - Porter Boudreaux
- 6A. The Effect of Diverse Representations on Feelings of Belonging - Casey Swize, Isabella Brown, Yosajandy Bouslog
- 7A. The Elrod Exhibit - Anna Jane Storms
- 8A. Absorption and Fluorescence Measurements of Chlorophyll with SpectroVis Plus - Maddie Vacula
- 9A. The Role of STAT1 in HCMV Persistence - Melissa Krzywanski
- 10A. Screening *C. elegans* proteins for their interaction with Deprenyl - Cassandra Halford and Emily Reid

3:15-4:15 SESSION 5

5A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: *Single Case Studies in Politics*

1. The Race for Global Supremacy: Chinese Biotechnology and U.S. Security - Renee Katz
2. How soft power can be affected by hosting mega-events: a case study on the 2022 FIFA World Cup in Qatar - Sami Borchalli
3. Ethnonationalist Ideology and the Escalation of Radical Group Violence: Case Study of the January 6, 2021 Attack on the United States Capitol - Kylie Walker

5B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: *The Expanded Civil Rights Movement*

1. Between Tradition and Americanization: The Cajun People Through the Twentieth Century - Julie André
2. The Fearful World Before Roe v Wade - Avery Cauley
3. How Government Involvement Affected Indigenous Activism - Jessica Cordova

5C. Arts and Humanities Performances (Whited Room)

Moderator: Matthew Blasi

1. Zeak Monroe Buckner Writing Award Finalists:

- Joel Cardenas-Lopez - "A Florid Argument for Being Cold"
 - Phoebe Cragon – "Garden-Variety Pests"
 - Emily Moreno – "Es 'mande,' no es 'what'"
2. Audrey M. Smith Endowed Poetry Award Finalists:
- Phoebe Cragon - "Beak"
 - Jordan Fong - "1099s and Ice Cream Truck Jingles"
 - Jerney Harms - "Daughter's Mother"

5D. Poster Presentations (Mickle 2nd floor)

Moderator: Scott Chirhart

- 1B. Investigating the functional roles of long non-coding RNAs in seed germination and seedling development - Regan Griffin
- 2B. Genetic Alteration of Rab 7 in Radishes When Introduced to *Ustilago maydis* - Sarah Murphy and Shelby Roy
- 3B. The Effect of TMV on Photosynthesis - Summer Faust and Brittany Lee
- 4B. Phenolic Compound Production from Pathogen-Induced Plant Communication - Tarif Islam, Jonathan Okereke, and Alireza Moosavi
- 5B. Hydrogen Sulfide from Cystathionine- γ -Lyase in DNA Damage Response - Cameron Cason
- 6B. Effects of Cell Phone Use During Green Exercise on Immediate Emotional State - Marco Basteris
- 7B. The Evolution of a Common Man - Anna DiMaggio
- 8B. Calibrating Millikan's Oil Drop Apparatus - Michael Smith
- 9B. Optical Rotation by Chiral Molecules - Coby Harris

4:30-5:45 SESSION 6

6A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: Race and Representation

- 1. Racial Health Disparities: The Pathway to Equity - Jazzmyn Jones
- 2. Indigenous Representation: preventing future discrimination - Caleb Smith
- 3. The Right to Vote: the effects of Disenfranchisement on Recidivism - Christine Goodman
- 4. They Don't Want Us to Win: Examining the Effects of At-Large Voting on Black and Brown Communities - Markiese Boykin

6B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: Examinations at the Intersection of Law and Humanity

- 1. Repeating Narratives: CRISPR Technology and American Eugenics - Renee Katz
- 2. How to Cure a Lack of Profit: Advertising Patent Medicines in Early Twentieth Century America - Dani Kimmey
- 3. The Exploitation of Hispanic Immigrants in the 20th Century - Xavier Noyola

Dinner in Lot 1 sponsored by C.A.B. and Sodexo

Full Program

8:00-9:20 SESSION 1

1A. Natural Sciences Oral Presentations (Mickle 114, starting at 8:00 am)

Moderator: Kathrine Weeks

1. Effect of intrathecal fentanyl dose on the use of anesthetic adjuvant medication for patients who underwent cesarean delivery

Presenter: Maddie Vacula

*Research Advisor: Drs. Kathrine Weeks¹, Mike Hofkamp², EE Sharpe², K. Hammonds²
Chemistry, Centenary College of Louisiana¹ and Baylor Scott & White Temple Hospital²*

The inclusion of an intrathecal fentanyl dose in cesarean delivery (CD) has proven to be beneficial¹, but the effect of increasing the dose on the use of anesthetic adjuvant medication is unknown. Increasing the dose of intrathecal fentanyl for CD might improve intraoperative pain control and decrease use of anesthetic adjuvant medication. We hypothesized that a lower percentage of patients who received a higher dose of intrathecal fentanyl in their spinal for CD would need anesthetic adjuvant medication. Patients who had a CD at Baylor Scott & White Temple Hospital from February 14, 2021 to February 14, 2023 that received a single injection spinal or combined spinal epidural anesthetic for CD were eligible for inclusion. The low dose of intrathecal fentanyl was considered to be 10 mcg, and the increased dose was considered to be 15 mcg. Data from 1054 patients were included in the final analysis. The patients who received a 15 mcg dose of intrathecal fentanyl show a statistically significant ($P = 0.01$) decrease in usage of anesthetic adjuvant medication.

2. Qualitative to Quantitative: Optimizing an SOP

Presenter: Bryn Jenkins

*Research Advisor: Dr. Katherine Weeks
Chemistry, Centenary College of Louisiana*

When running or working at a company, it is important to analyze your own products, competitor products, and customer desires to remain relevant. If there is a physical product being produced, this product must be tested for quality, effectiveness, and whether it aligns with the market; to do this and ensure a uniform product evaluation, procedures must be optimized and followed. Summer 2022 I held an internship position at ITW Car Care, where I completed research and development projects related to procedure writing and competitor products. During my time at ITW, my objective was to develop a solely quantitative procedure for evaluating the effectiveness of multi-surface interior cleaning products. At ITW, existing procedures for evaluating these products relied heavily on qualitative analysis,

which can result in vastly different conclusions depending on the person running the tests. To remove the qualitative, visual assessment and create a quantitative evaluation of interior cleaning products, I performed research on the chemistry of stains (soils) and the surfaces they may stain (substrates). Apart from the stains themselves, the method of reproducing specific stains and measuring the cleaning efficiency of the product was also thoroughly researched. Through many iterations of both instrument alterations and stain-substrate pairings, I wrote and optimized two procedures for testing the efficiency of interior cleaning products. These procedures are being used internally to assess and compare both ITW's interior multi-surface cleaning products and those of competitor companies.

3. Effects of Prenatal Opioid Exposure

Presenter: Camryn Hebert

Research Advisor: Dr. Jarret Richardson

Neuroscience, Centenary College of Louisiana

Around the world, opioid use has increased exponentially; The National Institute on Drug Abuse reports that in 2021 opioid overdose caused 80, 411 deaths. As opioids have become more prevalent in the last twenty years, researchers have begun evaluating the effects of opioid exposure on infant brain development and developmental benchmarks. The data from their research suggests that prenatal opioid exposure has significant short and long-term effects. This paper will analyze previous and current findings to draw conclusions about the effect on development based on opioid exposure.

4. Evaluating Self-Masked Aldehydes for Free Aldehyde Content

Presenter: Haley Bordelon

Research Advisor: Drs. Joshua Lawrence¹ and Tom Meek²

Chemistry, Centenary College of Louisiana¹ and Department of Biochemistry and Biophysics Texas A&M University²

Cysteine Proteases are a family of enzymes common among diseases such as malaria, chagas disease, and covid-19. Two prominent members of this family include 3CL protease and Cathepsin L which are essential to the life cycle and cellular uptake of Sars-Cov-2 respectively. Ideally, the discovery of a drug which effectively blocked the function of both enzymes would be a potent drug against Covid-19. Peptide aldehydes react (PAs) with the active site cysteine groups of proteins, effectively reducing the functionality of many cysteine proteases. Indeed, the measured inhibition constants (K_i values) of PAs are generally less than 1 nM. A PA will form a slowly reversible, covalent adduct with the active-site cysteine, known as a thiohemiacetal. Reversible covalent inhibition, as opposed to irreversible covalent inhibition, decrease immunotoxicity when blocking cysteine proteases. However, aldehydes are, largely, too reactive with proteins and cellular nucleophiles and are removed by liver metabolism in humans. Consequently, a novel family of cysteine protease inhibitors known as self-masked aldehyde inhibitors (SMAls) was developed, in which the aldehyde reacts with an adjacent hydroxy group in the same compound to form a lactol, thereby masking the aldehyde until it is opened in the active

site of the target cysteine protease. In this study, we sought to quantify the fraction of free aldehyde existing in the SMAIs in neutral, aqueous reaction buffers. First, we treated a group of PAs and SMAIs with excess levels of phenylhydrazines to convert the aldehyde fraction to phenylhydrazones. We measured the amount of aldehyde by spectrophotometry. Next, we characterized the time courses of the inhibition kinetics of the PAs and SMAIs, as the former display more time-dependent inhibition due to a slower recovery of the bound E-I complex compared to SMAIs. Lastly, we used solvent kinetic isotope effects on thiohemiacetal formation to explore the effects of deuterium and proton transfer steps in the inhibition mechanism. The resulting data allowed us to determine whether a small fraction of free aldehyde in the SMAIs accounts for the observed inhibition or the SMAI itself.

1B. Arts and Humanities Oral Presentations (Whited Room, starting at 8:20 am)

Moderator: Bellee Jones-Pierce

1. “Radical” Black Femininity and White Desire in “Reena”

Presenter: Emily Moreno

Research Advisor: Dr. Bellee Jones-Pierce

English, Centenary College of Louisiana

“Reena” by Paule Marshall is a story that highlights racial trauma endured by the titular character, but exposes the larger scale in which this trauma is experienced. Reena, the protagonist of Marshall’s essay, juggles the intersecting identities of being a Black activist woman in the middle class, exploring the ways in which being a woman of color has disadvantaged her. Marshall successfully represents what it is to be a Black-American woman existing in America through Reena. The character of Reena not only evokes a sense of self-awareness in those around her—she calls attention to the macro-level discrimination and stereotype that Black women in the United States face on a daily basis. This paper will identify the ways in which Black femininity is characterized as radical through the story of a Black protagonist, revealing the power that white desire has over the existence of Black women.

