



ST. THOMAS AQUINAS COLLEGE

**6<sup>th</sup> ANNUAL ART, DESIGN &  
SCHOLARSHIP EXHIBITION**





## **Ignite your curiosity. Ignite your imagination.**

Welcome to Ignite, St. Thomas Aquinas College's sixth annual Art, Design, and Scholarship Exhibition. Ignite is a celebration of our undergraduate students, their research, and their creativity from multiple disciplines across campus. The scope of the presentations featured showcase the outstanding caliber of our undergraduate students at St. Thomas Aquinas College. We hope that this exhibition will ignite the passion for discovery and ingenuity in all of our students for years to come.

The projects on display also demonstrate the ongoing commitment of our faculty to supporting undergraduate research. As is true of the faculty advisors who support them, these students and their work hold the potential to contribute positively to the world. Each of these students has benefited from mentoring provided by exceptional faculty. We thank the faculty for their efforts on behalf of these students.

We encourage you to share in this showcase as you virtually visit the poster presentations and portfolios, and read the collection of abstracts included in this program and at <https://www.stac.edu/academics/ignite>.

Organized and curated by

Members of the Ignite Committee:

Nina Bellisio, Meghan DeWitt, Kimberly Holt, Melissa Collucci, and Eric Schaffer

Special thank you to Annie Lombardi and the Office of Campus Communications

# IGNITE: 6<sup>th</sup> ANNUAL ART, DESIGN & SCHOLARSHIP (VIRTUAL ) EXHIBITION

**April 29, 2021**

## **Voter Suppression as a Violation of Human Rights**

Presenter: Samantha Pisano

Faculty Advisor: Dr. Chaturvedi, Professor of History

My Ignite presentation will examine how voter suppression in the United States is a violation of human rights. It will explore how voter suppression is able to continue although voting has been deemed a human right by a number of civil liberties conventions and assemblies throughout history. I will rely on information from the long fought battle for equal voting rights in this country, and explore how voter suppression has, and continues to, restrict and impact this battle, especially for targeted groups of minorities. Many still cannot freely or easily cast their ballot in the process that defines democracy, with a number of measures in places that restrict them from doing so, and my presentation will look at the root of these issues and the legislation/ lack of federal regulation that allows this to happen. These measures unequivocally impact the democratic process, and ultimately undermine the fundamental rights and ideologies the United States was established on, and I will aim to uncover how this is able to take place if voting is considered a human right. As a result of this, my Ignite study will examine how voter suppression has been able to be successful, restricting the voting rights of minorities since the nation's very first election, and how it has developed and evolved into the censorship that is taking place today. Accordingly, it will explore the voting population's responsibility and role in ending voter suppression, obtaining equality in voting rights for all.

## **Covid19 and Its Impact on Healthcare Work**

Presenter: Giana Agri

Faculty Advisor: Dr. Carolyn Fraker, Assistant Professor of Sociology

The dynamics of healthcare and frontline work is rapidly changing under the circumstances of the COVID-19 pandemic. In this research, I explore what makes someone an essential healthcare worker specifically in the fight against COVID and how this work has changed since the pandemic. This research reports on what healthcare work entails and the major changes facing healthcare workers during the pandemic, such as changes in: stress, mental health, physical health, family stresses, job satisfaction, and unemployment. This research centers the voices of those directly affected by the pandemic and what it means for their livelihood. For this research, I designed and implemented a qualitative interview study. Specifically, I designed a semi-structured interview guide, completed a research ethics training, and recruited participants for my study. All interviews were conducted over the phone to follow COVID-19 safety and precautionary guidelines. In total four individuals participated in the study, including a nurse, volunteer EMT, and various school nurses. I asked the participants questions about how their work has changed during the pandemic, the mental health toll of their work, and their overall work-life balance through pandemic life. Based on my research, I found that many healthcare workers experienced extreme distress completing their work during the pandemic. This research could greatly influence general policy recommendations on how society can better support healthcare workers and steps that should be taken to prepare for another pandemic.

