



# Multicultural Undergraduate Research Art and Leadership Symposium

March 30, 2018  
LSC Grand Ballroom A&B

Colorado  
State  
University



An Equal Access and Equal Opportunity University

# MURALS Schedule

9:45a – 10:15a	Registration and Poster Set-Up	Grand Ballroom Lobby
10:30a – 11:45a	Workshops	LSC 308, 310, 312
12:00p – 1:00p	Luncheon	Grand Ballrooms A&B
1:15p – 2:15p	SESSION I PRESENTATIONS	See page 5
2:30p – 3:30p	SESSION II PRESENTATIONS	See page 5
3:45p – 4:30p	POSTER GALLERY	Grand Ballrooms A&B
5:00p – 5:30p	Awards Ceremony	Grand Ballrooms A&B



# Welcome!

Welcome to the fourth annual Multicultural Undergraduate Research, Art and Leadership Symposium, we truly appreciate your presence. With MURALS, we are intentionally reaching out to students of color in various disciplines and exposing them to a variety of undergraduate research opportunities. Mentoring, presenting research, networking, and learning about multicultural leadership are four main aspects of the program.

A special acknowledgement to all the student participants, graduate student evaluators, and the Colleges and Divisions who supported this endeavor. The event would not have been possible if we did not work together to enhance student's educational experience at Colorado State University.

MURALS co-chairs,

*JoAnn Cornell*, Director, Asian/Pacific American Cultural Center

*Melissa Edwards*, Associate Director, Office for Undergraduate Research and Artistry

*Bridgette Johnson*, Director, Black/African American Cultural Center

*Arlene Nededog*, Director of Inclusion, College of Natural Sciences

A special thank you to the MURALS sponsors:

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- Graduate School
- The Mountain and Plains Education and Research Center
- Morgan Library
- Office of the Vice President of Diversity
- Office of the Vice President for Research
- Office of Undergraduate Affairs
- The Institute for Learning and Teaching,  
Office for Undergraduate Research and Artistry

## Acknowledgements

### **MURALS Committee:**

- Dr. Lumina Albert, College of Business
- Dr. Antonette Aragon, School of Education
- Dr. Melissa Burt, Atmospheric Science, College of Engineering
- JoAnn Cornell, Asian/Pacific American Cultural Center
- Dr. Melissa Edwards, Office for Undergraduate Research and Artistry
- Dr. Michelle Foster, Food Science and Human Nutrition
- John Henneberg, Academic Advancement Center
- Bridgette Johnson, Black/African American Cultural Center
- Arlene Nededog, College of Natural Sciences, Dean's Office
- Dr. Guadalupe Salazar, El Centro
- Stephanie Zee, Residence Life, Diversity and Inclusion Coordinator

## A SPECIAL THANK YOU TO:

### Faculty & Staff Mentors

Eric Aoki  
Tori Arthur  
Natalie Barnes  
Masako Beecken  
Jifeng Bian  
Ray Black  
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Bradley Conner  
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Joey Smith  
Caridad Souza  
D-L Stewart  
Mike Tamkun  
Glenn Telling  
Fernando Valerio-Holguin  
Neomi Vin-Raviv  
Katharine (Kate) Wormus  
Mark Zabel

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Kimberly A Nichols  
Elham Alhudithi  
Mauricio Antunes  
Cris Argueso  
Tori Arthur  
Natalie Barnes  
Karen C. Barrett  
Samuel Bechara  
Aditi Bhaskar  
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marcela velasco  
Tiffany Weir  
Jesse Wilson  
Carol Wilusz  
Glenn Sandiford

### Graduate Student Evaluators

Della Agbeke  
Trevor Aguirre  
Malik Zohaib Ali  
Shadi Azadegan  
Carolina Banuelos  
Hayley Blackburn  
Elijah Brice-Middleton  
Ashley Budde  
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Matthew Cackovic  
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Dominique David-Chavez  
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Elham Musa  
Gerardo Narez  
Afnan Shazwan Nasaruddin  
Michael Nguyen  
Oluwatobi Oke

**Also, Thank You to All Volunteers**

# Workshops

## 10:30 – 11:45am

### **LSC 306: Education Abroad: Make It Happen**

*Emily Garner, Education Abroad Coordinator, International Programs*

A study abroad experience at CSU can range anywhere from 1 week to 1 year, can help you graduate on time, and stand out in your career post-college. Education abroad isn't just going to class in another country-- it can be experiential, culturally immersive, an internship, or research abroad. Come learn about all the options available to you, how to fulfill degree requirements abroad, how to break down barriers, the benefits of education abroad - personally, professionally, and academically, as well as costs, financial aid, scholarship opportunities, and how to make it work for you.

### **LSC 308: What is Research?**

*Melissa Edwards, PhD, Associate Director, Office for Undergraduate Research and Artistry (OURA), The Institute for Learning and Teaching (TILT)*

The Office for Undergraduate Research and Artistry is dedicated to facilitating meaningful undergraduate experiences that expose students to diverse opportunities to work with faculty or industry representatives within their discipline. These opportunities are intended to provide students with an extension of the learning experience beyond the classroom, to foster mutually beneficial relationships between students and faculty and between students and industry, and to impart experience-based credentials to undergraduates seeking to enhance their resume. Learn more about your programs and how we can help facilitate these benefits. For ALL majors and interests

### **LSC 310: Diversity and Inclusion in Leadership**

*Carl Olsen, Program Coordinator for Men's Programming & Violence Prevention, Women & Gender Advocacy Center and Emerald Green, Assistant Director of the Black/African American Cultural Center*

Leadership is a complicated process, maybe more so than inclusivity. This workshop will help understand the dynamics of power and privilege in the context of leadership!