2. Identity and Advertising Campaign for the Shreveport Railroad Museum

Presenter: Mackenzie Newlan

Research Advisor: Dr. Jessica Hawkins

Art and Visual Culture, Centenary College of Louisiana

The Shreveport Railroad Museum is a small local museum that has an outdated logo, minimal social media presence and a dire need for a rebranding and advertising campaign. This identity and advertising campaign was designed to appeal to the two target audiences of the Shreveport Railroad Museum, families (with a kid interested in trains) and history

buffs. The identity and advertising campaigns for the Shreveport Railroad Museum were created to appeal to nostalgia and Americana while employing adjectives like rustic, weathered, and mechanical. The advertising campaign employs the essentials of the identity campaign to reach the Shreveport Railroad Museum's target audience in magazines, outdoor and non-traditional advertising. Both campaigns solve the Shreveport Railroad Museum's problem of an inconsistent and difficult to use identity and a lack of consistent and compelling advertising.

3. The Meaning in Art: The Philosophy of Artistic Aesthetics

Presenter: Anna DiMaggio

Research Advisor: Dr. Christopher Ciocchetti

Philosophy, Centenary College of Louisiana

Artists, performers, and audiences have an issue. Art is in our homes, our cultures, and in every aspect of our lives yet do not fully encounter it. How we interact with art matters. Art becomes more meaningful and personal when we have a framework in which to experience it wholly. Without guidelines to remind us to be attentive to our emotions while listening to music or watching tv, we easily become passive and inattentive to art as a form of emotional communication. The philosophy of artistic aesthetics aids in the communication of our emotions when ordinary language fails us. This presentation will examine the most essential elements of the philosophy of artistic aesthetics and address the issues facing artists and audiences. I intend to offer a flexible framework for artistic aesthetics to provide answers for those struggling in the artistic exchange, while maintaining a level of freedom that art demands.

9:30-10:50 SESSION 2

2A. Natural/Social Sciences Oral Presentations (Mickle 114)

Moderator: Amy Hammond

1. Park Interpretation: The Who, The What, and The Why

Presenter: Siobahn Stanley

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

There are many different types of park rangers that work with our public lands in the United States. These Rangers have different roles working and maintaining the parks, but one specific role that is important for them as public facing employees is interpretation. Throughout this presentation I will explore the topic of interpretation through the lens of environmental recreation and conservation. Interpretation as an idea as well as how different programs are interpretive will be displayed. I will accomplish this by sharing experiences from my internship with Brazos Bend State Park in Texas during the summer of

2022. My internship included trainings in different interpretive practices such as giving education programs and helping run our nature center. I also learned how the park tracked data of their interpretive practices to see the prevalence of interpretation and its reception, so we can see why interpretation is important.

2. Conformity in Social Media

Presenter: Kennedy Stephens

Research Advisor: Dr. Amy Hammond

Psychology, Centenary College of Louisiana

Classic studies, like the Asch experiment (Asch, 1951), show that people conform out of a desire to gain social acceptance and to have an accurate perception of reality. Extensive research has been done on different types of conformity, such as informational or normative social influence, primarily in face-to-face interactions. However, little research has been done on conformity in digital spaces like social media. By design, social media platforms tend to give “power” to certain individuals through likes, follower count, comments, etc. The current research aims to understand how a digital space that enhances a social hierarchy, such as social media, pressures people to conform.

In a Facebook group designed for the study, participants were provided with ambiguous images that could be interpreted in one of two ways (e.g., the viral “black and blue/white and gold” dress of 2015) and unambiguous images that had one interpretation but were designed to seem as though they could be ambiguous. In addition to a control group in which no confederates were used, confederates left comments on the Facebook posts indicating one of two possible answers (option 1 vs. option 2 for the ambiguous images and the right answer vs. a wrong answer for the unambiguous images).

Results will provide insight into informational and normative social influence and reveal the extent to which participants conform in this type of digital space.

3. No Child Left Behind? Early Child Education’s Role in Development

Presenter: Natalie Taylor-Watkins

Research Advisor: Dr. Amy Hammond

Psychology, Centenary College of Louisiana

The first years of life have significant effects on subsequent growth and development. Existing literature has examined how early environmental factors such as pollutants and parental attachment can have lifelong developmental effects. I expanded upon these findings in my own research by focusing on the quality of early childhood education, and I quantified the ways in which it directly impacts psychological and neurological development. Children from impoverished environments are both physically and mentally less developed than children from enriched environments. These findings are intersected with current US policies on early childcare and education. I ultimately found that social programs such as Head Start are not far-reaching enough to aid the children and families who would benefit most from it. These results further demonstrate how environmental qualities cause developmental differences, which aid in perpetuating systemic inequalities.

4. A Closed Mouth Might Get Fed: Analyzing Mainstream Media's Depiction of Kaepernick's and Kanye's Differing Social Views

Presenter: Markiese Boykin

Research Advisor: Dr. Michelle Wolkomir

Sociology, Centenary College of Louisiana

While the mainstream media in the United States serves many functions, this study focuses on the kinds of perceptual frameworks its constructs surrounding elite Black men. High-status affluent Black men, Colin Kaepernick and Kanye West (now known as Ye) used their highly visible public platforms to protest police brutality or to spread racist messages, respectively. My research analyzes how the mainstream media frames Kaepernick and Ye and their two very different social views—one based on racial equality and the other promoting racial inequality and hate—similarly. To collect data on how the mainstream media framed these men, I have collected data from 5 out of the top 10 newspapers based on circulation, including: The New York Times, The Washington Post, USA Today, LA Times, and The Chicago Tribune. For Kaepernick I used articles from September 1st, 2016-September 30th 2016, and for Ye I used articles from October 1st 2022-October 31st 2022, in total I coded 20 articles. This analysis showed that, despite these opposing messages, mainstream media similarly constructed and reshaped the men's messages. Mainstream media presents both men as un-American, radical, and thereby renders their messages suspect. The men are left to defend themselves against claims that they are "extreme," taking focus away from the content of their messages.

2B. Social Sciences Panel (Kilpatrick)

Moderator: Barbara Davis

Topic: Student Managed Investment Funds

Research Advisor: Dr. Barbara Davis,

Frost School of Business, Centenary College of Louisiana

1. Mid to Small Cap & Alternative Investments

Presenters: Payton Lii and CJ McCulloch

2. Large Cap Funds

Presenters: Seth Thomas & Jake Bennett

3. International & Fixed Income Funds

Presenters: Alexis Rostand & Colton Howard

The purpose of the Centenary College Student Managed Investment Fund is to facilitate the academic objective of teaching the theory and practice of managing long-term investment portfolios with annual spending objectives through a real-world environment within the Frost

School of Business. During the course of their working careers, many Centenary business school graduates will accept the obligation to serve in a fiduciary capacity with responsibility for the administration of endowment or pension funds. Accordingly, this fund is used to expose Centenary finance students to investment policy development, asset allocation strategy analysis, investment manager selection and evaluation, and investment performance measurement.

The SMIF began operations on April 23, 2004 with an initial contribution by a Centenary College donor of \$100,000. The SMIF operates under guidelines of a written Investment Policy Statement with a "Spending Rule" of 5.5%. The SMIF is viewed as a separate investment manager within the Centenary College of Louisiana Endowment and Investment Fund. The blended benchmark for the SMIF is: 55% S&P500 / 15% MSCI-EAFE / 30% Bloomberg Barclays Aggregate Bond Index.

Since inception, there have been \$160,081, tax deductible, contributions into the SMIF and \$113,699 investment policy directed distributions to Centenary College. As of December 31, 2022, the ending market value was \$214,173 and the dollar gain since inception has been \$167,791. Since the beginning of operations, the annual compound rate of return has been 6.10% and SMIF blended benchmark return has been 6.57%. (1)

Student presenters will focus on the 2022 returns for the large cap, mid to small cap, international equity, alternative asset categories, and fixed income investment components of the portfolio. Comparisons of the actual returns to the designated benchmarks will be made and explained.

2C. Arts and Humanities Oral Presentations (Whited Room)

Moderator: Shea Hembrey

4. Insecurities

Presenter: Riana Seidenberg

Research Advisor: Dr. Shea Hembrey

Art and Visual Culture, Centenary College of Louisiana

For my Advanced Drawing class, I draw my friend's insecurities. I am broadcasting on four-foot-tall sheets of paper the parts of their bodies that bring them the most discomfort. They volunteered, of course, but this was a very vulnerable situation to put my friends through. On top of that, I'm a perfectionist, people pleaser who is drawing what could potentially create a lot of discomfort for the people I love. This presentation will include the artworks I made, the rollercoaster process of making them, and a discussion of young adult insecurity. I will have quotes from the people I drew and how they reacted to their final artworks. This will be a presentation and also hopefully have an artwork to view in person.

5. Mori

Presenter: Jan Gary
Research Advisor Dr. Shea Hembrey
Art and Visual Culture, Centenary College of Louisiana

Mori explores the effects human society has on the flora and fauna in the Rocky Mountain region. From oil pipelines to poaching and overfishing, increasing threats cause dwindling population numbers, novel diseases, loss of habitat, spread of fire, and risks of extinction. I invite viewers to ruminate on the irreversible damage done to the fragile mountain and tundra ecosystems and consider how to preserve this place of beauty and refuge.

6. Fernweh

Presenter: Sophia Romanski
Advisor Dr. Shea Hembrey
Art and Visual Culture, Centenary College of Louisiana

In grade school, I was That Kid who sat in the back corner by the window and daydreamed about going on grand adventures in magical worlds instead of paying attention to class. Except I rarely sat by the back window because we kids didn't really get to choose our own seats all that often. Mentally, though, I was living the life of every Disney Channel Original Movie protagonist, far removed from all my classmates because I just wasn't like other girls. I still spent my time in class daydreaming, even if my seat was right up front by the teacher.

Those dreams finally have a physical form in Fernweh. The title is a German word that describes the feeling of missing places you've never been. I find it is a more visceral experience than simple wanderlust or wistfulness. It more accurately captures the cocktail of nostalgia, wonder, and child-like optimism I chased while making this body of work. Each piece is a childhood dream made manifest. They act as windows not only into another world but into my imagination.

Fernweh is an eclectic collection of childhood dreams that functions as an escape from an increasingly dismal, frustrating, and catastrophically stressful reality.