## **Utilizing Solar Technologies to improve water and electricity quality in South Sudan**

Presenters: IBESCC Case Study Team: Jacob Holland, Taylor Trinidad , Alex Zhinin & Thomas Gorglione

Faculty Advisor: Christine Cahill, Esq., Professor of Business Administration

The people of South Sudan have experienced many issues relating to a lack of clean energy and water. Both of these are crucial elements to create sustainable communities. As of 2018, only about 28% of South Sudanese have access to electricity. One solar panel has the power to fuel a significant amount of electricity and the use of just one solar panel would go along way in these communities. However, 26,000 tons of solar panels will end up as waste this year. With just a small amount of refitting we can take these 'dead' solar panels and breathe new life into them. By converting them to be water safe, we can use them on bodies of water in impoverished communities. This will not only produce much needed affordable electricity for these communities, but will



**VISUAL COMMUNICATIONS**

Carl Lorenz *Spartans Hockey*

also help keep the water cleaner and limit deforestation. By addressing the issue of clean water and affordable energy, there will be far reaching benefits. With the significant decrease in the amount of time that the average person would have usually spent retrieving clean water or doing other domestic tasks. A person can now spend that time on tasks like education or other community service. This will enable communities to rapidly develop far beyond their current scope, while limiting the costs.

## **The Effect of Lemna minor Addition on Selenastrum capricornutum Growth and Nutrient Reduction in Eutrophic Water**

Presenter: Elizabeth Collins

Faculty Advisor: Dr. Bianca Wentzell, Assistant Professor of Biology

Algal blooms can be the result of eutrophic water, which is water that has high concentrations of nutrients such as nitrogen and phosphorus. Water can become eutrophic from runoff containing fertilizer and waste. Lemna minor (Common Duckweed) a floating vascular plant, is a known phytoremediator that can be used to decrease the concentrations of high concentrations of nitrogen and phosphorus in aquatic environments. In this study, eutrophic water with high concentrations of nitrogen and phosphorus and a persistent Selenastrum capricornutum population will be treated with L. minor. The subsequent effect on the concentration of nitrate and phosphate will be tested, as well as the growth of both species. Initial pilot studies indicated that the addition of L. minor may actually improve the growth of the S. capricornutum, at least within the first two weeks of growth, and that their co-culture may result in persistence of phosphate, in particular, when compared to control groups containing L. minor only. Our study seeks to further investigate this relationship and understand its potential implications for addressing harmful algal blooms (HABs).

## **Why Do Borders Exist? : The Social, Political, and Economic Impacts in LatinX Literature**

Presenters: Ibrahim Elayan, Andrew Dacuba & Maria Henriquez

Faculty Advisor: Dr. Maria Ann Roglieri, Professor Literatures, Cultures, and Languages

Borders were established for the purpose of separating areas of land governed by different groups of people. Additionally, the physical barrier that borders provide is meant to prevent the illegal movement of various kinds of contraband. If, however, the government under which people live in a given area consistently fails to act in their best interests, the people may feel compelled to venture elsewhere in search for opportunity. Over time, however, the term “border” has become synonymous with making others feel unwelcome. This has led to the constant alienation of those who identify as LatinX, as they seek refuge from

their previous lives in their home countries to the United States. In order to gain perspective on such alienation, it is necessary to delve into LatinX literature to understand the social, political, and economic impacts that borders create.

## **Vote**

Presenter: Taylor Drain

Faculty Advisor: Carol Lagstein, Professor of Art Therapy

This print series was inspired by the November 2020 elections. After a year shaped by COVID-19 pandemic and a nationwide movement for racial justice, young people's energy who made their voices heard also brought that energy to the ballot boxes and shaped the election cycle as a whole. In the end, young people's turnout in 2020 made a key difference in battleground states, and the participation and overwhelming support for President-elect Joe Biden from youth of color was one of the defining elements of the election. In my opinion, this increased turnout was fueled by young people's anger with a broken system perpetuating injustice and inequality. Young people have banded together to make a more equal and just future for ourselves as well as future generations.