### **LSC 312: Graduate Student Panel Reflecting on Their Educational Journey**

*Moderator: Arlene Nededog, Director of Inclusion, College of Natural Sciences*

*Graduate Student Panel consisting of current CSU Master's and PhD students will share and discuss their personal experiences about graduate school.*

# Schedule of Presentations

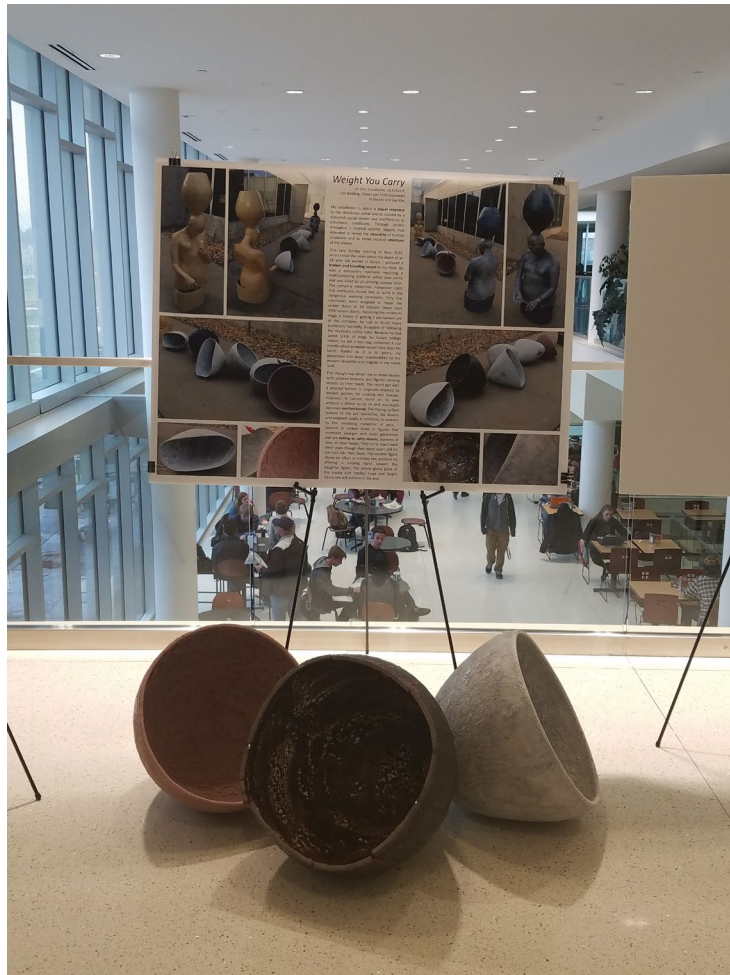
## Poster Session I from 1:15pm-2:15pm

LSC		
Room	Time	Name
226	1:20-1:30p	Deborah Ilangikwa
	1:35-1:45p	Ronald Fontenot
	1:50-2:00p	Kiri Mitchell
	2:05-2:15p	Kassayndra Meyer
228	1:20-1:30p	Anahi Leon-Duarte and Amanda Horn
	1:35-1:45p	Mariah Wang
	1:50-2:00p	Jame Fuerte
	2:05-2:15p	Christian Johnson
304	1:20-1:30p	Zelle Moore & Jakya Bridges
	1:35-1:45p	Arianna Delgado
	1:50-2:00p	
	2:05-2:15p	
306	1:20-1:30p	Whitney Marsh
	1:35-1:45p	Kristell Arauz
	1:50-2:00p	Brandon McCarron and Elizabeth Hart
	2:05-2:15p	
308	1:20-1:30p	Chiara Flores
	1:35-1:45p	Athena Koss
	1:50-2:00p	Emily Pantoja
	2:05-2:15p	Adiam Tesfaselassie
310	1:20-1:30p	Jasmine Ontiveros
	1:35-1:45p	Lorena Fuentes Ibañez
	1:50-2:00p	Arianna Leal
	2:05-2:15p	
312	1:20-1:30p	Janaye Matthews and Nicolette Peerman
	1:35-1:45p	Aleena Crockett
	1:50-2:00p	Ally Johnson
	2:05-2:15p	Fatima Lizardo
322	1:20-1:30p	Arisson Stanfield
	1:35-1:45p	Peijie Gao and Ke Liao
	1:50-2:00p	Isaiah Martin
	2:05-2:15p	Hana Gebru
324	1:20-1:30p	Michelle Mendoza
	1:35-1:45p	Nicole Acheampng
	1:50-2:00p	Dominique Rosendo
	2:05-2:15p	Debbie Mcgee
328	1:20-1:30p	Beatriz Esparza
	1:35-1:45p	Morgan Berner
	1:50-2:00p	Corissa Norwood
	2:05-2:15p	Bethany Andrade
330	1:20-1:30p	Taylor Latimer
	1:35-1:45p	Elizabeth Gordon
	1:50-2:00p	Jiuying Cheng
	2:05-2:15p	Courtney Satchell
372	1:20-1:30p	Sametra Woods
	1:35-1:45p	Vanessa Sanchez
	1:50-2:00p	Selam Werede Tewahade
	2:05-2:15p	Gabriel Segarra
374	1:20-1:30p	Jordan Rose-Williams and Jessica Herrera
	1:35-1:45p	Rolando Howard III
	1:50-2:00p	Devin Jones
	2:05-2:15p	Tyler Thomas-Fenderson