11-12 Keynote Address (Whited Room)

Chemistry, Capitalism, and the Commodification of Nitrogen: A Global History of an Alabama Cotton Patch

Dr. Christopher Morris
Department of History, University of Texas at Arlington

12:45-1:45 SESSION 3

3A. Social Sciences Oral Presentations (Mickle 114)

Moderator: Amy Friesenhahn

1. Gender and Governing Bodies: The Intersection of Legal Precedents and Sociological Processes

Presenter: Lauren Warren

Research Advisors: Drs. Michelle Wolkomir and Amy Friesenhahn

Sociology and Political Science, Centenary College of Louisiana

Gender inequality in the U.S. is well documented. Studies have shown how inequality is encoded in our social institutions and structures, and the codification of hierarchical gender ideology in formal rules, such as laws, reinforces unequal gender dynamics in everyday life. In other words, ideologies and behavior help shape law and then laws can reinforce or, potentially revise, the way we think and act. The recent Supreme Court decision in *Dobbs v Jackson Women's Health* (2022) brought this intersection to the forefront as its repercussions immediately placed significant restrictions on women's bodily autonomy and right to access reproductive healthcare. This legal decision reflects a pattern of codifying and sustaining gender inequality in formal social structures. This research conducts an interdisciplinary exploration of the mutually reinforcing and reciprocal relationship between legislation and gender inequality. Specifically, this project examines court cases and legal precedents regarding women's rights and bodily autonomy and then uses those precedents/patterns as sociological data to analyze how these social artifacts encode, structure, and influence contemporary gender power relations and ideology. Research is ongoing.

2. Soldaderas: Las Mujeres Feroces de la Revolución Mexicana (The Fierce Women of the Mexican Revolution)

Presenter: Emily Moreno

Research Advisor: Dr. Amanda Donahoe

Political Science, Centenary College of Louisiana

From the beginning of the Mexican Revolution in 1910 to the end in 1917, Mexican women took up a variety of roles, leaving a significant impact on the revolution. Referred to as *soldaderas*, these women traveled with and fought beside men during the war. Social, economic, and political reform facilitated the advancement of *soldaderas* in society, enabling them to take on jobs ranging from camp followers to combatants. This was also an opportunity for women to break free of gender roles and explore different styles of living, paving the way for the growth of feminism and feminist thought. *Soldaderas* did receive push back, though, as they experienced sexual and physical violence, were restricted by male authority and harmed by misrepresentation, and dominated by hegemonic masculinity value. Through the advantages and disadvantages, the impact of the *soldadera* on the revolution as well as Mexican society and culture was significant.

3. Evaluating Public Attitudes towards Constitutional Provisions in Kosovo

Presenter: Visar Rraci

Research Advisor: Dr. Amy Friesenhahn

Political Science, Centenary College of Louisiana

This research paper aims to assess the impact of international pressure on the development of the Kosovo Constitution and how that phenomenon then correlates with the alignment of constitutional provisions with public opinion. This is a study that addresses a relevant issue in Kosovo, as it is prevalent that the creation of constitutional provisions is driven by international actors. The study expects to find that international pressure has, in fact, had a significant influence on the provisions of the Kosovo Constitution and that public opinion does not align with all the provisions made. The study also suggests that the provisions in the constitution have been made to satisfy international standards, which ultimately led to certain provisions in the Constitution not reflecting the views and values of the public. There is also a dearth of research on this specific topic, thus, this study will add to the research in this area by providing a comprehensive analysis of the relationship between international pressure and the alignment of constitutional provisions with public opinion.

3B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: African American Civil Rights

Research Advisor: Dr. Jama Grove,

History, Centenary College of Louisiana

1. The Development of Black Barbershops into Safe Spaces

Presenter: Camren Hahn

Black Americans throughout American history have rarely been able to freely speak their minds. Due to the dangers of white supremacist values, many black Americans did not feel comfortable sharing their political values in integrated public discourse. For generations black barbershops have offered a space where black Americans could feel comfortable openly speaking their mind. Their historical significance can often be ignored by those who don't belong to the black community. But, since their inception, black owned barber shops have been at the forefront of black political progress. The reasons for their political importance have changed with time, but the leadership roles held by black barbers within the black community have remained intact.

The first black barbers originated before the Civil War began. Enslaved or newly freed people in the south used barbering as an avenue towards economic independence. Barbering would allow them to make an income and also have control of their time, allowing them to spend time away from field work. They most often cut the hair of white men. Many of them, due to financial and social pressure, were forced to turn away black

patrons. Otherwise, they would risk pushing away their white supremacist customers. Black barbers who exclusively served white customers were known as “color line barbers”.

Color line barbers remained popular among white southerners after the Civil War. Many former confederates who supported “The Lost Cause” movement appreciated black barbers because of their perceived servitude. White supremacist men still liked the idea of being served by black people during Reconstruction.

With time, these white southerners, rather than servitude, sought segregation from black people altogether. Color line barbers were quickly displaced by white ones. Rather than being passive victims they created a new business model. Since white patrons no longer wanted to be served by black barbers, they turned to the patrons who did want them, black ones.

Black barbershops made for black people quickly became a norm. The idle time customers waited for a shave provided the perfect opportunity for conversations to begin among customers and barbers alike. Because of the uniquely black space black barbershops provided, black men had the freedom to voice opinions in these conversations that would be dangerous to voice around white supremacist southerners in the Jim Crow south. This aspect of black barbershops is what made them so vital to their community. The political forum they provided to a disadvantaged and disenfranchised people was extremely valuable. Black barbers have been, and will continue to be an important part of the black community, and they’re contributions to history will continue to be felt by all Americans.

2. Historiography of Racial Health Disparities

Presenter: Jazzmyn Jones

Minorities and people of color have long suffered from disparities in healthcare that reflect longstanding structural and systematic inequalities rooted in racism and discrimination. Although recognition had begun during the early twentieth century, many disparities persist, and in some cases, have widened. Throughout this historiography I will examine and trace the way historians have written about and addressed racial health disparities in the twentieth century, between the 1900’s and 2000’s. In this paper I will identify the most influential authors and scholars who have studied this topic as well as examine the momentous events and trends related to the issue. I plan to conduct policy analysis through the twentieth century to focus on the inequalities placed upon African Americans in healthcare. I expect to find support for my hypothesis that if policy supporting diversity, education, and awareness regarding racial disparities are further advanced and implemented, then we will see changes in the occurrence and continuity of systematic inequalities rooted in racism and discrimination in healthcare throughout history. To test this hypothesis, I will engage with sources like “The Immortal Life of Henrietta Lacks” by Rebecca Skloot, a documentary “When the Bough Breaks” by Unnatural Causes and will also examine the works of various authors who have studied the history of systematic racism transforming into health disparities.

3. Race and Class in Texas Timber

Presenter: Ian McDonald

4. New Orleans and the Development of Jazz

Presenter: Paden Sisterhen

In my paper I will talk about the Jazz movement of the twentieth century and specifically, what factors and events in the last decade of the 19th century leading in to the 20th century sparked the Jazz movement. Then I will analyze the unique traits that New Orleans had such as class divisions and multiracial ghettos, to instruments left in the port of New Orleans by armies returning from the Spanish American War in the Caribbean and a melting pot of cultures and people from all over the world. This paper will explain how unlike any other forms of music, Jazz is uniquely the product of a specific city in the heart of a Southern United States and is the most traceable and quantifiable genre of music coming from the United States because it can be tracked from the red lights district of Storyville New Orleans, to St. Louis, to the streets of Chicago, to New York and then to the rest of the United States. I also want to explore how much of Jazz was created through lack of segregation versus segregation and laws being established in the United States during the early 20th century and talk about how those may have influenced the jazz movement.

3C. Humanities Panel (Whited Room)

Moderator: Michelle Glaros

1. Patriarchy, Patriotism, and Power: An Ideological Analysis of "V-J Day in Times Square"

Presenter: Mackenzie Newlan

Research Advisor: Dr. Michelle Glaros

Art and Visual Culture, Centenary College of Louisiana

"V-J Day in Times Square" is arguably one of the most recognized and iconic photographs of the 20th Century. While this photo may appear to be an innocent and romantic celebration of the end of World War II, there is a far more uncomfortable story behind it. Greta Zimmer Friedman, the woman in the photo, has been quoted saying that it "wasn't [her] choice to be kissed." As this information has become public knowledge and in the wake of the #metoo movement, conversations have been sparked about this iconic photo and its position in our culture. Today, "V-J Day in Times Square" functions as propaganda for an American male dominance propagated by the U.S. military and a 20th-century passive acceptance of rape culture. While this photograph's meaning has slowly changed as more information about its context has been revealed, the pervading dominant ideology that created such a photograph is still present and romanticized today.

2. Gustav Holst: Imperialism and India

Presenter: Zane Harper
Research Advisor: Dr. Cory Wikan
Hurley School of Music, Centenary College of Louisiana

Gustav Holst (1874-1934), was an English composer who was fascinated by Eastern cultures and created several works inspired by his interest. Holst's early life experiences shaped much of his musical development and interest as the rest of his life continued including his Indophilia. Holst's actual exposure to Eastern cultures is sparse so, special attention will be paid to the relationship the composer had with the texts that he set and his efforts towards learning Sanskrit. In analysis of the music of Holst's "Indian Period" several pieces will be looked at critically for stylistic components and for imitation of what Britain perceived as the "sounds of India." This presentation will also provide criticism of Holst's music supported by his Imperialistic removal and replacement of Hindu/Indian elements from his music.

3. Remembering Heritage: United States History as Told by the UDC

Presenter: Christine Goodman
Research Advisor: Dr. Chad Fulwider
History, Centenary College of Louisiana

Shreveport, Louisiana has a deep historical importance. It was the capital of Louisiana during the Civil War as well as the last city to surrender its Confederate flag in all of the Confederacy. It was also home to a 30 ft. Confederate monument that sat in front of the Caddo Parish courthouse for 117 years. It was moved in the summer of 2022 after a long court case an hour south to Pleasant Hill to now serve as a marker for the Battle of Mansfield. This monument was created and owned by the United Daughters of the Confederacy Shreveport CH. 237. I went and was a witness to their rededication and reenactment ceremony that they held because of the move. Listening to speeches and watching the cannon fire to see what their version of history was. Associations such as the UDC and the Ladies Memorial Association (LMA) were able to change the narrative to fit a message that glorified the Confederate army. This is how the war was written during the first few decades, and that affects more than even the southern outlook today. The "Lost Cause" narrative that is taught in schools, even in modern times, should be challenged on its validity. Too often we still memorialize Confederate soldiers in the ways they would have wanted us to perceive them rather than acknowledge the treason that was actually committed. In this research I explore what those connections to Confederacy still are in reference to Shreveport and Centenary College.

