



**2022 virtual symposium**  
undergraduate research  
and creative works  
thursday      april      21

**Simmons**  
UNIVERSITY

## Table of Contents

Symposium Planning Committee	5
Keynote Speakers	7
3D Awards	13
Featured Panels	19
Studio Art	37
Photography	45
Video Exhibit	51

# Welcome!

The annual Undergraduate Symposium recognizes undergraduate student scholarship across all four colleges and 61 majors and programs. Students present their senior capstones, research projects, creative works, internships, data science projects, and other works in a full day of synchronous and asynchronous presentations. Since its debut in 2004, the Symposium has hosted nearly 3,700 student presenters.

The 2022 Undergraduate Symposium consists of two parts:  
**Live Panel Presentations & Video Presentations.**

This year's featured live panels and videos highlight a range of interdisciplinary topics across disciplines, including including human-computer interactions, access and equity in higher education, modern American identities and ideologies, environmental conservation, cultural preservation, public health, representations of gender and identity in literature, film, the arts and media, and more. **Join us in celebrating the works of these accomplished scholars!**

The Simmons Undergraduate Symposium is hosted by the Office of Undergraduate Research and Fellowships and the Provost's Office. Visit [simmons.edu/undergraduatesymposium](https://simmons.edu/undergraduatesymposium) to view this year's student presentations.

# Organizers

## **Office of Undergraduate Research and Fellowships**

The Office of Undergraduate Research and Fellowships (URF) is committed to supporting the intellectual curiosity, creativity and scholarly development of Simmons students. We work closely with students to locate research and funding opportunities, fellowships, and faculty mentors to advance their major, academic and career goals.

Office of Undergraduate Research and Fellowships  
Center for Student Success - Lefavour  
2 Avenue Louis Pasteur  
Boston, MA 02115  
[ugprogram@simmons.edu](mailto:ugprogram@simmons.edu)

**Nakeisha M. Cody**  
Assistant Provost

**Jaime Libowitz**  
Operations Manager, Undergraduate Programs

**Rachel Oshinsky**  
Fellowship Advisor

**Martha Whitmore**  
Undergraduate Symposium Print & Web Designer

# Contributors

**A special thank you to the following departments and individuals for their contributions:**

## **Simmons Department of Art and Music**

**Helen Popinchalk**  
Assistant Professor  
Department of Art and Music

**Edie Bresler**  
Professor of Practice & Photo Lab Coordinator  
Department of Art and Music

**Luke Romanak**  
Assistant Director  
Student Media and Academic Technology

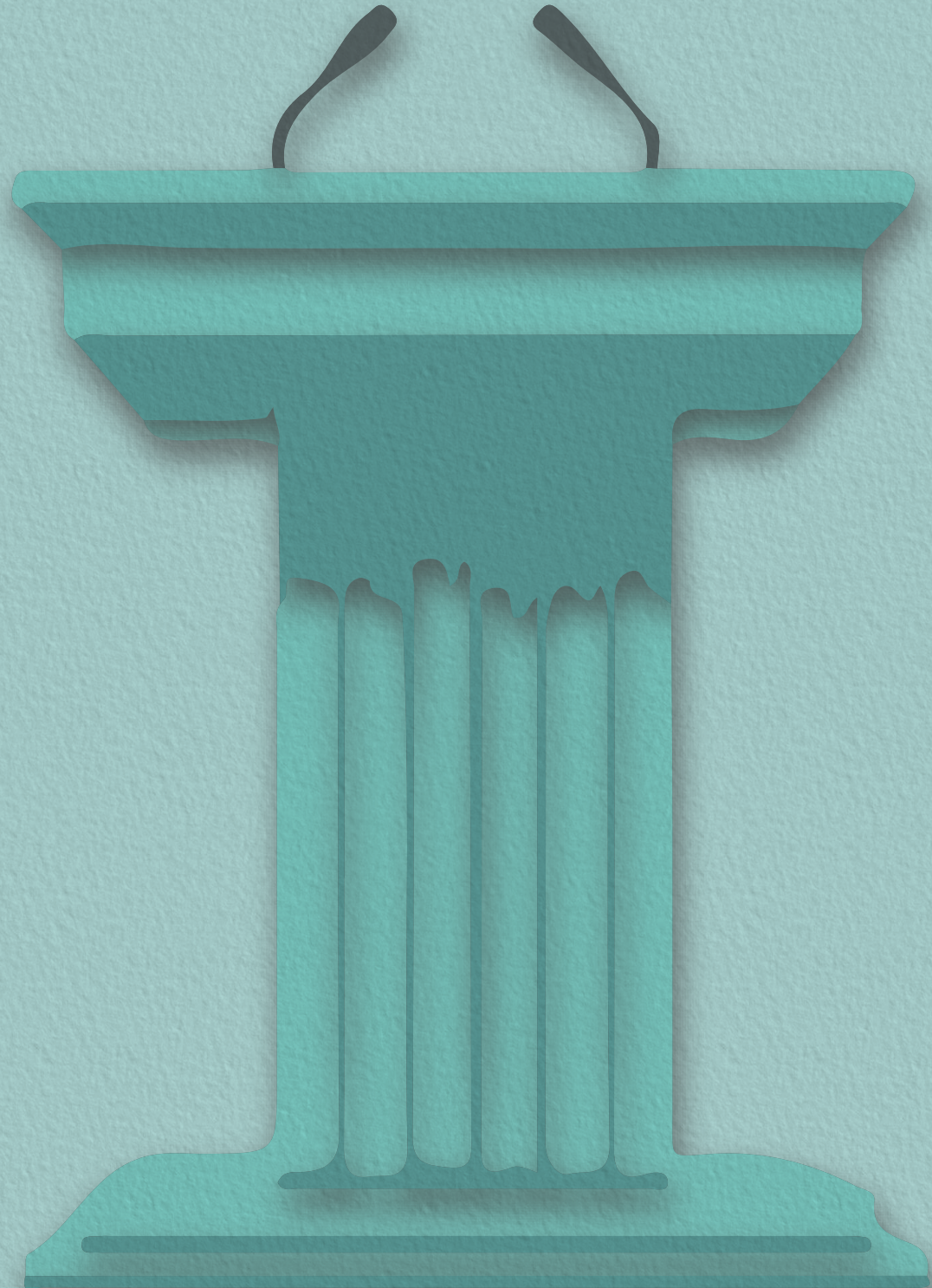
**Michael Correia**  
Senior Content Management  
Systems Administrator / Web Designer

# Keynote Speakers

**12:15 - 1:15 PM ET**

The 2022 Keynote Speaker Award is presented to three graduating seniors with outstanding projects in their disciplines. Keynote speakers are selected based on the following criteria:

**1** Project includes a compelling thesis, idea, or message; **2** Demonstrates scholarly and imaginative engagement in the subject; **3** Topic is of interest to a wider audience; **4** Represents a significant contribution to or impact on a disciplinary field, community, or global arena.





**Eliot Stanton '22**  
**Major: Data Science**  
**Faculty Mentor: Lena Zuckerwise**

**Binaries in Binary: Harmful Consequences and  
Radical Possibilities of Technology for Trans Liberation**

In this paper, I examine the impacts of technology on transgender lives, identities, and movements. Through an analysis of discourses, I consider the ways activists and movements, aiming to better the lives of trans people, have been absorbed into systems of capitalism and neoliberalism. This has watered down their goals, emphasizing legal equality, inclusion, and recognition, rather than more radical aims. Consequently, technological systems “include” trans identities through updated gender categorization schemes in data, and they recognize trans people by viewing transness as an individual phenomenon, not a shared identity. These qualities of technology reinforce a white and medicalized trans

narrative that reinstates the gender binary instead of upending it. Ultimately, technological and gender systems produce harmful consequences, from surveillance and misgendering to exclusion and forced outing, resulting in vast inequality among trans populations. Nevertheless, creative uses of technology have shown that it can be liberatory for trans people, challenging the gender binary and enabling movement-building. Turning to an imaginative future for technological systems, I argue that they must be community-centered, designed according to liberatory values, and detached from capitalist funding and the state’s agenda of control in order to lead to radical structural change.



**Sumeya Ali '22**  
**Major: Sociology**  
**Faculty Mentor: Jyoti Puri**

**Nexus of Blackqueerness & Anti-Muslim Racism**

This paper focuses on how Black, Muslim, and immigrant women and femmes can be seen as queer regardless of their sexual and gender identities. Employing an intersectional approach to understanding the construction of queer identity, this paper considers gender, sexuality, and socioeconomic status alongside the multi-dimensionality of Black femininity. The radical tradition of Black feminism offers the understanding that several systems of oppression can compound to create a particularly unique lived experience. By applying this framework of Black feminism to the lives and social experiences of Black, Muslim immigrant women I will demonstrate that this particular combination of social identities results in a particular experience of othering that is a process of queering. I will explore how the experiences of Black immigrant

women/girls can be understood as parallel to that of queer identity. I consider how current definitions of queerness allow us to contextualize the lives of Black, Muslim immigrant women/girls. I analyze how colonial ideologies shape the ways xenophobia, othering, and misogynoir challenge the quality of life for Black girls/women. Specifically, I focus on how immigration status shapes the lived experiences of Black Muslim girls and women. Immigrant Black girls/women will face more challenges in the nation they have immigrated to. Furthermore, in this paper, I highlight barriers surrounding finding work, housing, and adequate resources. Lastly, I emphasize that while Black girls and women face structural racism, I expect there to be differences among their experiences since Black girlhood/womanhood is not a monolith.



**Sara Mitchell '22**  
**Major: Economics, Sociology**  
**Faculty Mentor: Masato Aoki**

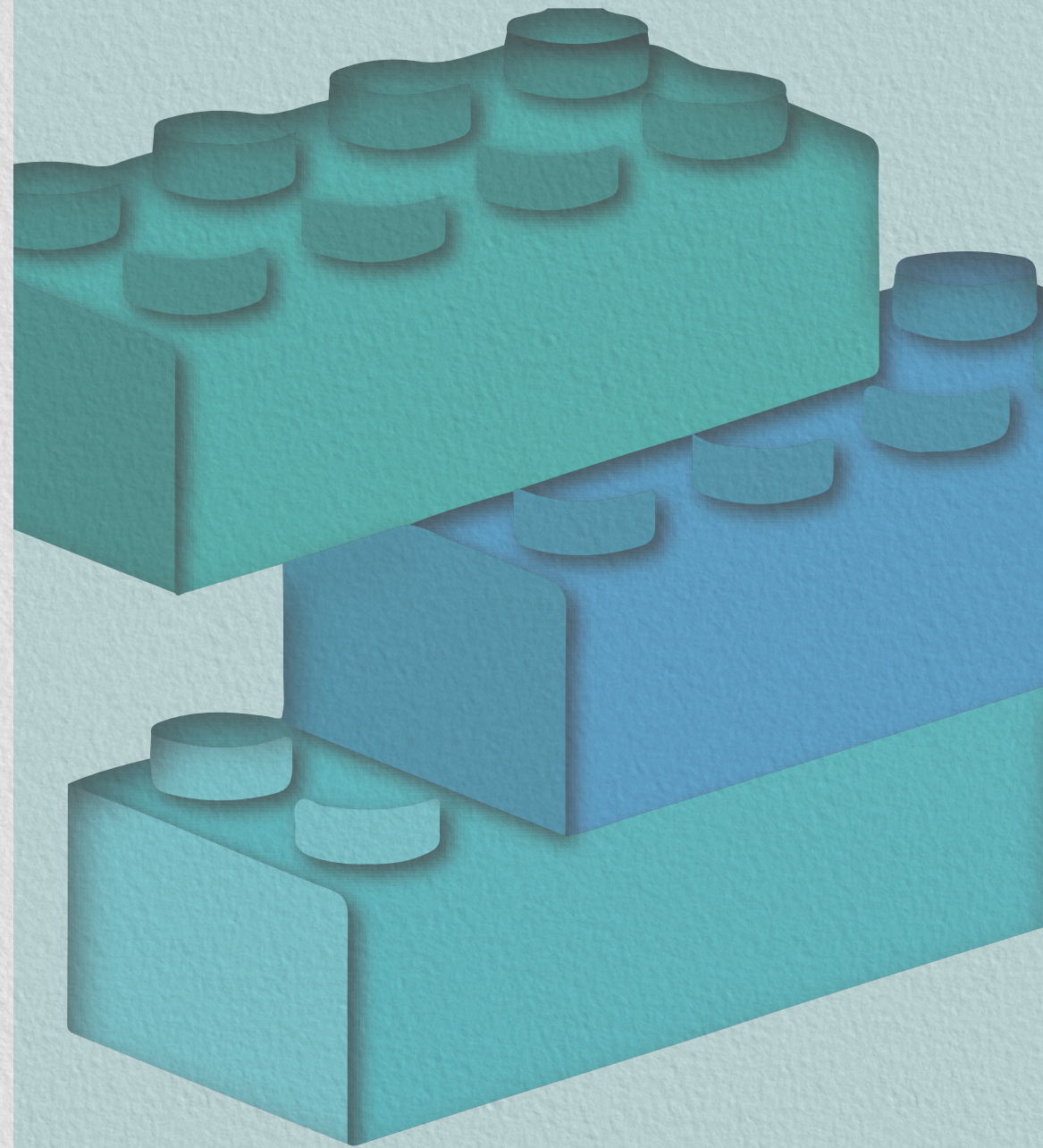
**Access, Success, and Social Mobility: Rethinking Low-Income Student Access to Different Tiers of the Higher Education Market Following the Great Recession**