## Poster Session II from 2:30pm-3:30pm

LSC		
Room	Time	Name
226	2:35-2:45p	Michael William Miller and Erik Cristan
	2:50-3:00p	Roberto Ramos
	3:05-3:15p	Andrea Hernandez
	3:20-3:30p	Saxon Felix Martinez
228	2:35-2:45p	Sabrina Pribyl and David Purcella
	2:50-3:00p	Isabelle Rayburn
	3:05-3:15p	Raeven Clockston
	3:20-3:30p	Tianna Zachariah
304	2:35-2:45p	Zelle Moore
	2:50-3:00p	Diego Lopez-Duran
	3:05-3:15p	Kalyn Bonn and Annie Ngo
	3:20-3:30p	Rahma Jama
306	2:35-2:45p	Whitney Marsh
	2:50-3:00p	Puleng Marutle
	3:05-3:15p	Victor H. Aguirre
	3:20-3:30p	Jacob Cox
308	2:35-2:45p	Gabriella Moreno
	2:50-3:00p	Olga Gandarilla
	3:05-3:15p	Michaelah Coleman
	3:20-3:30p	Yasmine Amon
310	2:35-2:45p	Dominica Manlove
	2:50-3:00p	Augusta Irechukwu
	3:05-3:15p	Val Hiraki
	3:20-3:30p	Jhasmyne Cooper-Moore
312	2:35-2:45p	Zion Jones
	2:50-3:00p	Demi Serrano
	3:05-3:15p	Mikaela Elder
	3:20-3:30p	Jess Gomez
322	2:35-2:45p	Anita Bancroft
	2:50-3:00p	Bethany Norwood
	3:05-3:15p	Hana Gebru
	3:20-3:30p	Bethany Andrade
324	2:35-2:45p	Aritza Vanessa Rivera
	2:50-3:00p	Michelle Mendoza
	3:05-3:15p	Eduardo Hernandez
	3:20-3:30p	
328	2:35-2:45p	Mohammed York
	2:50-3:00p	Kenyatta Richardson
	3:05-3:15p	Joseph Ryan
	3:20-3:30p	Sarah Siayap
330	2:35-2:45p	Sofia Gonzalez Jimenez and Keabeth Gonzalez
	2:50-3:00p	Jayla Hodge
	3:05-3:15p	Arianna Leal
	3:20-3:30p	Lena Cuevas
372	2:35-2:45p	Dani Diaz
	2:50-3:00p	Joseph Gallegos
	3:05-3:15p	Casey Key
	3:20-3:30p	
374	2:35-2:45p	Jinjara Clanton, Jackie Callejo and Billy Poon
	2:50-3:00p	Devin Jones
	3:05-3:15p	Daiszha Cooley
	3:20-3:30p	Kent Washington III

# VISUAL, CREATIVE AND PERFORMANCE ART ABSTRACTS



## Communication through Dress

*Yasmin Amon*

*Major: Apparel and Merchandising*

I will focus on using dress, fashion and style as a form of nonverbal communication. I will explore this aspect of dress by creating and presenting a clothing brand that showcase my original designs and fashion illustrations. The textile I will focus on is kente cloth, a traditional fabric of Ghana located in West Africa with a rich cultural history. The silhouette of my designs is influenced by the Harlem Renaissance that took place during the 1920s in New York. I will use this opportunity to talk about the African diaspora and the cultural blends that are connected to dress. The Harlem Renaissance was a revival of the Black community in the United States after centuries of push back and strife, while kente cloth embodies the resilience of Ghana before, during and especially after being colonized by the British. The flapper style and loosely fitted dresses of the 1920s represent the freedom and liberation of women's bodies, which can also be translated into the liberation of Black art and culture. During the Harlem Renaissance new music was formed, visual artists rose to fame and African American authors, writers, speakers and activists came to the forefront of literature. The interweaving of kente cloth in my designs represents the remembrance of our roots. This highly regarded fabric was historically only worn by royals in Ghana. The intended symbolism of this textile in my designs is to remind African Americans, and other people affected by the diaspora, that they are not decedents of slaves but of kings and queens. My clothing line is the main part of the project, but I will also address parts of the business model and explain the step-by-step process of designing apparel and cultivating a brand. This process includes development of a design concept, creation of a clothing line, advertising and marketing, production cost and industry requirements such as hangtags and labels. By combining diasporic textiles traditions with the fashionable silhouette of an important period in Black history, this project brings to light the role and contribution of Black people to the textile and fashion industry.