## **Gender Issues for LatinX Americans**

Presenters: Katrina Ott, Ally Gauzza, Gianna LaRosa, & Ryan Collins

Faculty Advisor: Dr. Maria Ann Roglieri, Professor Literatures, Cultures, and Languages

Over the years women have been considered second best to men. As children we were always taught in history class that women stayed home and men went to work. With the work of courageous women who advocated and proved to break these norms, they were able to reshape the identity of women. Although people still might not see women as equal in society in America, we are getting closer to this idea. In other countries women are not treated equally and with as much respect as American women are, especially in Latin countries. Many women decide to leave and create a better life for themselves with greater opportunities by coming to the United States. Since America has still not reached equality with natural born citizens, it is even more difficult for those women who come in to the country not being born here; especially in a time where there is a lot of tensions between US natives and those coming from LatinX countries. In this presentation we dive into the focus of how LatinX women are treated differently in their culture in America, but also with their new found "American Identity".





## ART THERAPY

Taylor Drain Vote!

## **The Individual Need for Control in Conservatism**

Presenter: Samantha Nierer

Faculty Advisor: Dr. Benjamin Wagner, Associate Professor of Psychology

Research has shown that liberals possess a relatively external locus of control and conservatives have more internal locus of control. We explored whether personality variables related to control related to political beliefs among STAC students. The characteristics relating to control that were tested were intolerance of ambiguity, openness to experience, uncertainty avoidance, and self-esteem. The participants were given four different surveys that tested for each of those four characteristics. We hypothesize that individuals who are more conservative will perceive they have a higher need for control, higher intolerance of ambiguity, lower openness to experience, higher uncertainty avoidance, and lower self-esteem compared to more liberal individuals. Because conservative ideology is associated with dogmatism, authoritarianism, and racial prejudice, individuals who are more conservative have a need to have control over the changes in society that will have an effect on their personal lives.

## **Issues in LatinX America**

Presenters: Suzanne Clarke & Daniel Costello

Faculty Advisor: Dr. Maria Ann Roglieri, Professor Literatures, Cultures, and Languages

Throughout our studies this semester in the class “The LatinX Experience: Identity and Life Between Two Worlds,” professor Roglieri educated us on LatinX culture in our country today. Through this insight she provided, it was clear that members of the LatinX community face hardship and discrimination due to their culture. It is a very sad reality, but it is indeed a very true one. Through our research, we found that because of this discrimination, many LatinXs water down their culture to try and assimilate in the United States. In LatinX food, music, and popular culture, we found many examples of this sad truth. In reality, close to every American came from an immigrant at one point in time. Therefore, we should be welcoming this new culture instead of rejecting it.

## **Myths and Monsters of Latin America**

Presenters: Melissa Etter, Katherine Cording & Gabriella Testa

Faculty Advisor: Dr. Maria Ann Roglieri, Professor Literatures, Cultures, and Languages

We’re taking a look at several different myths and monsters from all across Latin America. We explore where these myths started, the cultures they originated from and discuss whether or not the messages these myths offer to the readers can still be considered relevant today.

## **Treating Discrimination Through Virtual Reality**

Presenters: Members of XLAB: Justin Rosenberg, Felicity Popovich, Taulant Xhakli, Makendy Midouin, Michael Sakmann, Jade Alexis Westhoven

Faculty Advisors: Dr. Benjamin Wagner, Associate Professor of Psychology; Dr. Staci Shultz, Professor of English; Dr. Robert Vermilyer, Professor of Computer Science; Nina Bellisio, Professor of Visual Communications & Dr. Evan Matthews: Professor of Music

This study is aimed to investigate and treat discrimination in the daily life of college students with the use of virtual reality. Specifically, this study will focus on collecting reactions to the normalized bias' of race, gender, and weight. The proposed study will use around 60 college aged students who are registered at St. Thomas Aquinas College. Students will be volunteers who are willing to participate in the virtual reality forum. Students will be asked to use the virtual reality headset to put themselves in someone else's shoes. As they enter the virtual reality they will be dropped into a mall scenario.