Though not a panacea, higher education has always been a key to social mobility for low-income students. The Great Recession limited social mobility, weakening the financial stability of low-income families and reducing state and federal funding to colleges and universities across the country. Low-income students are concentrated in less selective schools that are accessible from a financial standpoint, but fail to provide the brand value and networks that improve social mobility. Elite universities maximize social mobility for low-income students, and yet low admission rates and the lack of resources for low-income students make these institutions very inaccessible. Often left out of this analysis are the middle-tier institutions that possess the accessibility

and capacity to help many low-income students ensure their success. This project aims to rethink the role of institutions across different tiers of the higher education market in order to increase access to higher education, and therefore social mobility, for low-income students in the years following the Great Recession. Middle-tier colleges are missing a golden opportunity to raise their profile as a gateway to social mobility for low-income students. By analyzing trends in higher education following the Great Recession, this research will show how middle-tier colleges can take advantage of their position in the higher education market and explain how the standard binary approach to higher education fails low-income students.

# 3D Awards

The 3D Award acknowledges exemplary student work in Design Across Diverse Disciplines (3D), which enables students to create, design and propose a cluster of three courses that may assist them in better understanding and addressing an issue from various disciplinary perspectives.





**Brianna Desharnais '22**  
**Major: Neurobiology, Music Performance**

**3D: Access to Medicine Initiatives in Low-and Middle-Income Communities**

**3D Courses: SOCI 241: Health, Illness, & Society, LANG 1411: Spanish for Healthcare Professionals, CHEM 225: Organic Chemistry II**

In a world where scientists have developed immunizations and anesthesia, it is difficult to understand why two billion people around the globe do not have access to basic medical care (WHO, 2017). The most popular way of addressing these Access to Medicine (AtM) barriers is through donation programs, where pharmaceutical companies give money, medical equipment, and/or medicine to low- and middle-income communities (LMICs). These programs act as band-

aids that quickly re-expose AtM problems once funding is removed. Other common AtM problems include physician-patient language differences and preventable surgical site infections, which can also decrease quality of care. Important factors in starting to tackle the many AtM barriers experienced by LMICs include understanding LMICs' experiences of healthcare from a socioeconomic perspective, finding sustainable solutions, and addressing language barriers. By attacking the problem of AtM barriers from multiple interdisciplinary perspectives, access to quality healthcare can be improved around the globe.



**Estela Raya-Fouts '24**  
**Major: Political Science, Spanish**

**3D: Intersections of Immigration: An Analysis of Migration Through the Lens of Politics and Culture**

**3D Courses: HUM 370: Employment Services Internship with IINE, POLS 215: The Politics of Exclusion, SPAN 265: 20th-Century Hispanic Short Story**

My 3D project consists of a HUM 370 internship for my Migration Studies minor, POLS 215: The Politics of Exclusion, and SPAN 265: 20th-Century Hispanic Short Story. I believe that the intersection of these three fields provides an interesting perspective on the issue of migration throughout the world. Over the summer of 2021, I completed a 12-week internship at the International Institute of New England (IINE), a refugee resettlement agency in Manchester, NH, where I served as an Employment Services Intern. I developed a greater understanding of the U.S. refugee resettlement program and the legal statuses of different immigrants as they arrive in the U.S.

During my junior or senior year, I will take The Politics of Exclusion, which evaluates the incorporation of ethnic and racial minorities in American politics after the civil rights era and considers the relationships between racial minority groups, political participation, and policy issues. This course will establish a basis for discussing racism that I can use in the future to identify and work against nativist sentiment in the U.S. Finally, I will enroll in 20th-Century Hispanic Short Story, which utilizes Spanish American 20th-century fiction to explore social and political issues in Latin America. Immigration from Latin America continues to be an important political issue in the U.S., and I believe that this course will shed light on the reasons people continue to migrate from the region and the cultures they bring with them.





**Shakyra Antoine '22**  
**Major: Sociology**

**3D: A Holistic Approach to Social Action**

**3D Courses: COMM 269: Globalization and Intercultural Communication, POLS 223: Human Rights: The Basic Dilemmas, BUS 224: Social Action Leaders**

I was initially inspired to develop my 3D narrative through one of the courses in my cluster (Social Action Leaders), in which our class developed a social action campaign supporting the UN's HeForShe movement. Each week, the TA for our class would present us with a new social media platform or digital content creation site to test drive while we continued formulating and implementing

our campaign. The goal of these exercises was to develop a digital "tool kit" that would allow us to gain more supporters and create meaningful content. This tool kit inspired me to consider how I could create my own tool kit that would lay the foundations for any future social activism I wished to engage in. My 3D project, "A Holistic Approach to Social Action," allowed me to explore the idea of social activism by developing culturally competent communication skills, gaining historical context on social activism, and developing the technological skills necessary to be an effective social change agent.

# Featured Panels



# Computer Science: Breaking Down Barriers in Human-Computer Interactions

9:00 - 10:00 AM ET

Presented by: **Chelsea Hua '24, Livic Inoa '22, Melat Ali '22, Nardos Alemu '24, Wanjing Li '22, Samin Charepoo '22, Ismah Ahmed '22, Tabitha Miles '22, Julia Hartnett '22, Megan Willis '22**

This panel explores innovative pathways in computer science for breaking down the barriers in human-computer interactions, thereby enhancing accessibility. Automatic Speech Recognition (ASR) has evolved widely. However, so far, only the more popular languages have been able to reap the benefits of having such technology at their disposal. The ASR group researched the design of an ASR system for low-resource languages, starting with some of our group's native ones - Amharic and Vietnamese. Our goal is to create a Siri/Alexa-like program that transcribes these languages automatically.

The spoken language not only helps formulate words, but allows us to gather a wide range of useful information about timing, intonation, prominence, phrasing, voice quality and rhythm which account for speech prosody. By using tools such as Pratt to label PoLaR annotations (based on

Points, Levels and Ranges) and clinical experiments, we can see the intricate details of how an individual talks and what they infer by their tones, speech, sounds and more. The Prosody group will discuss the methods we used to analyze over 100 speech files to inform qualitative observations of human speech, creating files on the frequency of vocal cords and speech. In addition, we have updated existing R and python code to improve run functions that allow for automatic data analysis.

Finally, the Education group will discuss breaking down barriers to entering the CS profession by examining the rise of Coding bootcamps as an alternative pathway to the industry.



# Violence and Identity in Francophone Literature (Presented in French)

10:00 - 11:00 AM ET

Presented by:

**Beatrice Crocker '24**, *Sexualité et identités queer dans «L'Armée du salut» d'Abdellah Taïa*

**Georgia Harper '22**, *Fanon et «Nedjma»*

Students will present individual projects exploring themes of violence, identity, sexuality, and power. They will examine Abdellah Taïa's *L'Armée du salut* (2006) and Kateb Yacine's *Nedjma* (1956).

# Oppression and Hope in Spanish Literature and Film (Presented in Spanish)

11:00 AM - 12:00 PM ET

Presented by:

**Julia Wilen '24**, *Cambios sociales en España: los derechos de la comunidad LGBTQ+ y de las mujeres (Social Changes in Spain: LGBTQ+ and Women's Rights)*

**Chloe Crelia '22**, *La redefinición de la familia y la superación de la brecha generacional en España (The Redefinition of the Family and Overcoming the Generation Gap in Spain)*

**Estela Raya-Fouts '24**, *Sistemas paralelos de explotación: un análisis de También la lluvia (Parallel Systems of Exploitation: an Analysis of También la lluvia)*

In this panel students will present individual projects exploring themes of exploitation and overcoming in contemporary Spanish literature and film. They will examine social changes, such as the rights of the LGBTQ+ community, Women's Rights, the generational divide and family dynamics through short stories by Óscar Esquivias, Manuel Rivas, Paloma Díaz-Mas, and Rosa Montero. The panel will also study Spain's colonial past in Latin America and its ramifications today, by analyzing the film *También la lluvia*, by Icíar Bollaín.

# Senior Keynote Speaker Awards

12:15 - 1:15 PM ET

**Eliot Stanton '22** (Data Science), Binaries in Binary: Harmful Consequences and Radical Possibilities of Technology for Trans Liberation

**Sara Mitchell '22** (Economics, Sociology), Access, Success, and Social Mobility: Rethinking Low-Income Student Access to Different Tiers of the Higher Education Market Following the Great Recession

**Sumeya Ali '22** (Sociology), Nexus of Blackqueerness & Anti-Muslim Racism

The 2022 Keynote Speaker Award is presented to three graduating seniors with outstanding projects in their disciplines. Keynote speakers are selected based on the following criteria: 1.) Project includes a compelling thesis, idea, or message; 2.) Demonstrates scholarly and imaginative engagement in the subject; 3.) Topic is of interest to a wider audience; 4.) Represents a significant contribution to or impact on a disciplinary field, community, or global arena.

# Re-Envisioning Modern America

1:30 - 2:30 PM ET

Presented by:

**Anna Boyles** '22, *The Mansion on Mill Street: Constructing Jackson, Mississippi's Red-Light District*

**Maggie Clancy** '22, *National Parks and Recreation*

**Lauren Howard** '22, *Executive Excedrin to Mother's Little Helper: Race and Gender in the 1950s Miltown Mania*

**Miranda Leclerc** '23, *Queer Nostalgia and the Closet: Class Identity and Aestheticism in Charlie Gibson's Recreation of Victorian Masculinity*

**Madeline Short** '22, *Gender Wage Gap: Teachers of Hillsborough County, NH, 1878-1890*

This panel gathers historical research capstones by undergraduate seniors that interrogate identities and ideologies in the U.S. from the late 19th century through the 1960s. How did cultural expectations shape the way Americans thought about work and leisure, health and sexuality, in the modern era? Using diverse sources and methodologies, these place-conscious projects examine how gender and class played out across wild, rural, suburban, and urban geographies.



# Exploring Public Health, Environmental Conservation, and Cultural Preservation Through Experiential Learning



2:30 - 3:45 PM ET

Presented by:

**Shania Ambros** '22, Cordigo Artspace: Sharing Cordilleran Cultural Knowledge through Art

**Emma Keeling** '22, Exploring the Intersection Between Upstream and Downstream Approaches to Domestic Violence Work

**Beyza Erdem** '22, Focused Ultrasound Mediated Drug Delivery of an AAV-9 Packaged Gene Therapy for Huntington's Disease

**Maggie Clancy** '22, Facile Methods for Reusing Laboratory Plastic in Developmental Biology Experiments

**Hena Haque** '22, The Characterization of Food Preservation Coatings Using Scanning Electron Microscopy (SEM)

**Lauren Howard** '22, For I Will not be a Party Man: Partisanship and Party Conflict in the Adams Administration

In this panel, students will present their PLP projects across a variety of disciplines and share what they have learned through research, artistic endeavors, and internships. The six projects explore diverse topics but all address one of two themes: 1.) Using science to advance public health and environmental conservation; 2.) Preserving, analyzing, and sharing history and culture.

The Passionate Leaders Project (PLP) supports undergraduate students seeking to enrich their academic and professional interests by funding learning opportunities beyond the boundaries of the traditional classroom. Students may request up to \$4,000 through the PLP to fund a variety of activities, including, but not limited to: global experiences, research, internships, service projects, and creative endeavors.