## My Love is One Wrapped in Guilt

*Bethany Andrade*

*Major: Ethnic Studies and Criminal Justice*

I wrote this slam poem in a time where I was really trying to figure out my own identity and how my sexuality fit into it. This poem is not meant to speak for the queer community, but for myself. In this piece I speak about my own experiences and memories as a queer bisexual woman. I was influenced by an art instillation in which queer girls answered the question, "Have you ever been with a woman?" he asked; in response women shared their stories, however intimate, however long, however requited. It caused me to look into my own life and how my experiences have shaped how I react to my current environment. It was difficult to pinpoint which stories I wanted to share and how much I wanted to reveal, but in the end, I realized that this is my life, and no matter how I phrase situations, they happened and in turn made me who I am. I chose to write a slam poem because I felt it was the best way to convey everything that I wanted. I have been writing poetry for a couple years and it has always helped me identify and collect my thoughts and my feelings and express them to others.

## Devilman

*Kristell Arauz*

*Major: Zoology*

My art piece depicts a “Devilman” that continues to embrace the human heart he had before it was placed in “shell” of a devil. Even with the corruption present in the world that so desperately tries to change a person: “Devilman” continues to hold his humanity and act accordingly on his feelings expressing the emotions of those that can’t due to corruption. I wanted to capture the essence of his human heart and in having one, such emotions such as empathy could be source of strength rather than a weakness. After watching the Netflix original the DevilMan: Crybaby I felt extremely inspired to pursue the topic of heavenly and demonic figures among humans. The entire run of the show Satan and God were working in the midst having a huge influence on humanity, while no one was aware of these puppeteers. I wanted to express that even with the bigger spiritual influences occurring that you can still stay true to yourself even when you’re made out to be the villain, when in fact you’re more human than the actual humans themselves. Which is portrayed through my “Devilman”; the bible along with Devilman: crybaby as mentioned before, were huge influences for my piece. The medium used of the piece was acrylic on canvas, it’s the medium I’m familiar with using and since it’s a layered paint always me to create more depth within the pieces. The creative process was for it to be representational and depict humanities lack of empathy.

## The Winter of 2018 in Korea

*Jiuying Cheng*

*Major: Graphic Design*

The project I am doing now is creating a digital design of a wall mural for winter Olympic in Korea, 2018. I am illustrating a large-scale image for placement onto an indoor and outdoor venue. I am going for the idea that combining the traditional Korean culture and the winter Olympic features in my work. The way I am doing is to make the traditional culture transform and interact with the elements which represent the winter Olympic. First of all, I researched on the traditional costumes that Korean people wear, from the designs to the colors. I did pay attention to the point that the people may wear differently because of their different status. I did not choose the high-status costume design because I wanted to make audience feel close to the Olympic and everyone would be involved into this international sporting event. Also, I pick the color combination which is most suitable for the winter Olympic theme and is also traditional color which could represent Korean culture. Moreover, I did a lot consideration about where the mural will be placed and how audience would experience the interacting with the mural. Finally, I focus on how to rearrange the figures and the details in the space, in order to help them look in a harmony and work with each other in a good way. The critiques also took place in classes from professor and classmates. Lots of improvement were made to create a better work.

## Black

*Michaelah Coleman*

*Major: Communications*

My poem, Black, captures the shifts between "What we are", We being African Americans, to "What we aspire to be" to "how we grew up" and lastly to "How we are treated and what we are portrayed as", which also directly correlates to the different size letters in the title. When looking for inspiration, I found that it was rooted in the media. When Blacks are in the media, more specifically on the news and on social media platforms, we are always usually associated with some negative, be that, of criminals, or being shot dead in the streets by our own, and by others, which gives a certain audience a negative portrayal about our values and ways of life. I chose to write about this topic because I think that it's extremely important, for not only black men, but black women as well, to know that they came from a culture that has shook and shocked the world, and that we can be successful outside of how we are portrayed as in the media. My poem is written and designed to inspire young Black men and women, my age and younger to aspire to work together, stand together, and fight together, in a system that was created for us to fail, because at the end of the day, we are Black, and we are struggling and dealing with the same prejudice and racism and bigotry that has taken society by whole.

## Mayan/Mexican Indigenous Mothers of Healing

*Dani Diaz*

*Major: Ethnic Studies*

The office of Women and Gender Advocacy Center is hosting an event, titled Radical Self Love for Sexual Assault Awareness Month (SA.A.M). There will be various workshops related to healing throughout the Student Developing Programing Services (SDPS) Offices. As a student staff member in El Centro, I will be creating an interactive activity that infuses art and spirituality being a healing process from sexual assault as well as other forms of violence. The interactive activity will center around the Mexican Indigenous mothers as a form of healing. The purpose of study is to identify who can find refuge in culturally relevant spiritual figures in times of need and support. My plan for the interactive activity is to be educational as well as able to be taken home. The booklet for creative healing will include indigenous art pieces, of La Virgen de Guadalupe and the Mayan goddess Ix Chel, that can be colored in as well as the background to that information. I will ask for a survey to be filed prior to the activity to locate their emotional state prior to the activity of healing. The goal is that the participants will feel a sense of healing as well as connectedness to their roots, if they identify as Latinx.