In this mall they will be able to wander the halls, and enter three respective rooms. The first room will be a dance studio where the students will be tested on their underlying bias against weight. The second room will be a clothing store in which levels of racial discrimination will be tested. The final room will be a movie theater in which the researchers are looking to find a hidden bias against gender. When completed, this can help bring awareness to the user of their possible bias and help them grow from their experiences.

It is generally accepted that unchecked bias is a negative force within each of us. Our bias becomes a problem when we allow it to take control of our conscious thoughts and influence the ways in which we treat others, making this unjust treatment of others discrimination. The goal of this project is to point out the ways that unconscious bias affects each individual, and to use virtual reality to put them in the scenario of an individual who is experiencing discrimination. The question posed as researchers is how can people enhance their empathy for others with the use of technology? This starts with bringing awareness to the ways our bias' affect each other.

By allowing the users to experience a 1st person view of the targeted groups, in turn will hopefully help the user learn to be empathic and not just limit their outward discrimination toward these groups but also be able to recognize and prevent others from doing the same. Whereas experiencing the scenes in a 3rd person perspective would, as studies show, not impact them as much as when being confronted with discriminatory remarks. If successful, it can prove to be significant as this can help change and minimize the unconscious behaviors that people use when interacting with each other.

## **Analyzing App Usage's Effects on Mental health of 18-to-25-year-olds**

Presenter: Isabella Szklany

Faculty Advisors: Dr. Benjamin Wagner, Associate Professor of Psychology & Professor Elaine Winship, Associate Professor of Communication Arts

New forms of communication have provided new opportunities for groundbreaking research about the impact of media on daily life, particularly smartphone usage and social media activity. Research has already shown that increased social media use leads to higher levels of depression and loneliness among 18-to-25-year-olds (Hunt et al., 2018). But while some research points to smartphones, themselves, as the source for mental illness (Demirci et al., 2015), the question posed is: Are smartphones or social media the cause for increased mental distress? In a study of over 100 St. Thomas Aquinas College Students, we hypothesized that social networking sites are the cause for mental distress among 18-to-25-year-olds. In the study, students were assigned to one of two different groups of smartphone apps. The experimental group included social networking sites, such as Facebook, Instagram, Twitter, Snapchat, and Tik Tok, and the control group had email, messaging, shopping, video-streaming services, and news apps. Students were directed to spend ten minutes on one of the assigned apps and then asked to rate their mental wellbeing. Specific traits of mental illness analyzed were anxiety and FOMO (the fear of missing out). We hope that the results point to social media usage as the cause for mental distress.

## **The Role of Personal Decision-Making in Countering Climate Change: A Coastal Louisiana Case Study**

Presenter: Phoebe E. Hemmerling

Faculty Advisor: Dr. Benjamin Wagner, Associate Professor of Psychology

Climate change is a phenomenon in which carbon emissions enter the atmosphere and cause significant changes in temperatures and weather patterns, many of which can be hazardous to human health and wellbeing. Anthropogenic activities are a major contributor to these emissions. Despite the urgency to take action to combat global climate change, people may still find it difficult to make environmentally beneficial changes in their daily routines. A review of psychological literature and qualitative research revealed three main reasons for this disconnect: climate change helplessness, moral licensing, and a perceived distance between themselves and others. Climate change helplessness, based on the concept of learned helplessness, focuses on the belief that climate change is beyond personal control and therefore actions are not beneficial. Another factor that may prevent people from reducing harmful activities arises from moral licensing, a form of psychological bargaining where humans find



**VISUAL COMMUNICATIONS**

Jadealexis Westhoven *Digital Self Portrait*





**VISUAL COMMUNICATIONS**

*Kiarra Facey Represent*

irresponsible behaviors less immoral if they balance them out with good deeds. However, this principle has detrimental effects on the environment, as damage cannot instantly be reversed by another act. The final issue examined was perceived distance. By perceiving oneself as distant from others geographically or temporally, they are less likely to empathize with them. These obstacles to changing behavior are largely psychological but can be countered by taking many personal, small-scale actions. By communicating with others distant from oneself, targeting positive emotions in the marketing of pro-environmental products, and showing the positive impacts of personal decisions, individuals can help prevent the worsening of climate change.