# Pan-Africanist Women in History and Politics

4:00 - 5:00 PM ET

Presented by: **April Beatty '25, Danielle Donovan '25, Kaz Gebhardt '25, Nyree Skye White '25**

This panel emerges from the honors Learning Community on Black Transnationalism. Students conducted final research papers on Pan-African women, drawing on their own original primary- and secondary-source research. These presentations shed light on a history and political-science scene too often dominated by men. The women covered in this panel include: Louise Thompson Patterson, an African American communist social worker; Angela Davis, an African American activist and author; and Claudia Jones, the Trinidadian woman responsible for founding London's famous Notting Hill Carnival.



# Kids, College, and Costs: An Interdisciplinary Approach to Education in the 21st Century

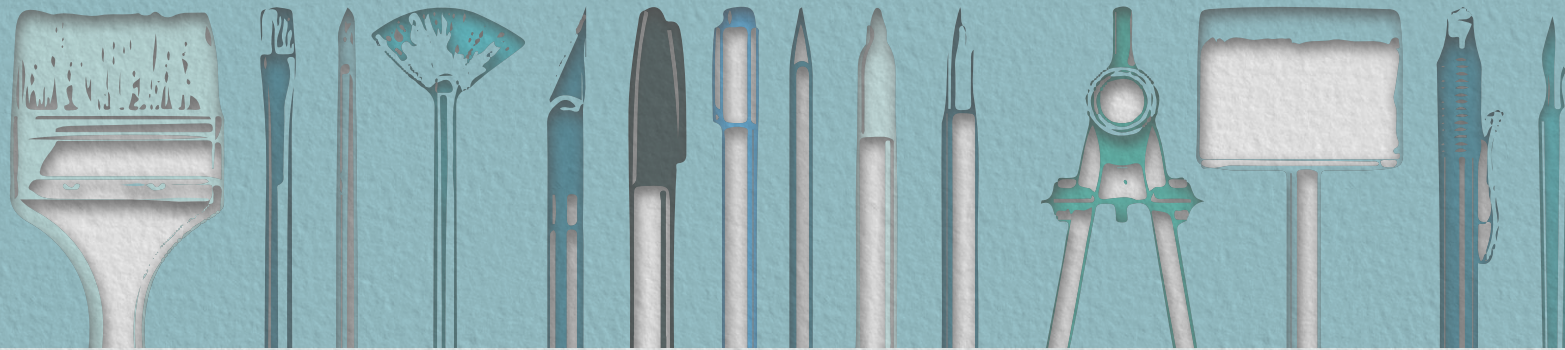
5:00 - 6:00 PM ET

Presented by: **Lauren Lanseigne '22**, **Sara Mitchell '22**,  
**Madison Poshkus '22**

Education governs the life of young people for their childhood, adolescence and into adulthood, and it is clear that the educational system in the 21st century is unlike it has ever been. Events ranging from the 2008 financial crisis to the racial reckoning of Summer 2020 have had massive impacts on American education. By considering the lens of teaching practice, economic analysis, policy implementation, and the allocation of budgetary funds, we structure a holistic understanding of the overarching issues as they impact the educational system nationally. This panel features projects that highlight the different ways the American education system has fundamentally changed in the last twenty years, ranging from curricula in the classroom to access in higher education and the development of education policy in Massachusetts.

Together, these projects work to consider the ramifications of educational inequality, funding disparities, and significant cultural and economic events in schools across the country.





# Spring Studio Exhibit: **SAP'S RISING!**

Get excited for the spring 2022 Studio Art Showcase! While our creative energy is always flowing, *Sap's Rising!* celebrates the incredible collective efforts of our studio art students and faculty. The spring semester finds us happily ensconced in our studios, darkroom and labs, bringing vitality, imagination and ingenuity to projects in photography, printmaking, sculpture, book making, drawing, painting and more.

This video features work from over 150 Simmons students in thirteen art classes. Curated by the Simmons Department of Art and Music.

# SAP'S RISING!

## Artists:

**ART 111: Draw What You See (Prof. Guhapriya Ranganathan):**

Alexis Mackay, Annika Kozlowski, Britney Bui-Tran, Caitlyn Bucci, Charlotte Rice, Dana McKinnon-Tucker, Emily Plummer, Geraldina Cruz, Juno Mawaka, Leah Glassman, Micaela Hersch, Sarah Defanti, Wanjing Li, Yohanna Konardi

**ART 111: Draw What You See (Prof. Jennifer Moses):**

Maya Cohen, Jesenia Hernandez, Madison Snyder, Paige Damico, Maya Dube, Lindsay Kenney, Emma Ouellette, Maggie Thibault, Nayeli Sanchez, Gabriela Hernandez, Vy Le, Calla Savelson, Jordyn Thompson, Taylor Burton-Ferrar

**ART 112: Color Studio (Prof. Michael Zachary):**

Alexis Agostinelli, Alia Jazmati, Anni Dou, Enkue Assayehgen, Justice Randolph, Lane Martin, Liz Adesso, Marishcha Fils-Aime, Melissa Canelas, Mimi Nguyễn, Mollie Silverman, Nicole Morison

**ART 117: Printmaking (Prof. Helen Popinchalk):**

Catherine Marcus, Chloe Barber, Crystal Huang, Grace Cronin, Hope Pollard, Jacey Krueger, Jillian Howard, Katie Desormie, Luorong Lamu, Ngoc Le, Rachel Buder, Rebecca Heaney

**ART 119: Sculpture (Prof. Michael Zachary):**

Caitlyn Bucci, Julia DiGiacomo, Haley Dover, Katie Little, Rachel Malek, Bella Manzi, Kelsey McGrath, Marissa Montalto, Paria Reich, Emma Ross, Taylor Walsh, Megan White

**ART 121: Artist's Books (Prof. Helen Popinchalk):**

Ashley White, Caitlin Tolpin, Hailey Tran, Hannah Bishop, Jackie Manolian, Katie Ashe, Maddie Steffenson, Maddie Short, Misbah Rindani, Mk Goodwin, Ngoc Le, Sara Getman

**ART 138: The Poetry of Photography (Prof. Edie Bresler):**

Eri O'Brien, Simone Grosswiler, Mae Blackwell, Hannah Lebric, Cherry Le, Sita Alomoran, Jen-Li Barry, Daniela Gil Veras, Jenna Squasoni, Zoe Robertson, Mariana Jaramillo, Anna Lacy

**ART 139: Color Digital Photography (Prof. Edie Bresler):**

Olivia Mathelier, Addie Sargent, Sophie Castleman, Vy Le, Amanda Perry, Anna Hehir, Stephanie Moscaritolo, Hannah Kearney, Ailia Rochefort Aden, Michaela Hayes, Mia Brown

**ART 139: Color Digital Photography (Prof. Lisa Kessler):**

Lucy Clauson, Chloe Crelia, Lezdy Bonilla, Clara Winkler, Lena Weymouth, Isa Navarro, Steffi Gaehde, Eileen Riley, Mintou Barry

**ART 221: About Face: Portraits Now (Prof. Colleen Kiely):**

Abbie Bruyere, Lindsay Elba, Cherry Le, Anna McGuinness, Tyler McShelfrey, Grace Russell, Maddie Steffenson, Taicha Valbrune, Chrystal Valentin, Lia Vichi, Taylor Walsh, Ava Poole

**ART 231: Data as Art: The Personal and the Political (Prof. Michael Zachary):**

Hawa Abdi, Lexi Benton, Maria Carmona, Cat Ciulla, Yasmin El-Faramawi, Amanda Farrington, Sarah Fogerty, Maddy Guettler, Katie Lara, Marina Drake, Sunday Ntoto, Liz Palmer, Charlotte Peace, Becca Plumb, Kiki Regan, Amani Semper, Yukti Sharma, Minh Anh Tran, Julie Vaz, Anek Yen, Olga Zhizhin

**ART 237: Advanced Black & White Photography (Prof. Edie**

**Bresler):** Mia McGillicuddy, Amanda Farrington, Lia Vichi, Natalie Starszewski, Isabel Babicz, Lucia Escobar, Grace Cronin, Hannah Bishop, Dani Caisse, Clarissa Van Sickle, Victoria LaVelle, Lennon Sherburne

**ART 331: Painting Outside the Box (Prof. Colleen Kiely):**

Mae Blackwell, Olivia Bozuhoski, Paula Espinoza, Alicja Fitzpatrick, Steffi Gaehde, Erika Jung, Annika Kozlowski, Kelsey McGrath, Miranda McSherry, Gracie Rosado, Clarissa Van Sickell, Helena Bigelow

# SAP'S RISING!



Steffi Gaedhe | mixed media on paper



Calla Savelson | graphite on paper

# SAP'S RISING!



Catherine Marcus | drypoint etching



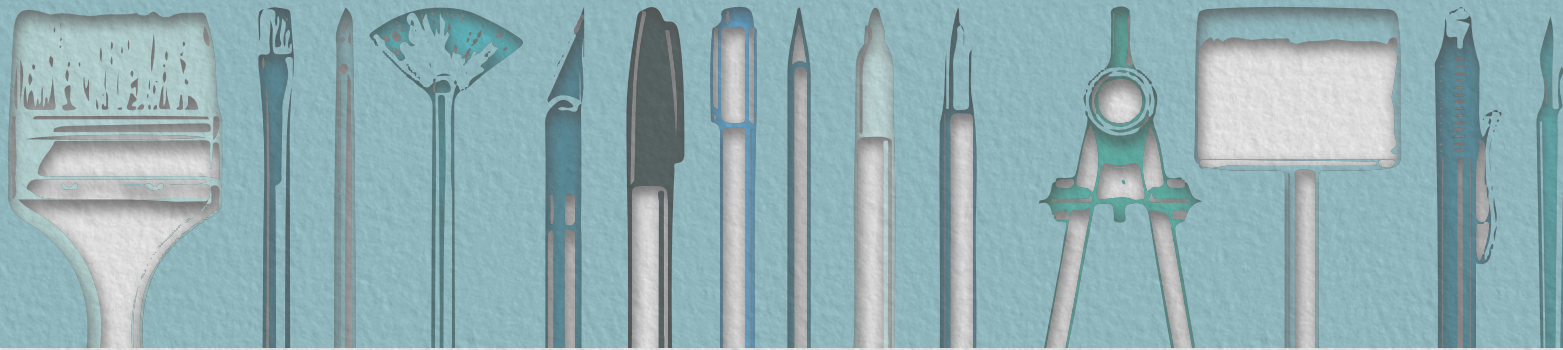
Anni Dou | acrylic gouache on paper



Isa Navarro | pigment inkjet print



Hannah Lebrie | gelatin silver print



# Portrait Photography: People, Places, and Meaning

*People, Places, and Meaning* explores how photographs communicate meaning and foster connection. Through a variety of new processing, printing, and shooting techniques, students expand their creative approaches. 138 students use analog black and white film and manual SLRs and then craft prints in a darkroom, while 139 students use digital files made with manual DSLRs, creating pigment ink prints. All students engage intentionally with ideas around the gaze, body language and background context.

Advanced students are expanding the language of photography even further through advanced in-camera and in-darkroom manipulations.

This video features the work of Simmons students in ART/COMM 237: Advanced Black and White Photography

(Prof. Edie Bresler), ART/COMM 138: Poetry of Photography (Prof. Edie Bresler), ART/COMM 139-01 Color Digital Photography (Prof. Edie Bresler), ART/COMM 139-02 Color Digital Photography (Prof. Lisa Kessler).