## Blood

*Saxon Felix Martinez*

*Major: Art*

The theme of this work is racism. Most of my life people have told me what I can and cannot accomplish due to the color of my skin. As I have grown older, I find that racism has continued to spread. Because I am older, I am now more aware of how people look at me and how they treat me than when I was a child. I would like to say that I have seen a drastic positive progression in regards to racism, however, that is not the case. What inspired me to create this work is the hope that one day my children do not have to experience the same belittling treatment that I have had to deal with in my life. What I want for them is for others to treat them as equals. I created this work to spread a message of unity, rather than a message of division, in hopes that it will be embedded in the hearts and minds of others. In my creative process I strip my intended ideas for my work down to a few basic elements. At times these elements are message, shape, and color. If I cannot convey my ideas within these basic elements, I start my creative process over again. Once I find a design that I like I examine the message of the piece, at that point I either do not add text to allow the viewer a more undefined path into my work or add text to guide the viewer towards a specific idea. As for shape I base that on how I want my work to be perceived. The size of my work evokes different types of interaction with what is being displayed. I find that a smaller object is a more controllable idea. A larger object demands attention with its presence. As for color, I want to use my personal experience of color as a directorial tool that allows for basic communication. For this work I chose wood because of size and the ease of manipulation it allows for me when creating my message. I wanted my message to be inscribed rather than painted on to show the significances of what racism is doing to current and future generations. To engrave the wood is to recognize the marks that are being left on people that harbor racism and those that feel its effects on a daily basis.

## ELLA

*Ronald Fontenot*

*Major: Electronic Arts*

Ella Fitzgerald was a brilliant artist and helped mold the musical genres we know as jazz, swing, bebop and ballads. Her sweet youthful voice earned her the titles of "Queen of Swing" and "First Lady of Song". In my work, I attempted to illustrate and celebrate the life and career of this legendary star through the use of symbolism, collage, cartoon imagery and illustration. I chose a digital medium as a way of combining new technologies with classic music from the 20th century to show the timelessness of Ella's work. All in all, my hope is to cherish, explore and expand the knowledge of Ella Fitzgerald and introduce her to new generations so that they might discover the talented legend.

## Gwendolyn Brooks – The Life of a Niggah

*Hana Gebru*

*Major: Biology*

Gwendolyn Brooks is by far one of the most fascinating Black women in the history of America. Not only was she a teacher, but a successful poet and renowned author. From the struggle of growing up in war struck America and increasing racial barriers, Gwendolyn Brooks was able to draft several masterpieces that illustrated what it was like to be a poor Black woman in the United States. Her countless works of literature shed light on the never-ending battles of Black women, reminding readers they not only had to fight to have the same rights whites, but domination over their bodies and choices as women. Being one of the few Black female poets, she worked hard to remind the nation that while Black people fight the same war in race, a Black woman's struggle is different from a man's. She did, however, have many works that highlighted the overall Black struggle. Fortunately, her intense, heartfelt series of books and poems did not go unnoticed. Brooks' poems were a reminder to this nation that the Black spirit of the country cannot and will never be broken. The intensity of her poems embodied the wisdom and complexity of the Black mind, the variety and richness of Black culture, and the power and depth of the Black soul.

## Black Leaders

*Miya Giffin*

*Major: Cultural Anthropology*

This piece is a depiction of prominent influential Black leaders including athletes, poets, activists and artists in collaboration with students involved with B/AACC and represents the impact these leaders' actions and ideas have had on young students of color, reflecting the achievements made in our generation since their time. Some of the people depicted in the painting include Dr. Martin Luther King Jr., Malcolm X, Jean-Michel Basquiat, Maya Angelou, Angela Davis, Harriet Tubman, Tupac Shakur, Barack Obama, Frederick Douglass, and Rosa Parks. I chose to paint people whose work fall into various categories to show the diversity of success and work that people of color have achieved throughout history. My motivation for this piece came from the respect I have for the people of color who have made contributions bigger than themselves for the greater good of their communities including breaking the barriers set upon people of marginalized identities and redefining the ideologies of what it means to be a leader in America. The medium I chose was acrylic paint because I wanted to be able to capture the facial features of the individuals I painted as well as include some of their symbolic quotes or phrases to make them recognizable and acrylic paint is one of the most feasible to achieve this. I hope that my work in this transformative piece serves as a tribute to the individuals that it depicts and alludes to the importance of their contributions and ideas.

## The Realization of PTSD

*Rolando Howard III*

*Major: Psychology*

A traumatic event, has the ability to affect your natural capacity to reason and cope. Post-traumatic stress disorder (PTSD) is a specific mental illness that has gained the attention of the public health systems. This disorder is developed through experiencing an event so intense that your life seems threatened. I am a combat veteran of “Operation Iraqi Freedom”, where my life was threatened many times and have developed PTSD because of my experiences. My goal is to share my traumatic experiences and coping mechanisms in hopes to continue to make awareness for PTSD. I want survivors to know that PTSD does not make you it creates you. To that effect I have spent the last 30 years understanding what passion is and how it has and continued to positively affect me. Expressing myself through music instrumentation has been my saving grace; I have found that it is therapy for my soul and has the ability to activate the happy chemicals in my brain. From this I have learned that I am not the only person that re-charges through some form of art. I have also found that with this form of expression I can connect with people and share ideas with minimal anxiety. I would argue that it’s not what you have been through, it’s how you create a world around you that fans your fire and keep it burning.