## **Theory and Application of Optical Tweezers**

Presenter: Abagail Kimbrell

Faculty Advisor: Dr. Donald Johnson, Professor of Physics

Optical tweezers have evolved into a sophisticated biophysical and biomechanical technique that has the ability to control the movement of microscopic and submicroscopic objects and particles using focused laser beams. Recent growth in the nanotechnology field has further enhanced the applications of optical tweezers, leading to the development of nanophotonic tweezers, a new class of optical tweezers. There are several biophysical and biomechanical applications of optical tweezers, including, but not limited to manipulation of single cells which can be applied to many different fields, nanoengineering, and quantum optomechanics. The apparatus of optical tweezers, a simplified version of the physics, and the various applications of optical tweezers will be explained and discussed. The cost to purchase equipment for optical tweezers and whether St. Thomas Aquinas College would benefit from having this equipment in the laboratories will also be analyzed and discussed.

## **Out of Sight, Out of Mind: Living With an Invisible Disability**

Presenter: Reagan Prior

Faculty Advisor: Monica Wendel, Associate Professor of Creative Writing

Comedian Stella Young once said, “People are uncomfortable about disability, and so interactions can become unintentionally uncomfortable.” My project, “Three Strikes and You’re Out,” is an attempt to bridge this gap and confront the discomfort that discussion about disability can invoke. This collection of creative nonfiction confronts uncomfortable moments, finding both joy and tragedy in the experience of disability. My study of disability representation in the media, as well as much study of psychological texts such as the DSM-V, informs the creative nonfiction writing that is the basis of this project. This collection will braid together found texts and autobiography to illustrate the experience of having a disability that cannot be seen.

## **Using IHC to Study Immunocompromised Lymphatic Vessels**

Presenter: Gianna Galu

Faculty Advisors: Dr. Steven Burns, Professor of Chemistry & Kimberly Burns, Instructor of Biology

Recent studies have suggested that immunocompromised individuals are susceptible to neurodegenerative diseases, such as Alzheimer's or Multiple Sclerosis, due to varying conditions of their lymphatic vessels. Immunocompromised individuals often have altered macrophages which make up the microglia in the brain, similar to nearby lymphatic vessels. This experiment is being conducted to determine if immunocompromised individuals not only have altered microglia but also altered lymphatic vessels thus leading to lack of filtration, brain damage and subsequent neurodegenerative diseases. In order to make this comparison, a specific antibody, LYVE-1, will be used to attach to a specific receptor found on the surface of lymphatic cells in the brain. Since this antibody only binds to a specific receptor on a specific cell, this immunohistochemistry technique is crucial when identifying cell markers. The antibody LYVE-1 will be used to compare the lymphatic vessels of immunocompetent and immunocompromised mouse tissue, with the long term goal of supporting future human neurodegenerative research.