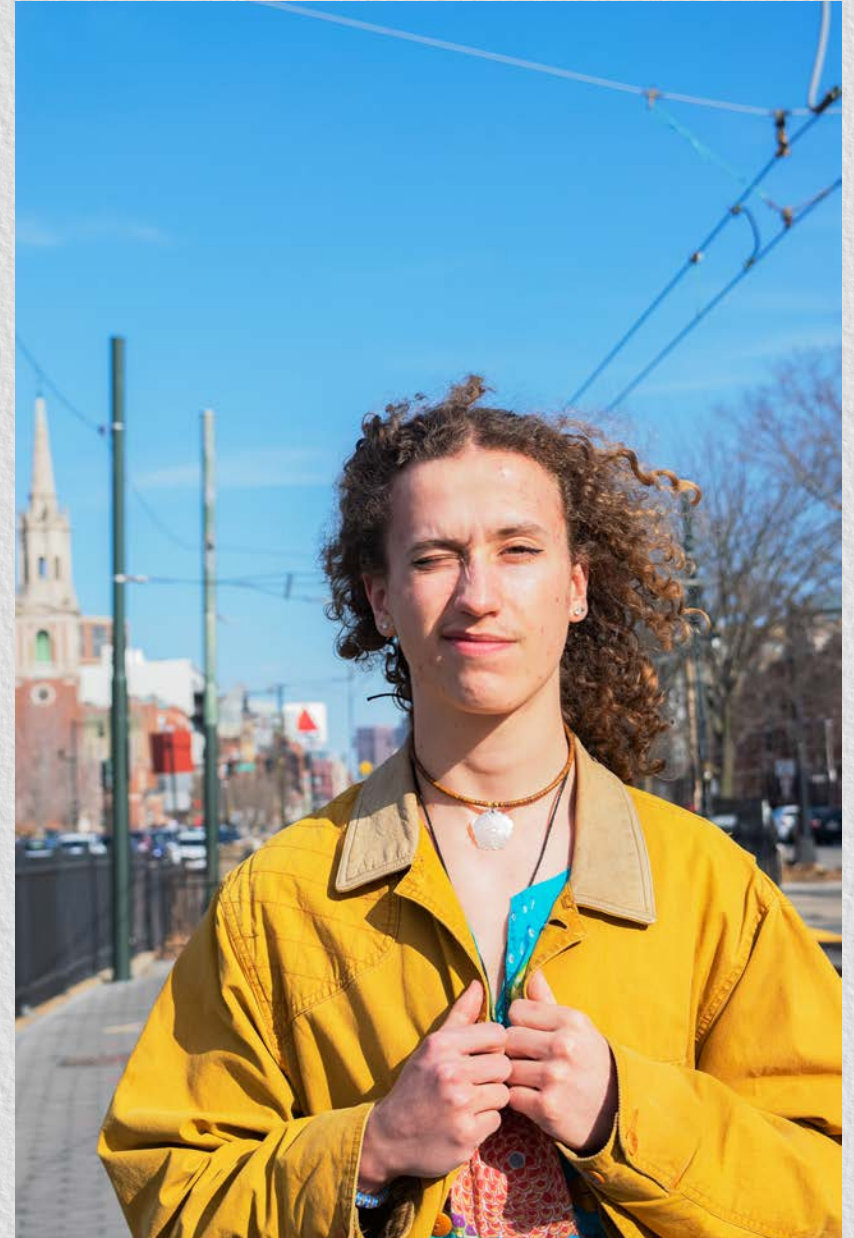
Curated by Edie Bresler, Professor of Practice & Photo Lab Coordinator, Department of Art and Music.

**Photographers:** Addie Sargent, Ailia Rochefort, Amanda Farrington, Amanda Perry, Anna Hehir, Anna Lacy, Cherry Le, Chloe Crelia, Clara Winkler, Clarissa Van Sickle, Dani Caisse, Daniela Gil Veras, Eileen Riley, Eri O'Brien, Grace Cronin, Hannah Kearney, Hannah Lebric, Isa Navarro, Isabel Babicz, Jen-Li Barry, Jenna Squasoni, Lena Weymouth, Lennon Sherburne, Lezdy Bonilla, Lia Vichi, Lucia Escobar, Lucy Clauson, Mae Blackwell, Mariana Jaramillo, Mia Brown, Mia McGillicuddy, Michaela Hayes, Mintou Barry, Natalie Starszewski, Olivia Mathelier, Simone Grosswiler, Sita Alomran, Sophie Castleman, Steffi Gaehe, Stephanie Moscaritolo, Victoria LaVelle, Vy Le, Zoe Robertson

# People, Places, and Meaning



Cherry Le



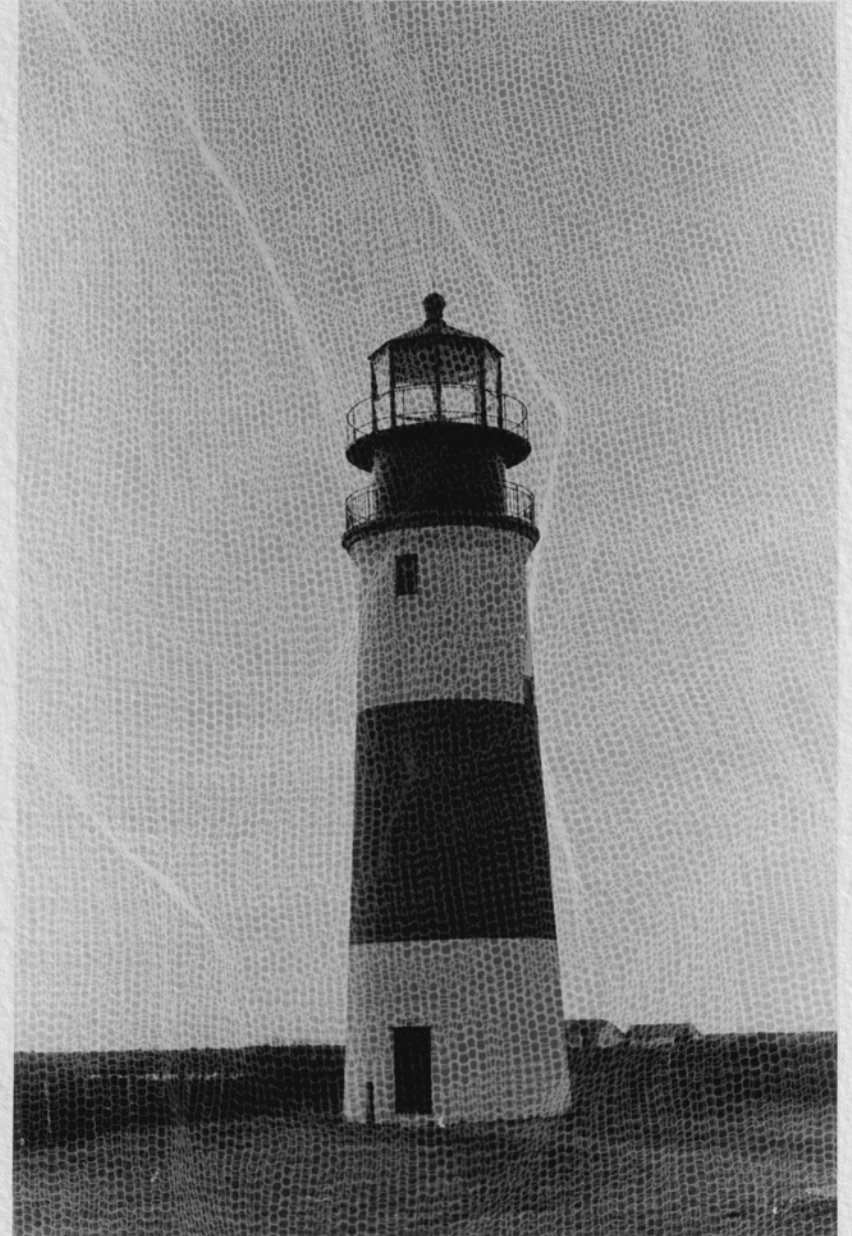
Clara Winkler



# People, Places, and Meaning

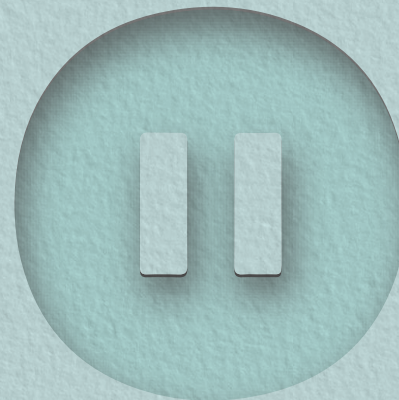
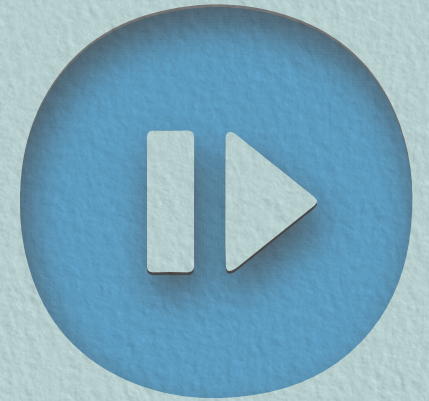
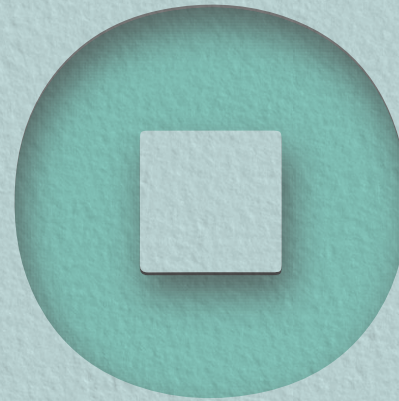


Mae Blackwell



Mia McGillicutty

# Video Exhibit



# Video Exhibit



**Jawaria Ali '25 and Dan Nguyen '24**  
**Majors: Chemistry (Ali), Physics (Nguyen)**  
**Faculty Mentor: Phillip Jason White**  
**Contributors: Madiha Kabeer, Jason White, Michael Jordan, Sarah Singleton, and Adam Canfield**  
**Project: Examining the Transmission of Ultrasound Through the Temporal Bone for Neuromodulation in Epilepsy**

Neuromodulation using focused ultrasound is a novel technique that may reduce seizure frequency in patients with epilepsy whose seizures originate at the hippocampus (Brinker et al., 2020). The hippocampus is an anatomical structure in the brain that is positioned next to the temporal bone. Since the temporal bone is the thinnest bone on the skull, it is an effective location for ultrasound transmission. Our study investigates how much the temporal bone distorts ultrasound at four locations to verify if the energy is delivered accurately to targets. By analyzing the distorted energies, we can build a case for the usage of this neuro-modulation method to treat seizures with

other epileptic origins besides the hippocampus. To experimentally collect data, we used a tank filled with degassed deionized water in which we secured a transducer that emits 500 kHz ultrasound. A ball bearing and its extended holder attached to a 3-direction positioning system acted as the sensor. Motors move the sensor along a desired range and data was collected at 0.5 mm intervals through an oscilloscope. Currently, we are scanning the transmitted ultrasound field through the temporal bone of a cadaver skull. We will conduct analysis on this data using MATLAB and compare it to the data taken from a baseline scan (no bone included) to evaluate the distortion of the ultrasound when propagated through the temporal bone. Once we have finished our analysis using the temporal bone, we hope to move on to other areas of the skull to expand the current targets being investigated in the clinic for ultrasound neuromodulation in epilepsy.

**Shania Louise Sagra Ambros '22**  
**Major: Web Design & Development**  
**Faculty Mentor: Heather Hole**  
**Project: Cordigo Artspace: Sharing Cordilleran Cultural Knowledge through Art**

Cordigo Artspace is an online platform showcasing virtual reality (VR) art exhibitions and an Artist Directory of Igorot Artists in the Cordillera. Igorot means "People of the Mountains": it is a term used to describe the Indigenous peoples who inhabit the northern mountains of Luzon in the Cordillera Administrative Region. The area consists of 5 regions: Benguet, Ifugao, Bontoc (Mountain Province), Apayao, and Kalinga. The project examines how human-computer interactions can engage digital citizens in intercultural storytelling, community-building, and ethically sourced cultural heritage learning. The purpose is to have Western audiences engage with an ethically sourced digital archive allowing them to interpret

Indigenous cultural relationships through visual cultures. Most importantly, these visual storytellers self-govern what information they want to share outside of the Indigenous community. To kickstart the project, I will be collaborating with Tam-Awan Village, an art institution in Benguet, to source information on the Igorot Art community and create a VR exhibition from their collection.

**April Beatty '25**  
**Major: Political Science**  
**Faculty Mentor: Valerie Geary**  
**Project: Nobody Cares, Work Harder: Mental Health in College Athletes**

Student-athletes are vital members of their school communities; they build school pride, foster strong relationships, and are looked upon to lead others. However, the mental health of student-athletes is often overlooked. This presentation examines the declining mental health of college athletes and outlines the steps that the NCAA,

# Video Exhibit



universities, and society as a whole need to take in order to create a safer academic and athletic environment for all.