## Lenses of Change

*Augusta Irechukwu*

*Major: Applied Computing Technology*

This piece is to be a reminder for how far we have come as Black Americans. The art is made using previously photographed prominent figures in black history. The theme of the work was inspired by a combination of quotes. The first being, “if you can’t fly then run, if you can’t run then walk, if you can’t walk then crawl, but whatever you do you have to keep moving forward” by MLK Jr. This is shown by the work each figure put into advance black people in America. The second quote being, “If I have seen further it is by standing on the shoulders of giants” by Isaac Newton. Each figure has been able to achieve more for black people because the prominent figure before them was able to stand on the shoulder of the giant before them. Lastly, “Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly.” by MLK Jr. This piece is designed to highlight black figures in the fight for social justice. When one marginalized group gets justice I believe we all, marginalized or not, benefit.

### Apeiron

*Christian (CJ) Johnson*

*Major: Art*

The focus of my practice and research in art is to investigate abstract concepts, philosophy, and ideas through the means of photography and new media. Concepts and ideas such as Liminality, Aporia, and Apeiron interest me because they are concepts that we as humans know and clearly recognize, but that we do not acknowledge very often. I use photography and experimental video and sound to express these ideas to bring attention to them and to address them as being real. I use strategies such as appropriation, photo manipulation and light painting to give my art an abstract and surreal look in attempt not to fool people, but to make people wonder and ask me how the work is made. My work tends to draw the audience in and make people ask questions and this helps me engage with the community about art and concepts that normal wouldn't be brought up otherwise. It is in this engagement that I not just inspire people, but I become inspired and learn from my audience as much as they learn from me and the concepts and methods I use for my artwork.

### Impact

*Taylor Latimer*

*Major: Neuroscience*

The purpose of this short story is to look at part of the life of a victim of police brutality. To show that the lives lost in real life are not meaningless and everyone had the potential to greatly impact the world but do to unfortunate circumstances they are no longer able. As well as how do to our justice system and social prejudices the families of victims receive no kind of restitution and are left with nothing.

### The Devil Within

*Whitney Marsh*

*Major: Political Science*

“The Devil Within” is a poem about the struggles of being a minority in the United States. It includes the emotional roller coaster that some people experience during their time in a predominately white country such as the United States. This poem tells the tale of an individual African American and their experiences of oppression and is not meant to be representative of all minorities’ thoughts, feelings, and beliefs. The poem format feels to be an impactful way of sharing experiences without having to subjectively interpret visuals. It allowed me to structure the text to highlight key terms and sections that define my experiences and perspectives which I drew upon to produce this writing.

## Artivism: Black Women's Reclamation of the Past, Present, and Future

*Puleng Marutle*

*Major: Cultural Anthropology*

My artwork centers Black women while using the lens of Afrofuturism, Black Feminism, Artivism, and Spirituality to explore the beauty, creativity, and complexities of Black women. As I explore Black womanhood in others, I also seek to define and redefine what it means to be a Black woman for myself. For many years I was able to explore my Blackness, but never my womanhood. Through my work, and the lens I use, I seek to explore both identities as one. My life and the lives of other Black women around me have inspired me to illustrate our complexities and feelings as we navigate the worlds or world's.

## A Love Letter to Yourself

*Michelle Mendoza*

*Major: Animal Sciences*

My enrollment at CSU was a shock to my family, my friends, and myself. In the two years since my arrival here, I've been trying to reconcile from the amazing opportunities I've been blessed to receive here; with the shadow of the person I was before I managed to get back on my feet. The people I've encountered at this institution gave me the support I needed to begin to forgive myself and the loved ones I ran away from with the excuse of education. By finally allowing myself to feel secure in a space, I was able to not only begin to heal, but to help others who'd felt the same raw emotions and obstacles as me. This piece is a letter to my past self, the part of me that still lingers at the edges of my subconscious even while I continue to chase my dreams. It's a love letter to everyone who can relate, and a thank you to those who helped to pull me through my darkest times. Too often, as people, students, business owners, parents, siblings, and significant others, we tend to get lost in everything we've had to do to reach the point in life we find ourselves now, forgetting to appreciate what sits right in front of our eyes. My hope is that these words remind you to never stand in your own way. There are bigger things to contend with than being your own worst enemy.

## Perfection Does Not Exist

*Corissa Norwood*

*Major: Health and Exercise Science*

My piece, "Perfection Does Not Exist" represents the fact that humans must be perfect, especially women. Women are expected to be "perfect" in every aspect, especially when it has to deal with their bodies. Men always tell women that they beautiful with makeup, but when they don't wear it they aren't as beautiful and come off as sickly. In this series of drawings, you will see the hurt women face today and yet how beautiful they are. There will be tears, but through those tears you'll see a real beauty. Thus, why women are roses like the ones who grew from concrete.