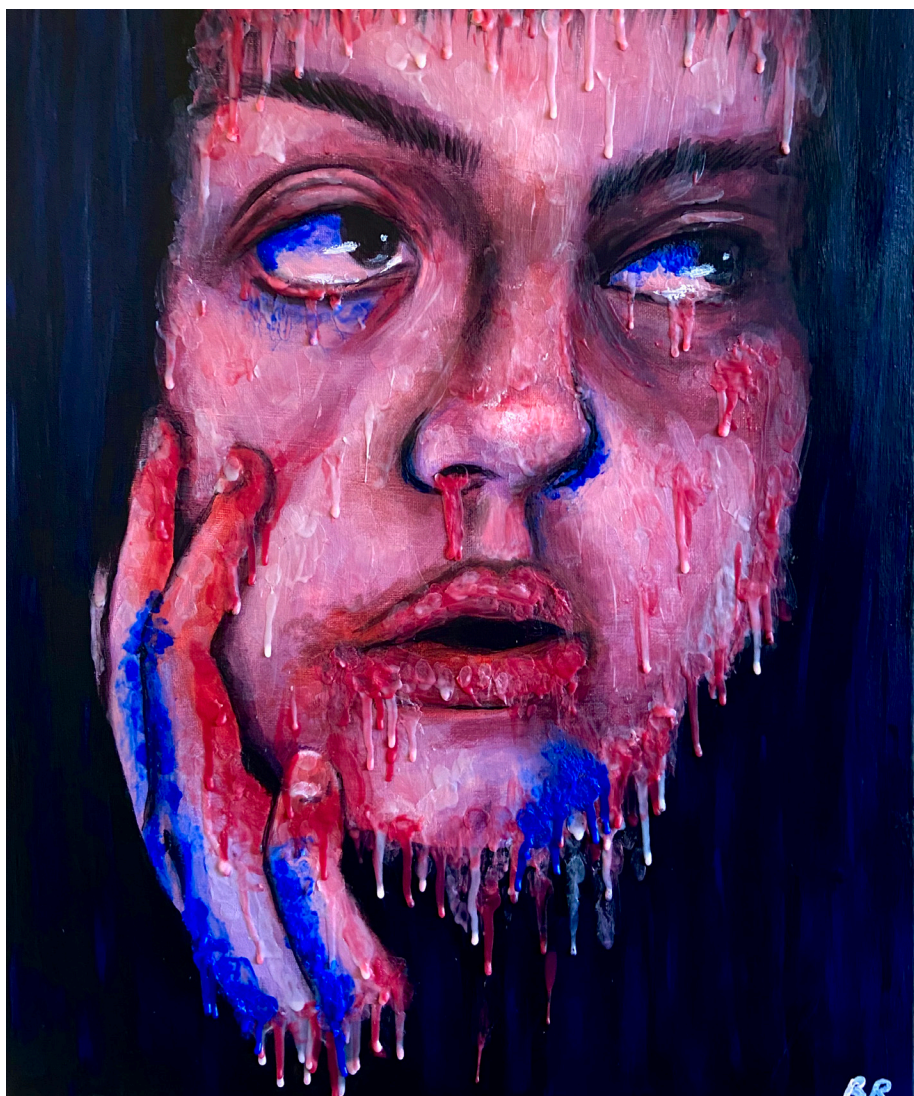
## **Real Grief in Different Forms: The Dying, The Dead, Your Family's Home, and Those You've Never Known (A Creative Writing Portfolio)**

Presented by: Kathryn Cambrea

Faculty Advisor: Monica Wendel, Associate Professor of Composition and Creative Writing

This project is a culmination of works of poetry, fiction, and creative nonfiction with the theme of grief pertaining to the writer's roots. This portfolio proves that writing of any kind draws inspiration from a writer's own life and that grief does not solely pertain to people known who have died. It pertains to people you have never known, especially when there are objects that serve as constant reminders of their presence. The writer explores in her writing how she herself resembles someone she grieves: her grandmother, Yiayia, who passed before she was born. The writer grieves family abroad and here who are alive as well as family she has known who have died, like her grandfather, Papou. The writer even grieves the place of her maternal roots itself: Greece. Her work is pertinent to this time in that the COVID-19 pandemic has magnified the distance she feels between her family abroad, emphasized in her creative nonfiction piece, "Blue in the Gray." The writer dissects memories she has of visiting her grandparents' homeland and of her grandfather. She employs objects, symbols, and animals of significance as threads between her works—poetry, fiction, and creative nonfiction—alike. Otherwise, without memories, they, along with the stories of others, serve as the only evidence of a connection to a place or person.