**Anna Boyles '22**

**Major: History**

**Faculty Mentor: Laura Prieto**

**Project: The Mansion on Mill Street: Constructing Jackson, Mississippi's Red-Light District**

My research looked into a de facto red-light district in Mississippi's capital of Jackson, which existed from 1907 to 1917. I researched the events and geography of the developing city at the turn of the 20th century to determine why sex work was allowed to operate in its particular location, as well as why it was no longer tolerated as the country entered into what has become known as World War I. I consider issues of race, perceived criminality, and urbanization and suburbanization in the thesis I am writing based off of this research.

**Emily Brown '25**

**Major: Biology**

**Faculty Mentor: Valerie Geary**

**Project: How RuPaul is Ruining Drag**

This speech highlights some of the many issues brought onto the drag community by the Emmy Award-winning TV show, RuPaul's Drag Race. RuPaul himself has made many transphobic remarks and stated many times that he would never allow any people who identify as trans on the show because he believes that drag is no longer drag if transgender women or people who were AFAB are doing drag, even though drag has always been about challenging the public perception of gender and a form of expression. On top of this, the show and its fan base also have a large history of racism, which greatly impacts queens' of color's careers after their time on the show. The racism and edits on the show have led multiple queens to quit drag and lose their love for the art form.

**Anna Burt '23**

**Major: Psychology, Women's and Gender Studies**

**Faculty Mentor: Megan McCarty**

**Project: A Quantitative Study of Prejudice towards Gender Non-Binary People**

We conducted an initial exploration into the prejudices that people hold towards gender non-binary individuals - those who do not identify as exclusively masculine or exclusively feminine. Although there is little quantitative research on this topic, based on qualitative work (e.g., Darwin, 2017) we expected that participants would feel less emotional warmth and fewer positive emotions towards non-binary individuals than towards men and women. 502 participants were recruited using Amazon's MTurk and randomly assigned to complete a series of measures about either men, women, or non-binary individuals. These measures included two prejudice assessments: a feelings thermometer and a general measure of emotions felt towards the target.

Participants felt less emotional warmth towards non-binary individuals than towards men and women. Participants also felt fewer positive emotions towards non-binary individuals than towards women, but felt more positive emotions towards non-binary individuals than towards men. These findings allow for a greater understanding of the day-to-day experiences of non-binary individuals, as they can be greatly affected by the prejudices others hold.

**Gabriella Cacia '22**

**Major: Exercise Science**

**Faculty Mentor: Randi Lite**

**Project: Comparing Functional Movement Screen Composite Scores in Active Individuals with Detected Asymmetries**

Background/Purpose: The Functional Movement Screening tool is very crucial to understanding a person's functional ability. The FMS allows fitness professionals to gauge the client's ability to move through a series of fundamental movement patterns. The FMS consists of seven

# Video Exhibit



movement tests that assess poor movement patterns that may be a direct result of muscle tightness or weakness. Each movement is scored on a scale of 0-3 based on the quality of the movement and specific criteria to that movement. The aim of this research is to determine if the functional movement screen is effective in detecting and preventing injury among active populations. Methods: This is an observational case study consisting of 4 men between the ages of 50-63 who have asymmetries that were detected by the Functional Movement Screen. Composite FMS scores and corrective exercises will be recorded. Results: There are improvements in overall composite scores over time and when looking at the individual composite scores there are improvements in the lowest scoring tests. If a client scored a 0 due to pain or a 1 initially, there was an increase in that individual score. The specific corrective exercises implemented improved detected asymmetries. Conclusion: Overall composite scores increase over

time by implementing exercise programs with corrective exercises targeting detected asymmetries. Future research should look at active individuals as a population rather than just athletes. In addition, research should focus on looking at the types of correctives that are being implemented into exercise routines.

**Alyssa Cameron '23**

**Major: Psychology**

**Faculty Mentor: Sarah Martin, Greg**

**Feldman, Elizabeth Donovan**

**Project: Parental Stress and Child**

**Social-Emotional Competence in the COVID-19 Pandemic**

The COVID-19 pandemic has caused many families to face unexpected stressors. Research suggests that the specific stressors families face, as well as families' abilities to cope with these stressors, varies greatly (Adams, Smith, Caccavale, & Bean, 2021). Our study aims were to describe the prevalence and impact of various COVID-19 stressors on

families with preschool-aged children, and to examine the unique and interactive effects of two specific stressors - school closures and family conflict - as linked to child social-emotional adjustment during the COVID-19 pandemic. Participants were 84 parents of preschool-aged children. Participants completed questionnaires about their family's experiences during the COVID-19 pandemic. These included the Pandemic Stress Questionnaire (PSS; Kujawa et al., 2020), a 26-item questionnaire that assesses exposure to stressful events due to the COVID-19 pandemic, and the Social Competence Scale (SCS; Conduct Problems Prevention Research Group, 1995), a 12-item parent-report measure of children's social-emotional competence. Participants also responded to several open-ended questions about their emotions and parenting experiences during the pandemic. Simple effects contrast analyses revealed that, in families experiencing heightened stress associated with both family conflict about the pandemic and school closures,

children demonstrated worse social-emotional competence, relative to children from families not experiencing stress related to school closures and from families experiencing stress associated with school closures but not conflict. Our findings are in line with previous research and highlight the important role that schools/daycares and family dynamics play in child social-emotional competence during times of great stress.

**Maggie Clancy '22**

**Major: History, Environmental Science**

**Faculty Mentor: John Young**

**Project: Facile Methods for Reusing Laboratory Plastic in Developmental Biology Experiments**

Single use plastics are the main contributor to the plastics problem, exacerbating pollution that negatively effects the ecosystem and human health alike. There is a gap in knowledge surrounding how life science laboratories contribute to overall plastic waste in the United States. Here, we address this gap and subse-

# Video Exhibit



quently propose methods to mitigate single use plastic waste in developmental biology research laboratories. First, different sized research labs participated in a survey using a public platform to evaluate plastic waste. Second, the feasibility of washing and reusing plastic to house *Xenopus laevis* was tested. This study utilized *X. laevis* to test the efficacy of the cleaning methods when challenged with microsurgeries or other manipulations of the embryo. The cleaning methods utilized cheap and accessible products such as bleach and ethyl alcohol. Reusing laboratory plastic did not affect the development or survival of *X. laevis*, indicating that these cleaning methods can be used to sterilize plastic before reuse or recycling. Conjugating the data, a cost benefit analysis was performed to determine the sustainable benefits of reusing plastic. Standardization of these procedures would allow research laboratories to benefit economically while practicing environmentally conscious consumption.

**Maggie Clancy '22**

**Major: History, Environmental Science**

**Faculty Mentor: Laura Prieto**

**Project: National Parks and Recreation**

My presentation (research) explores the commodification of nature in the United States through the creation of the first National Park, Yellowstone, and the subsequent National Park System. National Parks are legislatively de-commodified land. However, during their early foundation, the Northern Pacific and Union Pacific Railroad Company, in coalition with the United States government, held monopolies on transportation, lodging, and all other touristic ventures within the parks. Ideologically, the National Parks symbolically perpetuate the myth of the frontier, protecting the reminiscence of the wilderness that was 'lost' (stolen) during westward expansion. But analyzing the process of commodification through comparing the discontinuity of legislation that de-commodified National Parks and the monopolistic tourism industry that commodified them

tells a larger story of Americanism and industrial capitalism in the United States in the late 1800s, early 1900s.

**Elizabeth Collotta '22**

**Major: History**

**Faculty Mentor: Laura Prieto**

**Contributors: Jason Wood, Simmons**

**University Archives, and Edie Bresler**

**Project: The 54 Pilgrim Road Project**

*The 54 Pilgrim Road Project* seeks to explore the collective memory of the Residence Campus. Collective memory can be understood as how a group of people remember their shared history. In this instance, Simmons students share a common history of living on the Residence Campus, and their feelings towards the space determines how it is remembered. Particularly, I wanted to understand the collective memory of the physical spaces on the Residence Campus, such as the dormitories and the outdoor areas.

To emphasize the historical significance of the physical spaces in the creation of

these memories of the Residence Campus, I chose to use my skills as a photographer. I selected fifteen images from the Simmons Archives with the intention of returning to the location at which it was created, and photographing the modern space. The images were then paired and animated. In each recreation, the archival photograph fades in and out of a modern image to highlight the similarities of the physical spaces in both the past and the present. These similarities reveal the significance of the physical spaces to the formation of our memories of the Residence Campus in both historical and modern contexts. The culmination of *The 54 Pilgrim Road Project* is a digital exhibit. The digital exhibit features the animations, an interactive map, and information about the spaces and traditions depicted in each recreation. The exhibit can be most easily accessed through the link on our Instagram bio, under the username: **@54pilgrimroadproject**.

# Video Exhibit



**Chloe Crelia '22**

**Major: Spanish**

**Faculty Mentor: Beatriz Cobeta**

**Project: La redefinición de la familia y la superación de la brecha generacional en España (The Redefinition of the Family and Overcoming the Generation Gap in Spain)**

The objective of this presentation is to examine the social influences on the Spanish family that the dictatorship of Francisco Franco and the period after his death known as The Transition to Democracy had. I analyze three short stories, “La lengua de las mariposas” by Manuel Rivas, “En busca de un retrato” by Paloma Díaz-Mas, y “Las bodas de plata” by Rosa Montero to show that one of the greatest barriers in the Spanish family was generational divide. By comparing and contrasting the characters and plots in these stories about different family dynamics, it becomes evident that ideas about how to define the nuclear family changed greatly throughout the decades in Spain.

Additional articles support the idea that the definition of family in Spanish society continues to be reconstructed to this day creating a more progressive and inclusive country. By investigating Spain’s social and political past and present through news and literature, I was able to see that the generational divide is much smaller today than it was in the past.

**Beatrice Crocker '24**

**Major: Francophone Studies**

**Faculty Mentor: Marda Messay**

**Project: Queer Identity in Abdellah Taïa's "L'armée du salut"**

Abdellah Taïa is a Moroccan author who writes about the complex reality of being a gay Arab man in the twentieth century. Taïa has published eight novels since 2004, many of which are autobiographical and centered on Arab homosexual protagonists. Taïa became an iconic figure for many after his 2009 essay *Explaining Homosexuality to my Mother*, which he wrote in response to the Moroccan government moving to censor

literary works that support gay liberation. In his novel *L'Armée du salut*, which is separated into three parts to represent Taïa’s childhood, adolescence, and adulthood, he explores his journey of self discovery and self-acceptance in terms of his sexuality. The novel tackles taboo subjects such as Taïa’s sexual feelings for his brother and the stigma of homosexuality in Morocco, where same-sex marriages are still outlawed. In *L'Armée du salut*, Abdellah Taïa reveals how his complicated relationship with sex as a child, his 'transgressive' sexual experiences as an adolescent in Morocco, and his experiences as an adult in Switzerland shaped his queer identity and his perception of sex, specifically the connection between sex and power.

**Gracyn Delaune '24**

**Major: Sociology**

**Faculty Mentor: Valerie Geary**

**Project: Prison Labor: America's Enduring Form of Slavery**

In the past couple of decades, the United

States has experienced mass incarceration in which a high percentage of the population is incarcerated. This mass incarceration is largely due to the fact that the federal government profits off of prisoners due to the system of prison labor, which was established as a legal loophole in the Thirteenth Amendment. Prisons exploit incarcerated people by coercing them into working, forcing them to work in substandard conditions, and not creating pathways to employment once incarcerated individuals are released from prison. This system is unjust, and focuses on punishing incarcerated people instead of rehabilitating them, leading to a cycle of poverty that increases the United States’ recidivism rate.

**Maddie Desimio-Maloney '25**

**Major: Nursing**

**Faculty Mentor: Valerie Geary**

**Project: The Taylor Swift Effect**

This is a presentation about why Taylor Swift is the best role model for all women

# Video Exhibit



and members of the LGBTQ+ community. I will go through many of the reasons why she is so influential, and the things she has done to have a positive impact on so many people. I was interested in this project because of the ways that Taylor Swift has touched me as a listener and as a musician. I was especially inspired by her documentary released in 2020, "Miss Americana", which shared many candid moments of her talking about the struggles of her life, which very much align with the struggles of her fans. It was extremely enriching to be able to research and learn even more about her through this research process.