2-3 SESSION 4

4A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: American Politics and Policy

*Research Advisor: Dr. Amanda Donahoe,
Political Science, Centenary College of Louisiana*

1. Family Background and the way it Influences a Persons' Political Values

Presenter: Ann- Elizabeth Knight

Politics will play a role in a person's life starting at a very young age. This paper examines how things like a person's family background, parental political affiliation, and the impact of peer's political identification effect a person's political association in the future. I am looking at a survey that I administered to college age respondents at Centenary College of Louisiana that ask questions about my peer's political background and how it has influenced their current political association. The purpose of this survey is draw correlations between a person's political background and the influence their family has had in it. I expect to find people who grew up in extremely political families will either be extremely political or not involved at all. I also expect to find that race, class, and economics also have a heavy influence on a person's political influence.

2. Effects of Changes in Gun Control Policy on the Frequency and Severity of Mass Shootings

Presenter: Remi Miller

In this paper, I test the effect of changes in gun policies on the frequency and severity of mass shootings. To do so, I conducted an intervention analysis on the frequency of mass shootings, the frequency of severe injuries caused by mass shootings, and the frequency of fatalities caused by mass shootings occurring in two states before and after changes in state gun laws. The policies were categorized as restrictive or permissive. The states were chosen based on their shared history of mass shootings and changes in gun policies over time. I expect to find that if a state increases restrictive gun policies, then the frequency and severity of mass shootings in that state will decrease. To test this hypothesis, I evaluate the gun policies using secondary data from state archives, and the frequency of mass shootings in the two states before and after gun policy changes using secondary data from the Everytown, Centers for Disease Control and Prevention and the Gun Violence Archive between 2013 and 2021. This time period reflects when the most comprehensive data was collected by the Gun Violence Archive. The changes will be presented on a time series plot. The data may support the hypothesis that changes in gun laws affect the frequency and severity of mass shootings by revealing a trend. I will also address other potential causal factors such as the rate of violent crime, population density, and poverty. This study expands on prior research analyzing gun violence over time in all fifty states by comparing two states specifically and evaluating the effects of changes in gun policies..

3. Rural Opinions on Economic Social Programs and Tolerance for Political Education and Outreach

Presenter: Brenlyee Meaux

Economic social programs created by the United States federal government serve a well-documented need in our society and have historically been a major instrument for improving the overall quality of life and health in our country. Yet, many rural families and individuals that could most benefit from these programs do not take advantage of these programs. Through analyzing why these individuals do not take advantage of these programs or have negative opinions of them, this study investigates the most effective ways to educate them on these program's purpose. Through analysis of educational concepts and past political education campaigns, the most effective ways to educate the wary on these programs was revealed. The individuals in rural communities studied willingness and tolerance for different forms of political education and outreach were considered. The data reveals that needy families' negative opinions of social programs came both from the news media they consumed, and social stigma shown in their community. The data shows personal conversations with a relatable educator are among the most efficient ways to connect and sway the opinion of those studied. This information is valuable both by the agencies in question, but also for potential candidates who have created a platform based on social programs and a social safety net.

4B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: Re-examining Established Historical Perspective

*Research Advisor: Dr. Jama Grove,
History, Centenary College of Louisiana*

1. The Social and Political Effects on Drag in British Theatre during the Elizabethan Era

Presenter: Ophelia Scott

The practice of drag is something that has become a part of the larger public eye in recent decades and can be traced back to the earliest forms of theatre. Studying the effects of social and political forces on drag in the British theatre may reveal more information about the practice. The "drag" that is relevant to this research is not the modern practice which has become popularized by the LGBT+ community, but rather of actors playing characters of another gender on stage. This research would cover the social and political atmospheres of the Elizabethan era and how these effects shaped the use of drag in theatre (specifically male actors playing female characters). Examining the plays of the time may help in answering how the practices during this period are informed by political, social, and/or religious ideas. Some texts which could be useful would be *Twelfth Night* by William Shakespeare and *The Tragical History of Doctor Faustus* by Christopher Marlowe. Both texts would have been performed with male actors playing the female roles, however

Shakespeare's work included a cross-dressing plot as an integral element of the story. Why did Shakespeare include this theme when one level of cross-gender casting was already present? Why do Marlowe's female roles only exist as accessories to the male roles? The methods of drag in this period are also compelling. Did these actors wear makeup, use masks or costumes, or nothing at all to create a feminine look? How much of an illusion were these actors attempting to create? Was the illusion important or necessary to the practice, or was it unacceptable to look too much like a woman? What was the line that these actors had to walk when portraying female characters to convey that they were women only onstage? How were the actors themselves regarded by their society for performing as and imitating women? Modern texts that would work to the advantage of this research include *Drag: A History of Female Impersonation in the Performing Arts* by Roger Baker (particularly the chapter "Acting Style and the Sound of Juliet"). This chapter of the book focuses on recorded acting styles of drag actors during the Elizabethan and Jacobean period, which gives more detail about drag actors during this time. Another interesting modern text is *It's a Drag: Cross Dressing in Performance* by Janet Tennent. This book includes information on Shakespearean boy actors which also provides insight on the actors and those who interact with them. This research could provide more information for accurate reproduction of plays from this era. This would benefit current male actors cast in the female roles, costume and makeup designers, and dramaturgs tasked with historical reproductions. Dramaturgs may benefit from new perspectives on these texts because these researchers would have another scholarly resource for the information they compile on productions. This may also contribute to conversations about drag by providing contrast to contemporary drag history.

2. The House of Medici: Power, Influence, and Beliefs

Presenter: Debra Brown

3. The United States and the Independence of Kosovo: Examining US Foreign Policy, Diplomacy, and Military Intervention in the late 20th Century

Presenter: Visar Rraci

This project tends to explore the United States' role in the independence of Kosovo in the late 20th century. It analyzes how the US foreign policy, diplomatic efforts, and military intervention contributed to shape the political developments leading to the declaration of independence of Kosovo. To branch out, the project examines the impact of these actions on the stability of the Balkan region and on US-European relations. The US involvement in the Kosovo conflict was significant, and its policies had far-reaching implications. The paper highlights the various diplomatic and military initiatives taken by the US and examines their effectiveness in achieving the desired outcomes. It also discusses the impact of the US intervention on the political and social situation in Kosovo and the Balkan region. Furthermore, this paper will serve as a catapult for a bigger project, my senior seminar project, which aims to assess the impact of international pressure on the development of the Kosovo Constitution and how that phenomenon then correlates with the alignment of constitutional provisions with public opinion. This is a study that addresses a relevant issue

in Kosovo, as it is prevalent that the creation of constitutional provisions is driven by international actors. The study expects to find that international pressure has, in fact, had a significant influence on the provisions of the Kosovo Constitution and that public opinion does not align with all the provisions made. The study also suggests that the provisions in the constitution have been made to satisfy international standards, which ultimately led to certain provisions in the Constitution not reflecting the views and values of the public. There is also a dearth of research on this specific topic, thus, this study will add to the research in this area by providing a comprehensive analysis of the relationship between international pressure and the alignment of constitutional provisions with public opinion.

4C. Library Panel (Whited Room)

Moderator: Patrick Morgan

1. The Effects of Political Values Upon Corporal Punishment

Presenter: Jaeda Moreno

Research Advisor: Michael Futreal

Sociology, Centenary College of Louisiana

Because political affiliations essentially provide insight on personal values and social attitudes, I am researching if an individual's political party dictates whether people agree or disagree that it is indeed sometimes necessary to spank a child. To ensure non-spuriousness, I have included the variable of the age of the respondent to see whether younger participants' results vary in comparison to those older due to the shifts and changes in generational morals. My research will support that a person's political party ultimately distinguishes whether they agree or disagree with sometimes deeming it necessary to spank a child with no age spuriousness.

2. What do you think of when you think of your grandma?

Presenter: Tyler Brents

Research Advisor: Patrick Morgan

Magale Library, Centenary College of Louisiana

What do you think of when you think of your grandma? "Grandma" may seem like a single idea, but in fact you think about many things all at once: her physical characteristics, her intrinsic characteristics, and your idea of her that you have for yourself, etc.. Ultimately, there is a difference between the "idea" of your grandma and the person herself, and even "the idea" is actually complex. This is illustrated well by one of the most fundamental concepts in information science, the semiotic triangle or triangle of reference. This triangle is a way of conceptualizing how we perceive and store information, such as ideas about our grandmothers. What other things come to mind when you think of her? Is it her cooking, her house, her dog? You'll realize once you start thinking about your grandmother that

you'll start thinking of the other things related to her. This has to do with how the brain compresses and decompresses information when making memories. This talk explores the ways that our brain builds meaningful associations and uses a process analogous to the compression of a .zip file for linking and "storing" information "inside" of other, related information.

3. Language and thinking

Presenter: Dani Kimmey

Research Advisor: Patrick Morgan

Magale Library, Centenary College of Louisiana

Thought and language are inherently linked, but they are not the same. What is the "difference that makes a difference" between thought and language? Language is the vessel to communicate and process thought. There is an idea that thought is innate, available at infancy that transforms as language prioritizes certain patterns and recognition. Once a pattern is established through language, thought begins to be influenced by and restricted by the culture imbued in language. If language and thought are woven together by the perception of thought, why is it important to differentiate between the two? How can we do this? This is an attempt to discuss this distinction.