## ART EDUCATION

Rebecca Rivera *Melting Painting*



## **VISUAL ART**

Davin Johnson *Plan A*



## **VISUAL ART**

Giselle Castro *Pattern*

## **College Fed Challenge 2020**

Presenters: Suzanne Clarke, Aaron Dona, Declan Pattermann, Niamh McKevitt, Tim Henion & Federico Scaglioni

Faculty Advisors: Dr. Meghan Mihal, Professor of Economics & Dr. Rossen Trendafilov, Associate Professor of Finance

In October 2020, STAC gathered a team of six students working remotely from three different countries to participate in the nationwide College Fed Challenge competition. The ultimate goal was to create a compelling, yet practical, proposal for U.S. monetary policy that aligned with the Federal Reserve's dual mandate of stable prices and maximum sustainable employment. To achieve this, we spent much of our time using the remote access to the Bloomberg Laboratory Terminals analyzing key economic trends in domestic production such as labor market conditions, unemployment, the productivity wage gap, and market volatility. In addition, the team also kept potential risks in mind, such as geopolitical factors, overall debt level, capital markets, and pressures relating to the COVID-19 Pandemic and the upcoming Presidential Election. In addition, the team kept potential global developments in mind such as emerging vaccines as well as possible effects of trade war. At the conclusion of our research, we compiled our findings and monetary policy suggestion into an informative research, coherent presentation that was recorded and submitted to the Federal Reserve Bank of NY. Our final recommendation for the Federal Open Market Committee was to hold course: maintain the current target fed funds rate, current interest rate paid on excess reserves, continue to grow its holdings of Treasury securities and agency mortgage-backed securities at least at the current pace, and retain the new lending facilities to continue the ease of liquidity and stability in the economy.

## **The Learning Lab Takes Flight: A Classroom Management Plan for the Pearl River Public Library**

Presenter: Katie Bertussi

Faculty Advisors: Dr. Athena McAlenney, Associate Professor of Education & Kathy Rodenbach, Instructor of Education

Many teachers mistakenly assume that their students' behavioral difficulties are largely beyond their control, when in fact, the opposite is true: the teacher, and the plan he or she makes to manage behavior, is "the most critical element". This study developed a research-based classroom management plan for a diverse population of third through sixth grade students attending 90-minute STEAM programs at the Learning Lab in the Pearl River Public Library. From Summer 2018 to Fall 2021, a number of behavioral problems were observed, including students calling out, struggling to learn from teacher instruction, and weak teacher-student relationships. For this study, antecedents, behaviors and consequences were evaluated for each problematic behavior, and a





## **VISUAL COMMUNICATIONS**

Nicholas Flannery "It's a Wonderful Life" poster

comprehensive, culturally-responsive classroom management plan was created to support students' behavioral, academic, and social success. Behavioral supports included the creation of a system of rules and consequences with an accompanying plan of delivery. Academic supports included the addition of a real world anticipatory activity, the adoption of an explicit instruction framework, and a closing activity for students to give and receive project feedback. Social supports included a class "get-to-know-me" jamboard, a greeting procedure to establish teacher-student relationships, a classroom statement of purpose, and a Bitmoji classroom to extend community and academic growth beyond the classroom. All of these interventions, in combination with an action plan to ensure the continuous improvement of this plan, all serve to proactively manage student behavior, and ultimately, improve the quality of life in the lab.

## **Packaging**

Presenter: Jeanette Dick

Faculty Advisor: Dr. Evan Matthews, Associate Professor of Music

"Packaging" is a continuation of last year's immersive performance art piece exploring garbage and its possibilities for sound. Throughout the past year, the use of single-use plastics has gone up, especially due to take-out eating. Although not the issue at the forefront of everyone's minds right now, irreversible climate change is still ever-present. Finding ways to reuse and be resourceful, while still staying safe and sanitary in a global pandemic, is crucial. As an art therapy major, I am more than aware of the power of the arts. Channeling our feelings into a performance, using the music of the ukulele and sounds derived from the very same everyday disposable materials that we aim to call attention to, we have collaborated to create a one-of-a-kind experience exploring the possibilities of music and expression. We simply invite you to immerse yourself in the experience.



# AZARIAN MCCULLOUGH ART GALLERY

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