**Danielle Donovan '25**

**Major: Political Science**

**Faculty Mentor: Valerie Geary**

**Project: Claudia Jones: Black Transnationalism from Trinidad to London**

My presentation will focus on how Claudia Jones' transnational and intersectional background influenced her ideas and ultimately led her to form the

Notting Hill Carnival as a form of transnational Afro-Caribbean resistance in England. By reading two of the most comprehensive biographies of Jones, I will connect her experiences living in Trinidad, the United States, and England to the development of her worldview. I will argue that ultimately, the Notting Hill Carnival was created as a distinctly transnational event that sought to bring forth Black celebration in wake of a period of Black suffering. This research matters because Claudia Jones was an extremely influential and important figure in the American and British left, yet she is hardly studied or discussed.

Though she spent just nine years in England, her time organizing there was influential in the history of Black radical organizing in London. The Notting Hill Carnival is one of the most prominent Caribbean Carnivals in the world. The "West Indian Gazette" and Notting Hill Carnival became the result of the transnational fusion of Jones' experiences in Trinidad, the United States, and poor Caribbean immigrant communities in

both Harlem and London. Moreover, her transnational identities as an African-American, a Caribbean woman, and a descendant of the greater African diaspora were fundamental in the founding of these two institutions. I will explore Jones' transnationalism and the manifestations of that transnationalism by tracing the most relevant aspects of her life including: her dually and triply diasporized identity, her involvement with the Communist Party of the United States, her deportation, the "West Indian Gazette", and finally, the Notting Hill Carnival.

**Emily Douglas '25**

**Major: Computer Science**

**Faculty Mentor: Valerie Geary**

**Project: Misogyny and Sexism in the Entertainment Industry**

This video presents an overview of misogyny and sexism prevalent in various subcategories of the entertainment industry. It includes examples and references to specific artists and cases

throughout time. Overall, the presentation strives to showcase to the viewer how there is an extreme presence of misogyny and sexism in the entertainment industry.

**Sierra Duggan '22**

**Major: Exercise Science**

**Faculty Mentor: Randi Lite**

**Project: Shoulder Mobility: Comparing FMS Scores Over Time to Assess the Efficacy of Corrective Exercises**

Shoulder injuries are common and chronic in nature. The Functional Movement Screen (FMS) has become a common tool used by professionals in order to identify limitations in basic functional motions.

Purpose: The main purpose of this case study is to highlight the usefulness of the FMS and corrective exercises in improvement for shoulder range of motion (ROM).

This is a case study that utilizes a chart review on two men who initially presented with shoulder injuries. Basic demo-



# Video Exhibit



graphic data, physical activity levels, and type of corrective exercises completed will be recorded. Upper extremity muscle mass, along with the deep squat, the trunk stability push-up, and the shoulder mobility movements of the FMS will be compared at baseline and after 18 months of attending personal training sessions.

Both subjects showed improvement in shoulder mobility. Subject A improved his right shoulder mobility FMS score from a 0 to a 1 and his trunk stability push-up FMS score from a 0 to a 2. These results show that after 18 months, Subject A no longer experienced pain with these movements. Subject B improved his left shoulder mobility FMS score from a 1 to a 2. His corresponding mobility measurement improved by nine centimeters. Shoulder mobility improved by implementing corrective exercises into two clients' workout routines over 18 months. However, it is important to acknowledge the sample limitations to this study.

Future research should focus on larger samples and also the types of exercises

performed throughout the actual workout routine.

**Beyza Erdem '22**

**Major: Biochemistry**

**Faculty Mentor: Nick Todd**

**Project: Testing the Efficacy and Safety of Targeted FUS-BBB Drug Delivery of an AAV-9-packaged gene Therapy for Huntington's Disease**

Huntington's disease is a rare neurodegenerative genetic disorder that leads to debilitating cognitive, affective and motor deficits and ultimately death. It is caused by a CAG repeated trinucleotide expansion (>35 repeats) in exon 1 of the Huntingtin gene (HTT) which leads to production of a neurotoxic protein, mHTT.

The goal of this project is to develop a safe and effective delivery method of a potential HTT gene suppressor to the brain across the blood brain barrier (BBB). The project uses an adeno-associated virus (AAV) as a vector to package the gene therapy, specifically viral vector AAV9. AAV9 can cross the BBB in some

increments, but not in high enough concentrations to deliver enough of a dose to the brain for certain therapy. This is why the project is also using focused ultrasound (FUS)-BBB opening to help deliver the drug. Our hypothesis is that FUS-BBB opening will enhance the delivery of an AAV9 gene therapy to the brain to yield sufficient knock down of the mutant HTT gene in a mouse model of Huntington's disease in an effective and safe way.

**Kassandra Ferm '25**

**Major: Neuroscience and Behavior**

**Faculty Mentor: Valerie Geary**

**Project: Veganism: One Step Towards Saving the Planet**

Our world is suffering. Humans are constantly depleting the earth of its resources. As cliché as it sounds, we have no planet B. An enormous issue is that people do not think they can make a global change as an individual. But what we eat as individuals actually does have an impact on the environment, whether

we like it or not. In the Summer of 2021, I took a trip to Costa Rica with a group of other 18-year-olds. We assisted researchers with turtle conservation and studied animals that live deep in the rainforest. Throughout the trip, I learned from the researchers about the detrimental effects of overfishing. By over-depleting resources from our oceans, we mess with the oceanic food web and put vulnerable species like coral at risk of extinction. If more people were to switch to a fishless diet, overfishing would be less of a global issue because marine animals would be less of a commodity. Transitioning to a plant-based diet can be overwhelming at first. But it is all about doing what you can. Even if you cannot go vegan tomorrow, trying to cut out some animal products is a good start. A little bit of change can go a long way. If you start to recognize your impact on this planet, and on other creatures living amongst us, you can see how impactful veganism can be.

# Video Exhibit



**Aviva Foster '25**

**Major: Psychology**

**Faculty Mentor: Valerie Geary**

**Project: These Not-So-Happy Golden Years**

When we return to books or other media we loved as children, we sometimes realize that they are more problematic than we remember. In reconsidering the “Little House on the Prairie” books by Laura Ingalls Wilder, specifically examining them for racism towards Native Americans, questions about their impact and value arose. Books with this sort of content can have extremely powerful effects on young children who read them. Media in general has a huge influence on its consumers, so for children especially, it’s important to provide accurate representation rather than stereotypes. For this reason, the “Little House” books can be seen as very outdated and no longer necessary or worthwhile to read. However, book banning is a prominent problem in today’s politics, and is often used under the guise of protecting

children to keep important information about things like race and LGBTQ+ issues away from children who might need them. Instead of completely banning the “Little House” books, one suggestion might be to simply assign them to slightly older children and teens, who can engage in conversation about problematic language/stereotypes and the way that history is told.

**Annika Haber '22**

**Major: Environmental Science**

**Faculty Mentor: Anna Aguilera, Randi Lite**

**Project: Food Justice in the Greater Boston Area**

Food justice is a very prevalent topic that has been brought to light recently because of widening impacts caused by the COVID-19 pandemic. In the Greater Boston Area, food insecurity rates are three times higher if you are Black or Latinx. Scholars have shown that this food related insecurity leads to detrimental health issues, community issues, as

well as social justice issues. This systematic review will introduce food justice, explain why it is a prevalent issue, and how communities can help mitigate the effects. Looking through the lens of consumption of healthy foods in urban areas of the United States, we are able to draw conclusions and relate them back to the Greater Boston Area. Articles were considered for their relation to access and consumption of healthy foods, and through the research there were positive trends found. Greater access and education around food justice and healthy choices led to greater consumption of fresh produce. Through this information, and by relating it to our community, we can collectively strive towards a more equitable society.

**CJ Haggard '25**

**Major: History**

**Faculty Mentor: Valerie Geary**

**Project: An Argument for Ranked Choice**

In this video, I present my argument that the Electoral College should be abolished

in favor of Ranked Choice Voting. The Electoral College is rife with inequality and does not accurately represent the will of the American people due to its disproportionate representation of small states and the silencing nature of winner-take-all laws. Ranked choice voting would allow for every vote to be counted equally without silencing any minority. This change could foster the growth of third parties in the US and increase public confidence in the representative power of the government.

**Georgia Hansbury '22**

**Major: Exercise Science**

**Faculty Mentor: Randi Lite, Laura Simpson**

**Project: The Effect of Ten Weeks of Exercise on Blood Glucose, Triglycerides and Body Composition in People with Type Two Diabetes**

Type two diabetes is plaguing the United States with illness and many other parts of the world. Current research suggests aerobic exercise may provide benefits to

# Video Exhibit



those with diabetes. The current study aims to build upon this data and identify the changes in metabolic factors associated with diabetes after ten weeks of moderate-intensity exercise. In the chart review for the ten diabetic subjects, the research seeks to understand how exercise can alter blood glucose levels before and after exercise. Additionally, a lipid panel, HbA1c %, body composition, and oral glucose tolerance test were collected at baseline and after the 10 weeks of exercise. It was found that exercise caused a statistically significant decrease in A1C ( $p = 0.014$ ) and triglyceride levels ( $p = 0.036$ ). The oral glucose tolerance test had a statistically significant decrease for the following time points, P90 and P120 ( $p = 0.019$  and  $0.00059$ , respectively). This data provides supporting evidence that consistent moderate-aerobic exercise can improve the outcomes of disease in people with type two diabetes. In the future, with a greater sample size, the analysis will expand to incorporate heart rate data, VO<sub>2</sub> data, and RMR data, to

better understand the effects of exercise on type 2 diabetics.

**Georgia Harper '22**

**Major: French, Political Science**

**Faculty Mentor: Marda Messay**

**Project: Fanon et "Nedjma"**

Kateb Yacine's 1956 novel "Nedjma" tells the story of four young men in Algeria, all of whom are in love with the same woman: Nedjma. Throughout the novel, there are scenes that create fascinating parallels with Frantz Fanon's "The Wretched of the Earth," a text that frames collective violence as a necessary aspect of the decolonization process. In this presentation, I perform close readings of two scenes that demonstrate violence against colonial power in such a way that supports Fanon's theories. The first scene that I discuss is the murder of Monsieur Ricard, in which Mourad crashes a wedding and attempts to defend an Algerian maid. The second scene is Lakhdar's slapping of Monsieur Ernest. The novel and I both contrast these

scenes with the Sétif Massacre, in which French forces killed thousands of Algerian protesters. These scenes underscore the importance of collectivity in anti-colonial violence as well as the seeming psychological necessity of violence. This presentation is in French.

**Hena Haque '22**

**Major: Biochemistry**

**Faculty Mentor: Shreya Bhattacharyya**

**Project: The Characterization of Food Preservation Coatings Using Scanning Electron Microscopy (SEM)**

About 30-40% of the United State's total food supply ends up as food waste and sits in landfills generating copious amounts of methane, a greenhouse gas 10x stronger than carbon dioxide. The leading contributor to this waste is the spoilage of foods, specifically fruits and vegetables primarily in household settings. Food waste directly affects the environment, climate change, and food security in a negative way. For this reason, it is imperative that the shelf life of foods,

specifically fruits, is prolonged. This can be done through the use of biomolecular coatings. These coatings can be synthesized using a mixture of essential oils and lipid or polysaccharide bases. The bases encapsulate the essential oils similar to the structure of nanoparticles. These nanoparticles act as delivery agents of the essential oils that contain antioxidant and antibacterial substances that can elongate the shelf life of the substance being coated. These polymeric nanoparticles form a coating surrounding the fruit of interest, and when the gel dries up, the outcome is a fruit with a thin, clear, film coating that is safe to eat. I am working with Dr. Bhattacharyya in the Chemistry and Physics department to characterize the physical behavior of various coatings using scanning electron microscopy (SEM) to view how the gels coat different surfaces. By visualizing the gels at the microscopic level, we can analyze the surface roughness, thickness, porosity, and homogeneity of the gel and determine if the coating is successfully covering the entire surface. This project is

# Video Exhibit



aimed towards dipping different surfaces, such as aluminum and glass, with the different synthesized coatings and imaging the surfaces using an SEM to characterize the behavior of the thin films when introduced to a surface. The sample groups of this experiment include alginate, and alginate/neem oil coated surfaces, as well as uncoated surfaces to act as controls. The SEM that will be used in this project is a Hitachi S-4800 SEM at Northeastern University's Boston Electron Microscopy Center as well as the JEOL JSM-5510LV at Simmons University. Using the images taken by the SEM, we can characterize these gels and ensure the efficacy of the coatings. By ensuring homogeneity and successful synthesis of the coatings using these images, it can be concluded that these coatings can act as food preservatives as well as potential packaging alternatives. Upon completion of the characterization of these coatings, an environmentally friendly solution to food waste and excess plastic packaging will be confirmed.