4. What makes a successful urban legend? Memes, Skinwalkers, and Slenderman

Presenter: Serena Sellers

Research Advisor: Patrick Morgan

Magale Library, Centenary College of Louisiana

Urban legends are stories told from word-of-mouth that usually have a moral. For example, the infamous skinwalker that originates from Navajo culture teaches people to not approach strangers or strange looking animals. Information is data that is either searched for by a person or told to a person, and in this case urban legends are told. It can be difficult to research urban legends by reading books because urban legends rely heavily on spoken word. However, the internet is a massive hub for information that provides many options for research on urban legends, such as creepypastas. Creepypastas are urban legends written by people from all over the world that can only be found online and not in published works. They are most often consumed in audio forms such as videos on YouTube where a person reads the urban legend out loud. The same urban legend can be heavily altered over time due to its reliance on word-of-mouth storytelling. A good example is Slenderman, a creepypasta that has taken on multiple different meanings since its original creation in 2009. Both oral urban legends and digitally-built creepypastas can be described in terms of meme propagation, and this talk explores the success of Slenderman and Skinwalker legends from that standpoint

4D. Poster Presentations (Mickle 2nd floor)

Moderator: Scott Chirhart

1A. Phenotypic analysis of sORF-containing lncRNA mutants using low and high throughput techniques

Presenter: Mali Simmons

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Current genome annotation algorithms require an open reading frame (ORF) of at least 100 amino acids as one criterion for distinguishing a protein-coding gene from a non-coding gene. However, a recent reannotation of *Arabidopsis thaliana* long non-coding RNAs (lncRNAs) identified a set of highly conserved, small ORF- (sORF,) containing lncRNAs with evidence of ribosomal interaction, suggestive of these lncRNA's ability to be translated into protein products. In my project, I explored a subset of these sORF-containing lncRNAs that may cause a phenotypic effect by disrupting expression in the targeted gene. We disrupted the *Arabidopsis* genes using SALK insertion lines to observe potential phenotypes. Using low throughput phenotyping assays on plates and the SmartRoot measurement tool, we observed root development of these insertion lines. To track early growth and rosette development, we used high throughput phenotyping coupled with a PlantCV-based bulk image analysis pipeline.

2A. Effects of BABA on Pathogen Susceptibility

Presenter: Lauren Hall

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Beta-aminobutyric acid (BABA) is an amino acid released by plants as an immune response to some pathogens. Because BABA is naturally occurring, there is a possibility of it being used as a safe pesticide. A recent study has found that BABA helps prime the immune system of a plant, however, excess concentrations of BABA lower the yields and heights of plants. These factors limit BABA's capacity for being used as a safe, commercial pesticide at this time. The effects of varying concentrations of BABA were measured when *Brassica rapa* was infected with Tobacco mosaic virus (TMV). *Brassica rapa* was used as a model organism to study multiple concentrations of BABA on plant survival during our limited time in the semester. An observational survey was conducted to compare the amount of infection between groups. The height of each plant was also recorded to measure the effect of BABA on plant growth. There were two parts to this experiment. The first part compared a control group and a test group with a large concentration of BABA. Depending on the results of the first test, a second experiment was run where a group of plants were exposed to either increasing or decreasing concentrations of BABA compared to the first experiment. A BABA concentration that improved plant survivability while also minimally impacting plant height/yield will be statistically chosen based on the results that are produced.

3A. Treatment of Root Knot Nematodes with Essential Oils

Presenter: Anton Pelto and Brian O'Hart

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Nematodes are a major pest in gardens and crops across the world. They have a significant impact on crop production and revenue costing up to \$157 billion in damages. These pests are not picky either as they affect a variety of crops including rice, wheat, maize, soybean, potato, tomato, and sugar beet. There are many known treatments to get rid of these pests such as using helpful nematodes and other organisms to counter the harmful effects of nematodes. However, many of the large scale nematicides include environmentally toxic compounds, such as methyl bromide which was phased out in 2005. Our goal is to test biodegradable and environmentally safe Essential Oils (EO), which have shown promise for their nematicide properties. Faria, J. et al. (2015) demonstrated that some EOs are an effective and safe nematicides against nematode egg hatching. We tested Neem, Citronella, and Rue essential oils extracted from plants in the aforementioned experiment to make small scale, effective, and safe nematicides that will protect crops such as tomatoes. We tested the effectiveness of the EOs against one of the most common and economically damaging nematode species, *Meloidogyne incognita* (Root-Knot Nematode). The crop plant we used was Quedlinburger Furhe Libe tomato plants. After inoculating the plants with the nematodes, we treated the plants with the emulsified EO mixtures. Determining the best EO treatment will include the 1-10 final condition and the progression of the condition of the plants throughout the experiment.

4A. Computational methods for development of arbidol as a fusion inhibitor of the novel coronavirus

Presenter: Alireza Moosavi Behbahani

Research Advisor: Dr. Elahe Mahdavian

Department of Biochemistry, Louisiana State University Health Sciences Center

The novel SARS-CoV2 is a highly pathogenic virus and the causative agent of COVID-19 disease. There are currently very limited number of FDA-approved drugs for COVID-19, and thus an unmet medical need for new and effective therapeutics against this deadly virus. In this project we use a computer aided drug discovery (CADD) approach to rapidly identify promising drug candidates against COVID-19. Using prior knowledge of existing anti-viral drugs, we chose arbidol, an anti-influenza drug, as a seed compound for this project. Arbidol has shown significant anti-viral activity against SARS-CoV2 in various pre-clinical disease models of the virus. However, despite its promise, as a drug, arbidol displays several limitations, including large conformational flexibility and poor water solubility. Using medicinal chemistry insights and Swiss-Bioisostere tool, we assembled a medium-size drug library of compounds with structural modifications to address arbidol's

known drug limitations. We also chose the SARS-CoV2 fusion protein (Spike: S2) and a high-quality structural model, PDB-ID: 6VXX, as the protein target for this computational drug discovery project. We hypothesized that arbidol and certain analogs can act as fusion inhibitors against SARS-CoV2 since the viral spike protein binds to the host receptor protein (ACE2) through a similar mechanism as Influenza's hemagglutinin. We employed molecular docking to assess the binding affinity of the drug candidates to Spike protein (6VXX) and screened the ADME parameters using Swiss-ADME tool for each compound, removing analogs with low binding affinity and undesirable physiochemical characteristics. We then used detailed analysis of binding energies/interactions in compound-6VXX complexes and ADME properties to prioritize compounds for the validation of their anti-viral activity in experimental research. The goal to is select the most promising compounds that can serve as fusion inhibitors of the SARS-CoV2 viral infectivity mechanism.

5A. Modeling and Applications with the Hodgkin-Huxley Model

Presenter: Porter Boudreaux

Research Advisors: Dr. Jarret Richardson and Dr. David Kordahl

Neuroscience and Physics, Centenary College of Louisiana

The Hodgkin-Huxley Model is a model that uses differential equations to model the initiation and propagation of action potentials in neurons. These equations lend themselves well to being modeled computationally and provide a framework for studying action potentials outside of living models. Such models are also useful in studying disease states that involve faulty action potentials and action potential propagation. In this project a code was written to create a computer simulation of the Hodgkin-Huxley model, and outputs were compared to known values for a variety of biologically relevant parameters.

6A. The Effect of Diverse Representations on Feelings of Belonging

Presenters: Casey Swize, Isabella Brown, Yosajandy Bouslog

Research Advisors: Drs. Peter Zunick and Anna Leal

Psychology, Biology, and Kinesiology, Centenary College of Louisiana

This study aims to examine the effect of diverse anatomical models on students' motivation, affect, belonging, and self-efficacy. Anatomical models are often used in biology education, but most have, by default, a white skin tone, which might serve as a cue that students of color do not belong in that setting. The purpose is to understand the effects of representation within STEM by addressing the feelings of race inequities and belonging that non-white students feel within learning settings. These feelings of belonging are important for students of color to maintain motivation and achievement within STEM field courses (Graham et al., 2022). We conducted a within-subjects experiment to test motivational cues, feelings of belonging, self-efficacy, and affect would increase using two anatomical models of the human head and torso, one representing Black skin tones, the other White skin tones. Participants were randomly

assigned to three conditions (white, black, or control), and then rotated through the conditions. Participants were given pretest and posttest surveys that measured dependent variables using a Likert scale, along with learning station surveys after each condition that measured learning outcomes. We expect that within the surveys, non-white participants will experience more motivation, positive affect, belonging, and self-efficacy after exposure to the Black model than the other two conditions, but no effect in learning outcomes. This study will provide evidence for diversifying learning tools within STEM fields and allow for more examination into how belonging and motivation for people of color can be affected by representation in classroom settings.

7A. The Elrod Exhibit

Presenter: Anna Jane Storms

Research Advisor: Dr. Jessica Hawkins

Art and Visual Culture, Centenary College of Louisiana

How does one display history in a visually compelling way? What parameters or restrictions does one face when challenged with making a space an interactive biography? These were some of the questions asked while designing a new exhibit currently under construction at the Talbot Museum located at the Willis Knighton Innovation Center in Bossier, Louisiana chronicling the career of James K. Elrod. Using Elrod's memoir and conducting a series of interviews, this project examines the man behind the curtain of Willis Knighton Health Systems. With his retirement in September 2021, James K. Elrod became the longest-tenured hospital administrator in the United States. The average length of time for a hospital administrator to stay at one hospital is three to five years, proving Elrod's significant commitment and achievements to Willis Knighton's development unparalleled. Moreover, this presentation will also examine the process of effectively designing and displaying this research in a museum setting for an audience.

8A. Absorption and Fluorescence Measurements of Chlorophyll with SpectroVis Plus

Presenter: Maddie Vacula

Research Advisor: Dr. David Kordahl

Physics, Centenary College of Louisiana

The SpectroVis Plus Spectrophotometer is a compact laboratory device that can measure the absorption and fluorescence spectra of chemical solutions in cuvettes. This study explores the reproducibility of chlorophyll absorption and fluorescence spectra taken across several different spectrophotometers. Absorption spectra show the intensity of light absorbed by chemicals at different wavelengths of light as electrons transition from lower to higher energy states. Fluorescence spectra show the intensity of light emitted at different wavelengths as electrons transition from higher to lower energy states. These quantities are related to the concentration of the substance being measured, which can be accurately controlled. Lower concentrations of chlorophyll extract were found to produce absorption spectra that closely matched values quoted in

the literature, and chlorophyll extracted from spinach leaves yielded more reproducible fluorescence readings than a preprocessed chlorophyll extract. More variance was observed across machines in fluorescence data than in absorption data.

9A. The Role of STAT1 in HCMV Persistence

Presenter: Melissa Krzywanski

Research Advisors: Drs. Chan-ki Min^{1,2}, Joseph Eniafe^{1,2}, Byeong-Jae Lee^{1,2}, and Andrew D. Yurochko^{1,2,3}

*Department of Cellular Biology and Anatomy¹ and Department of Neurology²,
Department of Microbiology and Immunology¹, Center for Applied Immunology and
Pathological Processes², Feist-Weiller Cancer Center³ Louisiana State University Health
Sciences Center*

Human cytomegalovirus (HCMV) is a virus that is present in approximately 55-100% of the human population. HCMV contributes to life-long diseases such as cancer and cardiovascular disease and is a leading cause of morbidity in neonates. HCMV infection can also have serious implications for immunocompromised individuals leading to opportunistic infections in AIDS patients and transplant recipients that increases the risk to the patient. HCMV infects peripheral blood monocytes and triggers biological changes that promote viral dissemination and persistence following primary infection. However, the mechanisms by which HCMV triggers these changes remain unclear. Previous studies from our laboratory have demonstrated that HCMV triggers these changes through engagement and activation of the epidermal growth factor receptor (EGFR) and integrins on the surface of monocytes. Transcriptome analysis of HCMV infected monocytes identified the transcription factors MAFB, STAT-1, and other transcription factors as mediators of this process. After examining the transcription factors required for virus-induced monocyte differentiation during a primary infection, we next wanted to investigate if these same transcription factors can mediate the process of differentiation-induced viral reactivation from latency.