## Manga and Anime: Infatuation and Adaptation of Japanese Pop Culture in the United States

*Emily Pantoja*

*Major: Art*

As early as I could comprehend my ethnicity, I have possessed a deep fascination with Japan. I have been encouraged to explore this passion by loved ones and have fostered a love of many arts originating from Japan, most importantly manga comics and anime. But as this relationship has continued into my adult life, a new question I had not yet considered emerged: how have these genres of entertainment and self-expression not only found their way into our Western culture, but also have permeated, thrived, and become fixed in a variety of groups? I encountered these art forms as part of my culture, my family connection; but it is fascinating to see that many others without this intrinsic relation have found similar affections towards these media. What's more compelling is how we in the United States have adopted so many of the techniques and styles pioneered in these genres and used them for our own purposes, shaping them into what is often called ours. Questions of reciprocity, respect, and ownership spring to mind. When quick-trigger terms like appropriation and globalization are fresh in our minds I find it more pressing to feed this curiosity and walk that line to discover how I find myself in ample company in my infatuation with these genres. I endeavor to explore cultural exchange and discover causations and evolutions from one country to another. Even greater, it is a chance to dive deeper than ever before into subject matter that I crave to better understand.

## Life is Meant to Tell

*Aritza Vanessa Rivera*

*Major: Biochemistry and Spanish*

To begin with, the notion that life is a culmination of what you do is a moot point. It is debatable to determine the absolute, overarching goal of what life is supposed to be. Within life lie milestones, tragedies, celebrations, and much more than just a list of things done. Delving deeper into the human connection will lead us to the stories that are behind each smile, laugh, cry, yell, or surprise. Community is built on the principle of connection between individuals; connection is formed by the overlap in experiences. Through the telling of stories, people become intertwined and find little insights to a different perspective. What use is the mouth without having anything to say? In acknowledgment of this, I have started a blog, called Hidden Insights Towards Success, with the purpose of sharing my experiences primarily for my sister but to any others who may need a second opinion on similar encounters. My drive is focused towards displaying my stories for my sister to learn and grow from both my successes and my failures. I write about what it is like to live in the residence halls, how to approach professors, and about things that open my mind. The blog also functions as a self-reflection to recognize my purpose for continuing my education as a first-generation student and to remind me that I too need to grow by hearing other's stories. Words are powerful and stringing them together can produce stories that impact more than you imagine.

**To: Demi, From: Ghana**

*Demi Serrano*

*Major:*

For the Visual Arts category I have created a Photo Voice project based on my recent study abroad trip to Ghana, West Africa. Through a feminist lens, I have concocted a series of photographs, on a poster board with captions, that I took during the trip that represent the concepts of transnational solidarity, connection, healing, and liberation. Along with this visual piece, I have a five minute YouTube video that explains these concepts, experiences and impacts I received from the beautiful country of Ghana that I have built on from my own life.

These photos are further analyzed in concert with multicultural feminist literature from my Women's Studies courses such as: Wilma Mankiller, Leslie Marmon, Paula Gunn Allen, and Audre Lorde. This project was inspired by the work of my professor and mentor Dr. Caridad Souza who played a key role in the expansion of my intellectual horizons, world views, and who taught me the power of sharing narratives. With this form of storytelling, I hope to dismantle the single stories of marginalized people as well as Africa by the restoration of humanity just as Ghana did for me!

**Rites of Passage: Conscious Traveling in Ghana**

*Sametra Woods*

*Major: Political Science*

Rites of Passage: Conscious Traveling in Ghana combines poetry and pictures to express the significance of the literal and figurative passing/traveling from one state of consciousness to another. Consciousness traveling was possible through learning and serving in Ghana, West Africa. First and foremost, the theme of Rites of Passage stems from being immersed in eight different regions in Ghana. Each region, had a different culture, food, and way of life that overall expanded my horizons. The creative writing style I have selected to share this experience is a photo poem. A photo poem not only allows me to perform; it grants me the chance to combine an original poem inspired by the journey with images I captures while in Ghana to depict my physical traveling and passing between states of consciousness in each region. Moreover, the poem portion will shed light on each one of my experiences, or states of consciousness, while in Ghana from entry into the country through departure. The photographs, will serve as an elaboration component of the poem. Each photo gives another perspective and layers of consciousness when discussing my experience. Furthermore, being in Ghana, traveling through not only the regions but also the cultural surroundings, specifically provided me the Rite of Passage to consciously travel between states of consciousness. Through poetry and photos, delivered via forensic speech, others will be provided with the opportunity to consciously travel to Ghana.

## The Beneficial Beauty of Dance in Education and Social Justice.

*Mohammed J. York*

*Major: Dance*

Dance in itself has an edge. In this age of standardized testing, with a world where we see hardships back to back on the local news channel, the arts provide this safe haven where mistakes are treated as discoveries and expression is celebrated.