**Caitlyn Helms '22**

**Major: Sociology**

**Faculty Mentor: Shelley White**

**Project: FDA Medical Device Hearings: Help or Hindrance to Patient Voices?**

The Food and Drug Administration (FDA) plays a crucial role in regulating medical device safety, including categorization, market clearance, and safety actions like recall. FDA hearings allow different constituency groups (patients, advocates, physicians, industry, researchers, and FDA representatives) the opportunity to comment on specific medical devices. Using quantitative and qualitative methods across three levels of analysis, we examine the purposes of FDA hearings and the dynamics among constituency groups during medical device safety hearings. The first level of analysis examined all FDA hearings from 2000-2020, where we noted device type, device classification, and meeting purpose. The second level of analysis focused on implantable devices where there were safety concerns. We analyzed

the extent of airtime (opportunity for testimony, Q&A) afforded to each constituency, and found that patients had less opportunity compared with industry, researchers, and FDA representatives at a statistically significant level. For the third level analysis, we used NVivo 12 software to explore the bases of evidence and recommendations leveraged by each constituency. We determined that physicians primarily used clinical evidence and the FDA and Industry representatives primarily relied on scientific evidence, while patients and advocates leaned towards embodied knowledge. We conclude that the structure of FDA hearings concerning medical device safety issues marginalizes the voices of patients, and therefore embodies knowledge, in favor of those deemed more expert. This research, completed through a Research Assistantship, presented an opportunity to learn about research design, qualitative methods, coding software, academic writing, and the process of research publication.

**Philicia Henderson '22**

**Major: Exercise Science**

**Faculty Mentor: Randi Lite**

**Project: The Healing Potential of Exercise for Symptoms of Post Traumatic Stress Disorder: A Systematic Review**

Post Traumatic Stress Disorder is a mental disorder that may develop after an individual experiences a frightening, shocking, or dangerous event. PTSD can be a short term or chronic illness, and symptoms can make it difficult for those affected to function in everyday life. Individuals with PTSD are encouraged to engage in physical activity or exercise to help lessen their symptoms. Methods: The author conducted searches of electronic databases using PTSD and exercise related terms. Evidence from eligible studies were combined to review the beneficial effects of exercise for PTSD symptoms. Results: Overall, exercise participation had a negative effect on the severity of PTSD symptoms. The research indicated that exercise participation was beneficial for the management of PTSD,

# Video Exhibit



compared with no exercise. Conclusion: Exercise is an effective coping mechanism and management strategy for those living with PTSD. Evidence was found that indicates that exercise lessens symptoms of PTSD in children, adolescents, and adults. It appears that exercise participation could be used to promote recovery after trauma and reduce the intensity of PTSD symptoms. More high quality studies are needed that provide insight into the effect of dose and exercise types on the reduction of PTSD symptom severity.

**Lauren Howard '22**

**Major: History, Political Science**

**Faculty Mentor: Lydia Fash**

**Project: For I Will not be a Party Man: Partisanship and Party Conflict in the Adams Administration**

Throughout his presidency, John Adams' desperate attempts at peacemaking, refusal to bow to party allegiance, and distaste for party politics fueled the fire of increasing polarization and partisanship

after he failed to unite the country while facing a Quasi-War with France. In both his personal correspondence and interaction with fellow politicians and policymakers, Adams repudiated the evils of political parties and identified himself as a staunch anti-party man. Adams' anti-party sentiment distanced him from the High Federalists, leaving him without their support in Congress and unable to control their actions. Instead, High Federalists were loyal to Alexander Hamilton, who encouraged a militaristic response to French offenses at sea. The High Federalists were able to pass numerous pieces of militaristic legislation despite strong opposition from the Democratic-Republicans. Such legislation, including the infamous Alien and Sedition Act, further aggravated tensions between the Federalists and Democratic-Republicans, encouraged instances of legislative violence, mobilized support for the Democratic-Republicans, and enabled the "Revolution of 1800."

**Lauren Howard '22**

**Major: History, Political Science**

**Faculty Mentor: Laura Prieto**

**Project: Executive Excedrin to Mother's Little Helper: Race and Gender in the 1950s Miltown Mania**

Miltown - the first ever blockbuster wonder drug - revolutionized the treatment of anxiety and mental illnesses by making both patients and physicians dependent on prescription tranquilizers. The trope of the medicated housewife remains a familiar and often satirized part of the post-war collective narrative. However, before they were ever mother's little helpers, Miltown and other minor tranquilizers were known as executive Excedrin. The identification of minor tranquilizers with white middle-class suburban housewives oversimplifies the cultural context that enabled the success of minor tranquilizers, ignores the racial dimensions and implications of the tranquilizer craze, and overlooks men's interactions with tranquilizers in the 1950s and early 1960s. During the 1950s

and early 1960s, meprobamate tranquilizers were marketed as a panacea for a host of problems men, women, and children faced in the Age of Anxiety. While pharmaceutical companies and medical researchers stressed the general uses and efficacy of tranquilizers on men and women, advertisements and medical literature also worked to propagate a new brand of scientific racism that claimed people of color did not feel anxiety. As anxiety was deemed unique to whites and explained as a consequence of middle class ambition and drive, tranquilizers became a symbol of white middle class superiority and success.

**Yuriko Hishiya '22**

**Major: Biology**

**Faculty Mentor: Charlotte Russell**

**Project: Cholangiohepatitis in Dogs: A Case Study**

Cholangiohepatitis is inflammation of the liver, gallbladder, and bile ducts and can be fatal if left untreated. In dogs, cholangiohepatitis is a rare condition and thus

# Video Exhibit



has limited documentation. However, early intervention is critical in preventing cirrhosis and further, permanent organ damage. In this case study, a 10 year old Shih Tzu mix presents for lethargy, inappetance, and vomiting. Blood work showed elevations in liver function and disruption in bile ducts. With no imaging conducted, the patient was successfully treated with oral medication (pain medication, antibiotics, cholesterol medication, proton-pump inhibitor, and vitamins/supplementation) and fluid support. Blood levels were monitored weekly and returned to normal levels and patient temperament greatly improved after 8 weeks of treatment. Prognosis of cholangiohepatitis is not well known, although this case had a return to normal levels, persistent globulin presented and an abdominal ultrasound taken after treatment showed distension of the gallbladder. This case study illustrates one example of presentation of cholangiohepatitis and may aid in early diagnosis. Given that treatment was successful, this case attempts to give guidance for

patients that present similarly.

**Emma Keeling '22**

**Major: Public Health**

**Faculty Mentor: Valerie Leiter**

**Project: Exploring the Intersection**

**Between Upstream and Downstream Approaches to Domestic Violence Work**

Emma has been interning at REACH Beyond Domestic Violence as the Online Chat and Legislative Advocacy Intern since May of 2021. She has worked weekly on the online chat platform to support survivors and the community in 26 towns in Eastern Massachusetts. Supporting survivors on the online chat consists of supporting survivors and the community on various topics such as connecting survivors with resources at REACH and beyond, safety planning, educating a community member who is close to a survivor, and more. The legislative advocacy portion includes research, creating content to be posted on REACH's website and/or social media, and creating internal reports about the Healthy Youth Act. The Healthy Youth

Coalition is a coalition of about 20 organizations that help to support the Healthy Youth Act. Some of these organizations include REACH Beyond Domestic Violence, MassNOW, BARCC, and others across Massachusetts. Throughout the work Emma has been able to look at both the upstream and downstream approaches to domestic violence and how each plays a vital role in combating domestic violence.

**Miranda Leclerc '23**

**Major: History, International Relations**

**Faculty Mentor: Laura Prieto**

**Project: Queer Nostalgia and the Closet: Class Identity and Aestheticism in Charlie Gibson's Recreation of Victorian Masculinity**

This is a research paper I wrote combining my Queer Histories seminar and curatorial internship at the Gibson House Museum. In the paper, I analyze the convergence of class identity, Victorian masculinity, and queerness on Charlie Gibson as a prominent public figure in

Boston during the late nineteenth to mid-twentieth centuries. As one of the last of the Boston Brahmins and a queer man, Charlie's disillusionment with the modernization of Boston and decrystallization of rigid class structures motivated his preservation of his family's Victorian townhouse in the Back Bay as a museum as well as an eclectic fashion sense. Using the methods of Roland Barthes on fashion systems and the sociology of dress and analysis of prominent dandies/aesthetes such as Beau Brummel, Oscar Wilde, and Comte Robert de Montesquiou, I analyzed photographs of Charlie from the Gibson House archives, apocryphal tales, research conducted at the Gibson House, and international newspaper articles from 1896 to 1954 to understand how his affinity for class identity and relationship with the Comte de Mauny, Maurice Talvande, cultivated a queer public image of modern dandyism.

# Video Exhibit



**Samantha Margolin '23**

**Major: Environmental Science, Computer Science**

**Faculty Mentor: Michael Berger, Anna Aguilera**

**Project: Evaluation of Phosphorus Sorbents for Reuse as Soil Amendments**

Phosphorus levels in the Muddy River exceed national standards for freshwater bodies leading to eutrophication.

Eutrophication is caused by excessive algal growth reducing both dissolved oxygen and in turn overall water quality.

We have evaluated the potential of the river sorbents, EuroSorb® and Biochar-Now, to reduce excess phosphorus levels in the Muddy River and are evaluating the ability of both sorbents to improve degraded soils in an agricultural setting.

To desorb phosphorous from the sorbents they were immersed in solutions ranging from a pH of 1.3 to 7.0, composed using 1.0M hydrochloric acid. The initial and final phosphate concentrations were measured using the Hach colorimeter.

The maximum desorption occurred at a

pH below 3.0, indicating that a lower soil pH may be necessary for phosphorus desorption. Initial field soil testing at the Needham Community Farm revealed current phosphorus levels to be 1.5 ppm, 2.5 ppm under the minimum recommendation, and a slightly acidic soil pH of 6.1.

At this site, we will conduct a field experiment to evaluate the effect of various sorbent to soil ratios on plant-available nutrients and soil porosity. To achieve 100% desorption, we will explore alternative methods using citric acid and sodium hydroxide in place of hydrochloric acid as they have been proven effective in a wide range of desorption studies. Additionally, we hope to explore the absorption and desorption of nitrogen and potential contaminants to understand the holistic implication of applying used river sorbents in an agricultural setting.

**Sophie McDonnell '25**

**Major: Nursing**

**Faculty Mentor: Valerie Geary**

**Project: Mental Health and Type One Diabetes**

Type one diabetes has direct correlations with negative mental health outcomes, yet such a lack of research exists involving why. I will present my own research that answers the questions: "Are licensed mental health counselors in the southeastern New England region educated on type one diabetes? Do licensed mental health counselors in the southeastern New England region differentiate their treatment plans and screen for those with type one diabetes?"

**Cressida Sasnah Michaloski '24**

**Major: 3+2 Engineering**

**Faculty Mentor: Valerie Geary**

**Project: The Not-Present Present: An Observation of the Intersection Between Dissociation and Screen Time**

Based on anecdotal evidence, Cressida

Michaloski decided to conduct a survey to discern whether there was a correlation between screen time and dissociative symptoms. Although dissociation is common, it can be linked to various mental illnesses and disorders. Many of the survey's participants had been diagnosed with disorders in this group, and the survey results were interesting thanks to this factor. This presentation examines both the survey's data, participant comments, and possible next steps to encourage further research.

**Abhilasha Natarajan '22**

**Major: Art and Social Work**

**Faculty Mentor: Helen Popinchalk**

**Project: Re-Assembling**

My work for this project has been largely focused on what brings me joy. What I've discovered on this joy-finding mission is that I'm drawn to certain colors, shapes, and textures. I like reds, blacks, white, and little bits of turquoise which peak through the heaviness of the reds and blacks. I enjoy thick acrylic mediums,

# Video Exhibit



carving into Lino, making stencils, and pulling prints from a gel plate. I also enjoy creating mono-prints and using a variety of papers. Papers that are nearly transparent have a unique appeal for me to add textural collage elements to the work. I love repetition with variation within the groups. Circles, stones, pods, small and larger holdable shapes that are roundish bring me a sense of containment and holding. Bold lines and very fine detailed lines intrigue me. They are ladders, stairs, fences, and webs that pull in my gaze and make me feel protected. Groupings of stones, sticks, figures, and pods offer a sense of connection, of gathering, and sharing space together. During this time of pandemic, war, division, and polarities within our nation and our world, may we continue calling out joy wherever and whenever we can. May we bring hope and resilience through joy and in sharing that joy with others.