10A. Screening *C. elegans* proteins for their interaction with Deprenyl

Presenter: Cassandra Halford and Emily Reid

Research Advisor: Dr. Kathrine Weeks

Chemistry, Centenary College of Louisiana

By 2020, for the first time in history, people over the age of 60 outnumbered those under the age of 5 worldwide. This demographic shift comes with an increase in age-associated diseases including neurodegenerative diseases like Parkinson's Disease. Compounds that safely modulate development and aging may delay the onset of these diseases, which could help countries' healthcare systems care for aging populations. Our lab recently showed that the anti-Parkinson's Disease drug deprenyl slows the developmental rate of the model organism *C. elegans* by activating the anti-apoptotic protein CED-9. However, the developmental rate of *C. elegans* is controlled by the activity of many proteins. This research project aimed to determine whether other

proteins known to regulate *C. elegans* development are required for deprenyl to delay development. DAF-2 is an insulin growth factor-1 receptor (IGF-1R) that regulates growth, development, metabolism, and other biological processes in *C. elegans*. CAT-2 is a tyrosine hydroxylase ortholog required for the synthesis of dopamine, a neurotransmitter involved in food consumption whose metabolism is affected by deprenyl. Worms deficient in either DAF-2 or CAT-2 were treated with 1.0 mM deprenyl, and their developmental rate was scored. Our results show that 1.0 mM deprenyl delays development in the absences of these proteins, which means that DAF-2 and CAT-2 activity are not required for deprenyl-induced developmental delay.

3:15-4:15 SESSION 5

5A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: Single Case Studies in Politics

Research Advisor: Dr. Amanda Donahoe,

Political Science, Centenary College of Louisiana

1. The Race for Global Supremacy: Chinese Biotechnology and U.S. Security

Presenter: Renee Katz

The rapid development of the Chinese biotechnology industry has a potential to become a security threat to the United States and the West. This paper provides an analysis of current and potential emerging threats posed by China's growing biotechnology industry. Current security threats include the acquisition of advanced U.S. biotechnology knowledge and China's role as the world's "global laboratory," while future security threats are likely to emerge if China becomes the new biotechnology capital of the world. Of these potential future security threats, this paper focuses on two: the lack of access to vital medications and widespread use of unsafe or unregulated biotechnology. On its current trajectory, the Chinese biotechnology sector is set to soon surpass the United States in terms of patents, publications, and economic output. Due to the exponential growth of the sector within the past decade, much of the existing literature is outdated. In addition to a comparison of previous data, this analysis of the trajectory of the Chinese biotechnology sector is determined using the previous literature as a benchmark and evaluating progress made in the areas that previous authors have deemed significant setbacks. China's Five Year Plans will also be used in the analysis to help predict the trajectory of the Chinese biotechnology industry. This paper argues that traditional methods of analysis prove insufficient when analyzing such a rapidly developing field in a country that has developed faster than any other nation in modern history.

2. How soft power can be affected by hosting mega-events: a case study on the 2022 FIFA World Cup in Qatar

Presenter: Sami Borchalli

Sporting events can be an avenue for both small and large states to promote their goals and attempt to grow in soft power, defined as state powers other than military or economic strength, such as values, culture, and ideology, in a process known as “sportswashing.” While this can be a positive for some states, this presentation will provide a case study of Qatar’s preparation and experience as the host of the 2022 FIFA World Cup and how these results can be applicable to future cases. To analyze this case, I will use a case study with library research about multiple aspects of Qatar’s experiences with past and present sporting events, including analyzing tourism and ethnographies, as well as analytical journal articles about the concept of sportswashing and case studies of other previous recent hosts of major events. I expect to find that, because of the negative media coverage surrounding Qatar’s bid to host the World Cup and the corresponding changes in public opinion, Qatar will see a decrease in soft power and standing in international relations following the World Cup. I predict that these results will apply similarly to less well-known and more authoritarian states, while states in the Global North will see less negative coverage, resulting in a change in soft power that is more consistent with those host countries’ expectations.

3. Ethnonationalist Ideology and the Escalation of Radical Group Violence: Case Study of the January 6, 2021 Attack on the United States Capitol

Presenter: Kylie Walker

The accumulation of radical ideals, conspiracies, and resentment toward the outcome of the 2020 Presidential election on social media platforms developed into a widespread sense of personal and national threat which escalated to violence on January 6th, 2021. In this research, process tracing was used to conduct a case study centered on the communications and group memberships of extremists who participated in the insurrection. For this research, I focus on the Proud Boys, Oath Keepers, and QAnon conspiracists specifically. I explore causal mechanisms related to the groups’ ties to ethnonationalism and their utilization of social media based upon the analysis of existing scholarly research in academic fields including political science, sociology, psychology, and religious studies. Ethnonationalism is a belief system which implies that legitimate membership in a nation depends upon specific and exclusive physical characteristics, social status, or ideologies. The immediate and widespread access of social media allows for the formation of conspiracies by providing an opportunity for those who hold certain radical beliefs to bond over shared values, and by simultaneously isolating the believers from information from other perspectives or platforms than those they identify with. Believers are then able to organize based upon mutual moral standards, characteristics, and social expectations to collectively protest their perceived injustices by the government. My findings demonstrate that characteristics of ethnonationalism are embedded in the foundational beliefs of far right extremist groups, and in recent years some groups have

begun to make use of the advancement and increasing popularity of social media to gain support and radicalize on behalf of their cause.

5B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: The Expanded Civil Rights Movement

*Research Advisor: Dr. Jama Grove,
History, Centenary College of Louisiana*

1. Between Tradition and Americanization: The Cajun People Through the Twentieth Century

Presenter: Julie André

For several centuries, the Cajun people have thrived in Louisiana and their legacy has been passed down from generation to generation to this day. This people is composed of descendants of French colonists who arrived in Louisiana in the seventeenth century but also of Acadians who arrived in the region after the Grand Dérangement (1755-1764): the forced removal, by the British, of inhabitants of parts of a Canadian-American region historically known as Acadia. They are well known for their cuisine, their dialect - the French Creole - but also for their traditional music still listened today. The twentieth century was a period of great changes for the Cajun people. The first half of the century saw a decline in the culture with a nearly total loss of the French Creole language until a shift brought about a Renaissance in the culture. This community that had felt ashamed of its origins suddenly became proud of it. As a result, their way of life has evolved, although their choice was to preserve the traditions that were most important to them. However, opening up to the world and ceasing to be an isolated people also means Americanization in the face of the dominant national culture. Thus, the Cajun culture had to commercialize some of its traditions in order to make itself known and to bring economic benefits to the region. That is why we are going to study how the Cajun culture transformed from its local form as it was introduced and disseminated through dominant American culture.

2. The Fearful World Before Roe v Wade

Presenter: Avery Cauley

I will be examining the extreme harm and danger that women were put through before Roe v. Wade was decided by the United States Supreme Court legalizing abortion in 1973. Women were not only facing threats that were physical, but the threat of being put in federal prison simply for seeking medical help. I will specifically be looking at the 60s-73, pulling some accounts from the mid 50s. I will be using accounts from women who struggled to have an abortion due to not knowing where to go, economic issues, fear, or other reasons. I will also discuss various ways women obtained abortions whether that be in

chemical capacities, or going to a harsh group of men. I will go over statistics of estimations of how many abortions occurred and how many led to tragic deaths of women who had nowhere else to turn to. I will emphasize how dangerous it is living in a world where women do not have control over what happens with their body. I plan to address who exactly was affected. Once abortion was legal in New York why was there still an uprise of disappointed women? Why did it take three full years after. A world before Roe v. Wade was an objectively harmful, scary, and seemingly hopeless time for women and I want to focus on why in my paper.

3. How Government Involvement Affected Indigenous Activism

Presenter: Jessica Cordova

Throughout America's history, there have been several targets of prejudice and discrimination. The earliest has been Indigenous people. Yet, they remain are not commonly acknowledged in the public eye. During the twentieth century, civil rights movements became a staple of the 60's and 70's. The government's reaction and response to these movements influenced the results then and now. I searched to discover the results of government action on the movements of Indigenous people in the 60s-80s and how that shaped the form of activism they undertook. Other movements of the time had the benefit of public unity. Indigenous people belong to different tribes in different locations. The governmental support and treatment they endure has led to them being overlooked, underfunded, and exploited throughout all of its establishment here. The gap that they have between them and other movements is very evident. Direct government involvement into their movements has resulted in extra fighting between all parties involved. In Wounded Knee, governments supplied and helped an opposing tribe that was under fire for unjust practices. Furthermore, they sowed the seeds of distrust among the people with illegal spying and involvement. Just one example of how the government has influenced the outcomes of these social movements. Due to the direct involvement of the government against Indigenous people, they had to adapt and adjust their strategies in order to gain results. This led to a worsened drive of their movements as results kept slipping through their fingers and geographical and social separation. It weakened the social impact they held, something that remains seen today.

5C. Creative Writing Readings (Whited Room)

Moderator: Matthew Blasi

1. Zeak Monroe Buckner Writing Award Finalists:
 - Joel Cardenas-Lopez - "A Florid Argument for Being Cold"
 - Phoebe Cragon - "Garden-Variety Pests"
 - Emily Moreno - "Es 'mande,' no es 'what'"
2. Audrey M. Smith Endowed Poetry Award Finalists:
 - Phoebe Cragon - "Beak"

- Jordan Fong - “1099s and Ice Cream Truck Jingles”
- Jerney Harms - “Daughter’s Mother”

5D. Poster Presentations (Mickle 2nd floor)

Moderator: Scott Chirhart

1B. Investigating the functional roles of long non-coding RNAs in seed germination and seedling development

Presenter: Regan Griffin

Research Advisors: Drs. Rebecca Murphy¹, Kyle Palos², Caylyn Railey², and Andrew Nelson²

Biology Centenary College of Louisiana¹, Stress Architecture and RNA Biology Lab, Cornell University²

Long non-coding RNAs (lncRNAs) are genes found in all eukaryotes that do not encode a protein and are emerging transcriptional regulators. Research into lncRNAs only recently began and a vast majority of them have not been studied or characterized. The Nelson lab recently identified and characterized the sequence and expression characteristics of thousands of lncRNAs in the plant family Brassicaceae, which includes *Arabidopsis thaliana* and *Brassica rapa*. From this study, multiple lncRNA candidates of interest were identified due to their high levels of expression during seed germination and seedling development, as well as their elevated levels of nucleotide conservation. In order to investigate the biological role of each candidate lncRNA, we characterized *Arabidopsis thaliana* plants with a mutated lncRNA gene. We started by ensuring that our lncRNA candidates were homozygous for the mutation at the lncRNA locus. This was performed by extracting DNA from the mutant plants, performing polymerase chain reaction of the mutated gene, and visualizing the results using gel electrophoresis. Next, we quantified the developmental progress of our mutant plants through germination and early development as they are lncRNAs expressed during these stages. We observed delayed germination rates in mutant seeds and shorter roots in mutant seedlings that were mutated in our lncRNA candidates when compared to wildtype plants. Future experiments will determine what molecular roles these candidate lncRNAs play during early development. From this information we can conclude that these candidate lncRNAs play a functional role in seed germination and seedling development.

2B. Genetic Alteration of Rab 7 in Radishes When Introduced to *Ustilago maydis*

Presenters: Sarah Murphy and Shelby Roy

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Ustilago maydis is a member of the smut fungi family and belongs to the phylum Basidiomycota. It is referred to as “corn smut” because it most commonly infects corn, but it can also infect radishes, asparagus, and other crop plants. This is a plant pathogen that has a narrow host range, is biotrophic, and spreads through small spores that are airborne. Once infected, it takes approximately 10 days for galls or tumors to appear on the crop. The first layer of protection in plants' immune system is known as PTI or PAMP-triggered immunity. PTI signaling components are targeted by various effector molecules which infiltrate the system, diminishing the plants defense system and increasing bacterial virulence. *Ustilago maydis* secretes effector molecules that are able to infiltrate the PAMP-triggered immunity system. Once it is infected, the fungi works to change the metabolic pathways of the plant to use it for its own benefit. Our experiment will focus on *Ustilago maydis* infection in radishes. *Ustilago maydis* alters gene expression in corn, we will be testing to see if that is a universal truth by experimenting with radishes. We will be strengthening the immunity of the plant with mycorrhizae and a fungicide to see if we can protect the plant from infection and gene alterations. We will be looking at Rab GTPase, specifically Rab7, because it is a common target of bacterial effector molecules. We hypothesize that the infected radishes with no mycorrhizae or antifungal will produce an altered gene expression in comparison to our control when run through a PCR test. The radishes infected and treated with mycorrhizae and an antifungal will not produce an altered gene expression.

3B. The Effect of TMV on Photosynthesis

Presenters: Summer Faust and Brittany Lee

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Earth's soil is made up of different components such as organic materials, water, approximately 45% of minerals, bacteria, and air. These different components play a role when a plant is being grown and are vital in order for the plant to remain healthy and alive. Photosynthesis is a process where plants take in carbon dioxide and water in order to convert it into oxygen and energy in the form of glucose, this process occurs in the chloroplasts. If a plant is infected with a pathogen, specifically on its leaves, then this would hypothetically affect the plant's ability to perform photosynthesis. This would include the exchange of gases in this process and the plants chloroplasts. In this experiment, we will determine that result by observing and analyzing the photosynthetic rates of regular, controlled plants and plants that are infected with Tobacco Mosaic Virus (TMV). TMV is a plant virus that forms a mosaic pattern on the plant causing a blotchy, discolored appearance on the leaves. We plan to distinguish the differences between the photosynthetic rates of each plant by using the LoggerPro system to collect the carbon dioxide and oxygen emission levels for each plant in an airtight container and we will look at the number of chloroplasts on the leaves of the plants by performing a chloroplast extraction from the leaves. We will be looking at the carbon dioxide and oxygen levels to determine if a plant with a pathogen on it will cause it to take up less carbon dioxide in its leaves and emit less oxygen from its leaves than a

plant with no pathogen. We will be looking at the number of chloroplasts in the leaves because they are the site of photosynthesis and if the pathogen is killing the chloroplasts, then the plant will, in turn be doing less photosynthesis.

4B. Phenolic Compound Production from Pathogen-Induced Plant Communication

Presenters: Tarif Islam, Jonathan Okereke, Alireza Moosavi

Research Advisor: Dr. Rebecca Murphy

Biology, Centenary College of Louisiana

Rooted to the soil, plants lack the ability to physically escape from their natural predators. Despite this, plants have managed to thrive in multiple environments against invading pathogens through their immune responses and plant-to-plant communication. This project sought to observe the immune response of Wisconsin fast plants when their neighboring plant was infected with root-knot nematodes. Specifically, this project delved into whether an infected Wisconsin fast plant could produce air-borne chemicals that would alert neighboring plants to kickstart their immune system against the root-knot nematodes.

We hypothesized that air-borne communication would induce phenolic compound production in neighboring plants in response to targeted infection. Research has shown that phenolic compounds are synthesized as a byproduct of plant immune responses, especially during pathogenic invasions, with supporting research commenting on the antioxidant properties and dietary benefits of fruits and vegetables with increased phenolic compound levels. Discovering a method to increase phenolic compound levels in plants without direct infection may lead to agricultural practices that improve the cardioprotective and anti-inflammatory properties of crops.

Sealed, air-tight containers were used to store the plants. Five containers were used with five plants each arranged like a singular die. After allowing the seeds to grow over several weeks into adult plants, three containers had their middle plant infected with live root-knot nematodes. The infected plants were given a week to send air-borne chemical signals into the airtight environment. The stems and leaves of fifteen plants were analyzed for their phenolic compound levels: three infected, six plants that neighbored an infected plant, and six controls. Phenolic compounds were extracted in 80% methanol and measured via UV Spectrometry at wavelengths 280 nm and 360 nm. After analysis, the roots of infected plants were observed under a microscope to confirm the presence of root-knot nematodes.

At both wavelengths, spectrometry revealed the same trend: infected plants had lower phenolic compounds levels, and the uninfected plants – whether they neighbored an infected plant or not – did not show any difference between their phenolic compound levels. Microscopy of infected roots did not detect the presence of root knot nematodes, raising the possibility that an unforeseen variable may have decreased phenolic compound levels in the infected group.

5B. Hydrogen Sulfide from Cystathionine- γ -Lyase in DNA Damage Response

Presenter: Cameron Cason

*Research Advisor: Dr. Christopher Kevil
Department of Pathology, Louisiana State University Health Sciences Center*

Recent evidence suggests that hydrogen sulfide (H₂S) plays a potential role in the prevention of cancer through interactions with the DNA damage response (DDR) pathway. ATR kinase is a key protein in the DDR which allows the stabilization of stalled replication forks, initiation of cell cycle checkpoints, and regulation of DNA replication firing. H₂S and ATR kinase have demonstrated reciprocal regulation, where activity of the kinase is dependent on low intracellular levels of H₂S. Active ATR kinase stimulates a major H₂S-synthesizing enzyme, cystathionine-γ-lyase (CSE), which restores intracellular levels of H₂S. When levels of H₂S are high it induces deactivation or suppression of the kinase; discontinuing the stimulation of CSE until H₂S levels decrease again. Due to the fact that overactivation of ATR kinase is tied to high proliferation and cancer of cells, it is crucial to understand the effects of silencing or amplifying CSE on the activity of ATR kinase. Since CSE activity is involved with ATR kinase, an inhibitor that could effectively target and suppress ATR and alter CSE activity to either amplify or silence it could be an optimized agent for cancer treatment. The aim of this study is to evaluate the effects on the protection and repair of DNA with altered CSE activity. This was achieved by using three transfected variants of CSE's active Ser346 residue from HEK293 cells to produce total silence or total amplification. This experiment comprises of sulfide-detecting assays and DNA damage-detecting COMET assays with UV-induced DNA damage versus unexposed with these variants.

6B. Effects of Cell Phone Use During Green Exercise on Immediate Emotional State

Presenter: Marco Basteris

Research Advisor: Dr. Anna Leal

Biology and Kinesiology, Centenary College of Louisiana

Physical activity performed outdoors, or green exercise, has physical benefits with the added advantage of improving mental health. Conversely, research shows that phone usage negatively affects college students. Increased cell phone use in this population has been linked to low physical activity and increased sedentary behavior; low academic performance; and increased anxiety. Therefore, the purpose of this pilot study was to determine if cell phone presence affects the anxiety- and stress-reducing properties of green exercise.

Eighteen college students were randomly assigned to a control group (without phone) or phone group (with phone) and completed a 45 minute-hike at a local wildlife refuge. Before and after the hike, subjects completed the nature relatedness scale (NR-6) and the Positive and Negative Affect Schedule-Short Form (PANAS-SF). These surveys measure participants' nature-relatedness, which is associated with environmental connectedness, happiness, and ecologically sustainable behavior and degree of positive or negative affect, respectively. Before, during, and after the hike ratings of perceived exertion (RPE) were taken. Subjects in the phone group also had phone use, including frequency of use and attention to phone recorded.

Based on our data, there was no significant difference between the two groups for the NR-6 or PANAS. RPE for the control group was 8.2 ± 0.6 pre-hike; 9.2 ± 0.6 mid-hike; and 9.0 ± 0.5 post-hike, while it was 8.9 ± 0.6 pre-hike; 9.5 ± 0.5 mid-hike; and 9.8 ± 0.5 post-hike for the phone group. There were no differences between these values.

While data collected failed to reach significance, results from this pilot study inform future directions. Next, we plan on increasing the length and difficulty of the hike while expanding the number of subjects. This will allow us to determine if cell phone use affects the anxiety- and stress-reducing properties of green exercise in college students.