**Nam Tran Nguyen '22**

**Major: Biochemistry**

**Faculty Mentor: Feng Qian**

**Project: Axon Regeneration: The Potential Therapy for Glaucoma Injury**

Glaucoma is a common disease in the U.S that causes vision loss due to the optic nerve damage. One of the potential medical therapies for recovery of function caused by glaucoma is regeneration of axons, which can be stimulated by lens injury. This study will discuss the experimental procedures and analysis used. Experiments are conducted by injecting different treatments into the mice once at birth, and at around 30 days old injuring the optic nerve and damaging their lens. Retinal tissue and the optic nerves are gathered at either 6 weeks or 3 months of age. Tissue is stained for whole mount retina and optic nerve, and retinal ganglion cells (RGCs) survival and the regeneration of axons is observed via microscopy. The RGCs survival count must include three requirements: attaching to the axons, including nucleus

and cytoplasm. The regenerative axons are counted at the distance 5 mm from the crush site by measuring the fluorescence intensity. The observer does not know the treatment conditions to keep the data unbiased. The results may be affected by many issues such as: the frequency of lens injury, or the timing between the drugs, nerve injury and lens injury. The quality of immunostaining is also vital to producing accurate RGC counts and observation of the optic nerve. We are trying to find the best conditions to promote the most regenerative axons to save the function of cells after central nervous system injury, especially in glaucoma.

**Anna Nulton '22**

**Major: Biology**

**Faculty Mentor: Randi Lite**

**Contributors: Meg Garvey**

**Project: Positional Sweat Rate Using Nix Hydration Sensors**

New information on bodily sweat and hydration is being produced frequently in

the world of athletics. Methods such as patches that monitor sweat rate are a newer technology to be explored. Previous research has utilized methods such as hydrogel patches. Nix Biosensors is a company creating a sweat sensor that allows users to get personalized data about their sweat rate and contents, allowing users to properly hydrate their body. This research is a report of body positioning in relation to sweat rate in 347 participants. The bicep and the proximal forearm are the positions to be utilized in the collection of data. Sensors are attached to participants and then calculated based on nude weigh-ins, water consumed, sweat rate (oz/hr), and sweat loss (oz). Results have been led to believe that the bicep would be the preferred placement of the sensor due to the slightly heightened sweat rate and sweat loss observed. This allows the Nix team to pursue further investigation into algorithm refinement and possible usage of analysis in the final stages of testing.



# Video Exhibit



**Tia Perkins '25**

**Major: Sociology**

**Faculty Mentor: Valerie Geary**

**Project: A Sociological Approach to Health Inequities**

As we enter into our third year after the onset of the COVID-19 pandemic, understanding how health inequities disproportionately affect individuals of different races, genders, abilities, classes, cultures, and socioeconomic statuses is more pressing than ever. The biases ingrained within our current healthcare system greatly impact how it functions and who is able to benefit from it. Many people living in the United States are currently dying from conditions that could be alleviated by simply receiving proper health care, due to a lack of medical access or inequitable medical access. Thus, it is crucial to understand the structural changes that must be made and begin to act on them at an individual level in order to change the way we view health and create a system that does not kill.

**Abigayle Post '23**

**Major: Sociology, Philosophy**

**Faculty Mentor: Jyoti Puri**

**Project: Hate Thy Neighbor: The Effects of Evangelical Missionaries on LGBTQ+ Policy in Post-Colonial Africa**

This presentation focuses on the influences of U.S. Fundamentalist Evangelical Christian missionaries on LGBTQ+ policy in the global south. Using scholarly writing to understand both the nature of Fundamental Evangelicalism and the effect of missionaries in the post-colonial era, this presentation will examine why Fundamentalist churches have begun using missionaries in the global south to promote messages of homophobia and hate. Throughout the world, these policies have inflicted considerable harm on queer people who are unable to live openly without fear of violence and legal consequences. A spotlight will be placed on the anti-gay Ugandan legislation of 2010, due to the direct influence of missionaries in the creation of the bill. Through this example, the effects of

widespread political queerphobia are examined. This presentation will use a transnational lens to better understand the intersection between colonial legacies and queerphobia. Through transnationalism, it's possible to explore how colonial ideology has profoundly affected the global south, exclusively to the detriment of the queer people that live there. Ultimately, this presentation will argue that Fundamentalist Evangelical missionaries are using the global south as a way to breed more anti-queer rhetoric into the world. Using money and aid, these missionaries are able to garner power and control as an act of neo-colonialism and continue to force colonial views onto the nations of the global south.

**Estela Raya-Fouts '24**

**Major: Spanish, Political Science**

**Faculty Mentor: Beatriz Cobeta**

**Project: Sistemas paralelos de explotación: un análisis de También la lluvia (Parallel Systems of Exploitation: an Analysis of También la lluvia)**

“También la lluvia” is a Spanish movie directed by Icíar Bollaín in 2010. It recounts the story of a film crew working on a movie about Christopher Columbus and his early voyages to the New World. The protagonists, Sebastián, the director, and Costa, the producer, decide to film their movie in Bolivia, where a conflict breaks out between the indigenous people and a water corporation that wants to privatize the water. This conflict is based on the Cochabamba Water War that took place in Bolivia in 2000. Throughout the movie, the characters of Sebastián and Costa are contrasted with an indigenous man, Daniel, to demonstrate how they reflect colonial imposition. In this movie analysis, I argue that “También la lluvia” uses parallels between the movie in production and the story of Spanish conquest to emphasize the ways in which people continue to take advantage of the labor and land of indigenous peoples. One parallel is found in the use of the “noble savage” and the “white savior” trope, which I compare to

# Video Exhibit



Columbus' perspective in his letter to Luis de Santángel. Another parallel can be drawn between the deculturalization of indigenous peoples, which occurs both in the movie and in history, spurred on by the greed of the conquistadors. Finally, the Cochabamba Water War and the water conflict in the movie demonstrate the continued exploitation of indigenous land that began during the period of the conquest.

**Madeline Short '22**

**Major: History**

**Faculty Mentor: Laura Prieto**

**Project: Gender Wage Gap: Teachers of Hillsborough County, NH, 1878-1890**

This paper uses historic annual school reports from the state of New Hampshire to create, analyze, and visualize a dataset of gender-based pay disparities of schoolteachers in Hillsborough County, NH. The data ranges from 1878 to 1890, encompassing the end of the district system in rural schools following the Town School Act, the professionalization

of teaching and opening of State Normal Schools, women gaining the right to vote on school boards, and the increase in 'urban' spaces in the state. This paper serves as a preliminary look at different ways to portray and interpret teacher wage disparities in New Hampshire schools from 1878-1890. It shows evidence of a "wage premium" as defined by other scholars and discusses different payments based on gender in rural versus urban parts of the New Hampshire countryside.

To analyze and visualize the data, I transcribed the tables from the State Annual Reports into Excel spreadsheets, then used Tableau to create interactive tools to analyze data through graphs and map visuals. Using graph visuals allowed for analysis of change over time by comparing gender as variables and could be broken down town-by-town, where I contrasted the largest town with the smallest. I created maps to visualize the urban and rural towns tagged by population. My conclusions were that though there were fewer male teachers in the

county, they were paid a "wage premium," earning far more than female teachers. Moreover, the urban towns paid much higher overall for men and women than rural towns.

**Katarina Sousa '24**

**Major: Political Science**

**Faculty Mentor: Valerie Geary**

**Project: The Misdemeanor Criminal "Justice" System**

Much of the time, when discussing injustices in the criminal punishment system, the attention is focused on felony cases. As charges that make up 80% of the criminal justice system, misdemeanors should not be overlooked. Racial and class discrimination in the charging and consequences of misdemeanor crimes is stark and deserving of scrutiny, which begs the question, how "just" is the often overshadowed misdemeanor system? What can be done to increase this justice? Prosecutorial Declination and decriminalization are some of the actions that should be taken to orient us towards

justice.

**Macaela Stanislas '25**

**Major: 3+2 Engineering**

**Faculty Mentor: Valerie Geary**

**Project: The Evolution of Black Hairstyles**

There is a long and painful story about African Americans' hair in America that many do not know. In this presentation, I will go through the timeline of African American hairstyles from pre-slavery to today. I will discuss what contributed to these hairstyles and how they affected them and the people around them.

**Nazia Tabassum '22**

**Major: Biochemistry**

**Faculty Mentor: Rich Gurney**

**Project: Endocrine Disruption: BPA and its derivatives in thermal receipt paper**

Bisphenol A (BPA) is an endocrine disruptive chemical found in a variety of consumer products, including photoactive dyes used in thermal paper. Bisphenol A (BPA) is frequently used as a color

# Video Exhibit



developer in thermal paper. Thermal paper is prevalent in daily life due to its use in cash register receipts, therefore opportunities for human interaction abound. Recent research has demonstrated that handling these papers can result in cutaneous absorption of BPA. Nonetheless, regulatory agencies have largely discounted thermal paper as a major source of BPA exposure because BPA has been outlawed, but they refuse to acknowledge that there have been derivatives of BPA used in our daily use materials that are similarly dangerous, if not worse. The objective of this study was to determine whether thermal receipt paper had BPA or its derivatives component in them. For this study, 10 blank cash register receipts were obtained from businesses in suburban Boston. Components from thermal receipt paper were extracted and analyzed using Advion Mass Spectrometer and Thin Layer Chromatography. Based on our observations and analysis of our data, we discovered that BPA is not present in the thermal receipt paper as expected since

BPA was outlawed a long time ago. However, after doing the TLC (Thin Layer Chromatography) procedure, we discovered comparable spotting to BPS in our TLC result, indicating that there could be some BPS component present in the thermal receipt paper.

**Jessica Wei '22**

**Major: Environmental Science**

**Faculty Mentor: Michael Berger**

**Project: Evaluation of Potential Phosphorus Sorbents for Muddy River Remediation**

Phosphorus levels in the Muddy River exceed national standards for what is naturally occurring in fresh water bodies, at levels that contribute to eutrophication. Eutrophication is a problem because it leads to harmful algal blooms that endanger local ecosystems. The Muddy River flows into the Charles River, increasing levels of phosphorus in that body of water which in turn contributes to increased levels of toxic cyanobacteria and even potentially contributing to red

tide in Boston Harbor. We have evaluated several potential sorbents that could be used to reduce the phosphorus levels in the Muddy River and found that one commercially available product, EuroSORB®, has shown to be effective in adsorbing high levels of phosphorus from rivers. In this project, samples of sorbents were placed in solution and phosphorus concentrations were analyzed using methods from the water analysis company HACH – testing for reactive and total phosphorus in solution. Current plans from the Muddy Water Initiative for implementing a pilot program using EuroSORB® in the Muddy River together with an evaluation program for its effectiveness is discussed.

**Julia Wilen '24**

**Major: Spanish, Women's and Gender Studies**

**Faculty Mentor: Beatriz Cobeta**

**Project: Cambios sociales en España: los derechos de la comunidad LGBTQ+ y de las mujeres (Social Changes in Spain: LGBTQ+ and Women's Rights)**

In modern Spain, a new image of the family has emerged, a change that represents the profound cultural shift in the country over the last 40 years, wherein the country has become considerably more culturally and socially open. The new structures and ideas of family today are a reflection of the overarching modernization and secularization that occurred after Francisco Franco's regime. In this work, I focus on data, laws, historical events, and literature to examine these changes, and argue for a new understanding of Spain's cultural position with regards to familial expectations. Specifically, I analyze concrete data about the family in Spain today, compared with during and before the Francoist dictatorship, as well as focusing on laws regarding LGBTQ+ and women's rights. I argue that these statistical changes also indicate the general attitudes and expectations of Spanish society, using this information to explain how the changes in the family structure represent a shift in the mentality of the Spanish

# Video Exhibit

people and culture at large. Understanding literature as crucial to the analysis of Spanish society, I then turn to Óscar Esquivias' "Maternidad," (2008) as a literary example of the representation of new ideas about family. Finally, I compare the familial situation in Spain with that in the United States, and investigate how the US can learn from Spain's more tolerant and open culture.