7B. The Evolution of a Common Man

Presenter: Anna DiMaggio

Research Advisor: Dr. Cory Wikan

Hurley School of Music, Centenary College of Louisiana

Aaron Copland was a beloved composer who lived in the twentieth century. He was notorious for his “Americana” style which was known for its sweeping melodies and grand brass lines. Much of his career was spent writing in this hopeful style, but as the world shifted from war and disorder to comfortability and invention, Copland’s music also shifted. In his later works, he incorporated isolated elements of atonal theory into his music, which led to his music sounding more disjointed. This shift came because Copland was a man seemingly concerned with balance. His later works aim to balance a stable environment by adding art that is more chaotic just as he added uplifting music in times of disarray. Society has a profound effect on art, and Copland’s style often directly opposed his social climate. Examining three works, Billy the Kid, Application Spring, and Two Pieces for Piano, from each of Copland’s three periods explains and exemplifies Copland’s apparent desire for balance. This poster presentation will provide musical examples and written evidence of his shift throughout his career.

8B. Calibrating Millikan’s Oil Drop Apparatus

Presenter: Michael Smith

Research Advisor: Dr. David Kordahl

Physics, Centenary College of Louisiana

To calibrate our available measurement equipment, we have recreated Robert Millikan’s oil drop experiment for determining the elementary electric charge. Our process closely follows Millikan’s original experiment. We have measured the terminal velocity of charged oil droplets, both in freefall and when an electric field is applied. When oil droplets reach their terminal velocity in freefall, an upward drag force balances a downward gravitational force. When an electric field is applied, the droplets rise, and downward drag and gravitational forces balance the upward electrical force. By comparing these downward and upward terminal velocities, the electrical charges on individual droplets can be obtained. We observe these charges to be multiples of the elementary electric charge. We then compare our estimate for the fundamental charge with the accepted value to assess instrumental accuracy.

9B. Optical Rotation by Chiral Molecules

Presenter: Coby Harris

Research Advisor: Dr. David Kordahl

Physics, Centenary College of Louisiana

Optical rotation can be studied by observing how light's polarization axis changes as it goes through different concentrations of a sugar-water solution. As polarized light passes through a polarizer, its outgoing intensity depends on the relative angle of the polarizer to the incoming light's polarization axis. In this experiment, a red laser ($\lambda = 700\text{nm}$) is used as the light source. Light traverses an initial polarizer, a sugar-water solution, and a final polarizer before it reaches a galvanometer, which measures the intensity of light. Polarization is related to the direction of the oscillating electric field and magnetic field of a beam of light. Since sugar molecules are chiral, they can rotate the polarization axis. Chiral molecules don't have mirror symmetry. The orientation of the first linear polarizer stays consistent. The different concentrations of sugar in the sugar-water solution affect the polarization axis of light that gets to the second linear polarizer. The magnitude of the light's rotation depends on the sugar concentration. The optical activity of sugar molecules is quantified in this experiment, which may be used as an optics laboratory exercise in physics.

4:30-5:45 SESSION 6

6A. Social Sciences Panel (Mickle 114)

Moderator: Amanda Donahoe

Topic: Race and Representation

Research Advisor: Dr. Amanda Donahoe,

Political Science, Centenary College of Louisiana

1. Racial Health Disparities: The Pathway to Equity

Presenter: Jazzmyn Jones

Minorities and people of color have long suffered from disparities in healthcare that reflect longstanding structural and systematic inequalities rooted in racism and discrimination. Although recognition was two decades ago, many disparities persist, and in some cases, have widened. There is a obvious need for policy implementation upholding health equity. Through policy analysis, I will examine the impact of policy on the racial disparities present in healthcare to identify what kinds of policy are effective in combatting racial disparities in

health care. In this paper I ask whether policies supporting diversity, education, and awareness are effective in combatting racial health disparities. I expect to find support for my hypothesis that if policy supporting diversity, education, and awareness regarding racial disparities are further advanced and implemented, then we will see changes in the occurrence and continuity of systematic inequalities rooted in racism and discrimination present in healthcare. To test this hypothesis, I have collected data from numerous world health organizations, like the American Medical Association (AMA), the Center for Disease Control and Prevention (CDC), and the United States Department of Health and Human Services. I will conduct a deep analysis of the policies implemented by these organizations in the attempt to combat racial health disparities and the goal is to demonstrate the impact of the intersectionality of policy and disparities.

2. Indigenous Representation: preventing future discrimination

Presenter: Caleb Smith

Indigenous representation in government is key to alleviating many issues Native Americans face while also addressing trauma from policies implemented in the past. There is a clear need for more Native American involvement in government policy and decision making especially if the decision making affects Native American reservations or communities. This leads me to my research question “Does Native American representation in government have any effect on the recognition of Native American sovereignty or Native American rights? If so, is there any correlation in policy decisions or policy making?”. I expect that if States have Native American representation within their local and state governments, then they will be less likely to discriminate against Native Americans or disregard Native American sovereignty. This is important to understand because it could have major implications on the way we look at diversity in our local, state, and federal governments while also demonstrating how we can begin to demarginalize communities that have traditionally been oppressed or silenced. This will be a plausibility probe case study in which I will be looking for cases that do or do not exemplify my theory which in turn I will use to strengthen my hypothesis. The goal is to demonstrate a correlation between descriptive representation of a Native American population within a state and the states positive or negative relationship with the recognition of Native American sovereignty and rights.

3. The Right to Vote: the effects of Disenfranchisement on Recidivism

Presenter: Christine Goodman

America has one of the highest prison populations in the world. Known for democracy and freedom, the incarceration rate does not reflect that. Voting is a system that is used to create a functioning democracy. It is an established right that can be removed when someone is imprisoned. There is no federal law about how long or in what way that the right to vote can be revoked from people who have been incarcerated, it is left to the states to decide. I propose that states with laws with lower restrictions on re-enfranchisement for people who are or have been imprisoned will have lower recidivism rates than states who have more restrictions. Recidivism rates are defined as the amount of people who return to

prison after a set amount of time from their original release. Again the states vary with how long that time is, usually between 3-5 years. I am using data from all 50 US state's government most recent annual reports for recidivism. For each state I will analyze the felony rates of people who have returned in the fiscal years that have been provided by the state and analyze it with the law that was existent when that data was beginning to be collected, so at the time of the release. This is conducted as a limited cross-sectional study to determine the possible correlations and effects that less restrictive laws on ex-convicts voting can have on recidivism. The limitations of the study include the different definitions and timelines for data collection, the differences though are also what is being tested to make the case for correlation.

4. They Don't Want Us to Win: Examining the Effects of At-Large Voting on Black and Brown Communities

Presenter: Markiese Boykin

Voter dilution has a long history in America for marginalized groups, such as Black and Brown people. Voter dilution is still a very current reality for these marginalized groups today. My research examines the election process known as at-large voting in local elections. In this political process all, political candidates are placed on the ballot, and the top winners are elected regardless of where they live in the city. Black and Brown people in America have long claimed that this system of voting dilutes the voting strength of their communities. In examining the impact at-large voting has had, I include past Supreme Court cases on at large voting such as *Mobile v Bolden* (1980) and *Rodgers v Lodge* (1982) to show the flip-flop success these groups have in advocating their arguments through the judicial system. The opinions of the Supreme Court have changed so often due to Section 2 of the 1965 Voting Rights Act, where in many cases Black and Brown communities were required by the court to prove at-large voting diluted their voting strength. After examining the voting dilution of at-large voting, I then include workable solutions to preventing voting dilution such as single member district voting and ranked choice voting.

6B. Humanities Panel (Kilpatrick)

Moderator: Jama Grove

Topic: Examinations at the Intersection of Law and Humanity

*Research Advisor: Dr. Jama Grove,
History, Centenary College of Louisiana*

1. Repeating Narratives: CRISPR Technology and American Eugenics

Presenter: Renee Katz

When reflected upon, the American eugenics movement is universally condemned. The implementation of eugenics within the country is taught as one of the major failures of this nation. The two types of eugenics are positive eugenics and negative eugenics. With

positive eugenics, people with traits deemed desirable are encouraged to reproduce, while Exploitation negative eugenics aims to prevent people with desirable traits from reproducing. Now, in the midst of the genetic revolution, the language of both positive and negative eugenics has returned. Genetic engineering technology, specifically CRISPR-Cas9 technology, is currently being used in the hopes of eliminating negative traits from the population. However, there are many scientists who, when reflecting on the potential of this emerging technology, describe how this technology can be used to improve the human race by creating more intelligent, stronger, and healthier human beings. With a lack of regulation or ethical guidelines established for this emerging technology, the possibility for genetic engineering technology to be used for eugenics is an alarming possibility. This paper analyzes the language used during the twentieth century eugenics movement and the language used when discussing CRISPR-Cas9 technology today to evaluate the potential for eugenics ideals to once again become widespread. This analysis will include historical documents written on the eugenics movement as well as recent publications focused on the future of genetic engineering technology.

2. How to Cure a Lack of Profit: Advertising Patent Medicines in Early Twentieth Century America

Presenter: Dani Kimmey

The advertising methods of late nineteenth century and early twentieth century patent medicines were early examples of growing consumerism and the creation of the modern brand. This can be seen through the epic tales of supposed discovery told through advertising brochures, the use of distinct patented bottles, slogans to appeal to new safety concerns, and others. These advertising methods were reproduced later in the twentieth century as companies developed the modern version of a brand and began to use flashy displays to draw consumers in. What were the trends of patent medicine advertising prior to the Pure Food and Drug Act? How were they changed after Americans grew concerned with food purity and safety? Patent medicines set the precedent for the other non-medicinal companies in many areas including advertising as well as trademarks and claims with no proof.

3. The Exploitation of Hispanic Immigrants in the 20th Century

Presenter: Xavier Noyola

For the research conference, I have decided to focus my topic on the modern enslavement of Hispanic immigrants in 20th-century America. My research will primarily be on the time period of 1942 through 1964, mostly focusing on the inhumane treatment of illegal immigrants forced to work in the agricultural fields in the United States. By doing this I will provide accounts demonstrating the brutality and hardships the undocumented workers were put through, providing images and also some of the worker's experiences during this time. However, most of my project will be talking about how America abused the bracero program and the people involved with it, even if it was not their intention. Some of the questions I will be addressing will be: Why did America not provide more resources to the

workers involved in this program? Why did the American government not intervene and set more ethical and humane standards for companies employing these immigrant workers? How has the long-term effect of the bracero program promoted racial injustice to Hispanic immigrants in America? Also, I will be providing detailed information about the amount of money companies made off the use of undocumented immigrants during this time. In conclusion, the final argument I will be making throughout my research will shed light on how Hispanic immigrants were blatantly a part of a system designed to keep them working for pennies on the dollar, meanwhile being constantly threatened with deportation and separation from their families and prompting a new type of enslavement in mid-20th-Century America.

Dinner in Lot 1 sponsored by C.A.B. and Sodexo