## A Labor of Love

*Tianna Zachariah*

*Major: Business Administration*

I define a labor of love as the work you must put towards knowing yourself, loving yourself, and ultimately fighting for yourself. I think at different points in our journey, we all take on this labor in different forms. It could be through the realization that we deserve better than how we've let others treat us. It could be through the grief and heartbreak of losing someone or something; realizing that we're still here and so we fight to find our meaning again. It could be something as simple as figuring out who you are and what you want your life to look like, because that's hard work as well. Finally, we could find ourselves in the midst of this labor by accident. Maybe life has turned out different than we expected, so now we must labor our way back to our truest self, our strongest self, our whole self. This piece is a way for me to share some of the discoveries I've made during my labor of love. Although it's been a short journey so far, it's one that I think needs to be shared so that others can either begin or continue their labor in a fuller and more powerful way. What motivated me to begin my labor of love was a necessity for change. I was in a dark place, and I didn't know how to get myself out (or even if I wanted to get out), so I did what I always do when I need to think and figure things out, I started writing. And once I started, the story I was writing was my story of becoming. Through this process I've become something greater than I was, and I've become someone I love. I think everyone deserves to feel that way about themselves, and I think this story will help them in their own story of becoming. I haven't yet decided if this is going to be in the form of a short story or a nonfiction piece.



## Investigating the Relationship between Depression, Choline, and P50 Sensory Gating

*Nicole Acheampong*

*Major: Human Development and Family Studies*

Research has shown that cognitive and behavioral impairments can be caused by maternal prenatal depression. Cortisol which is the hormone release when stressed, choline is released in response to cortisol level and can be transferred on to an infant through the placenta. In this study we measure cortisol levels in an infant's hair and nails shortly after they are born to see how much they obtained from their mothers. The study will include a depression survey, choline blood sample, cerebral inhibition (also known as P50 sensory gating) done on infants 1 month to 30 months. P50 sensory gating records the responses to audio clicks that will engage both excitatory and inhibitory cerebral mechanisms. An easier way to understand this, is that once our brain is familiar to a sound our brain's reaction diminishes, if cerebral inhibition is abnormal than the brain will have the same reaction each time. This study had 154 participants including the mother, father, and infant. The only requirements for the mothers were to be healthy and over the age of 18. Research questions that I will consider are, the relationship between maternal prenatal depressive symptoms and infant P50 sensory gating; relationship between maternal serum choline levels and infant P50 sensory gating; and maternal serum choline levels mediating the relationship between maternal prenatal depressive symptoms and infant P50 sensory gating. The study finds that prenatal depression can predict P50 sensory gating, as well as prenatal choline levels. However, in this study we also discover that depression and choline do not correlate.

## Do Higher Physical Activity Levels Produce Better Diet Quality in Adolescents?

*Anita Bancroft*

*Major: Food Science and Human Nutrition*

Consuming a well-balanced diet and engaging in regular physical activity (PA) are important factors in maintaining a healthy weight and preventing chronic illnesses. The relationship between dietary intake and PA have previously been studied in adults demonstrating that PA increased as dietary healthfulness increased. This project investigated whether the relationship between diet and activity seen in adults is the same in adolescents. Specifically, this study examines how adolescent moderate-to-vigorous physical activity (MVPA) relates to diet by utilizing 2015 - 2020 Dietary Guidelines for Americans (DGA), 2010 Healthy Eating Index (HEI), and 2008 Physical Activity Guidelines for Americans (PAG). Data were provided by 86 healthy adolescents from the Fort Collins area ranging from 14 - 21 years old. Adolescents wore an accelerometer tracking PA levels for one week and completed a self-reported dietary recall for two 24-hour periods. It was hypothesized that adolescents more engaged in MVPA would score higher on the HEI. According to the HEI, 8.1% of participants had a diet classified as "good", 45.3% had a diet that "needs improvement", and 46.5% had a "poor" diet. Only 16.3% of participants met the PAG recommendation of at least 60 minutes per day of mostly MVPA. Of the participants meeting the PAG, just 14.3% consumed a "good" diet. Contrary to the hypothesis, diet quality was not higher among those with increased activity levels. These data suggest interventions aimed to improve both healthful diets and increased PA among adolescents are warranted.

## Development of protocols for the molecular detection of helminths in California sea lions

*(Zalophus californianus)*

*Morgan Berner*

*Major: Microbiology and Zoology*

California sea lions (*Zalophus californianus*) serve as hosts for several parasitic helminths including acanthocephalans, cestodes, and trematodes. High prevalence of helminths in sea lions, stranding along the coast of California, has given rise to several diagnostic concerns including accurate identification. This study aims to develop new laboratory assays that can identify parasites present within California sea lions and improve marine mammal parasite diagnostics. To date there have been limited efforts focused on the development of protocols for helminth identification in sea lions using polymerase chain reaction (PCR). New diagnostic PCR assays can potentially determine the genus of helminths present in sea lion gastrointestinal tracts. We are currently working to optimize DNA extraction and PCR primer design. Protocols for amplification and sequencing of a portion of the cytochrome oxidase I (COXI) gene will be tested on helminth eggs isolated from 31 fecal samples collected from sea lions that originally stranded in various California counties, and spent time in rehabilitation at The Marine Mammal Center (Sausalito, CA).

## Combating Food Insecurity in Marginalized Communities

Raeven Clockston

Major: Nutrition and Food Science

Food insecurity is defined as the state of being without reliable access to a sufficient quantity of affordable, nutritious food. It's estimated that at the numbers of people experiencing food insecurity, and malnutrition have increased globally with increases in population. Though there have been several proposed methods of decreasing food insecurity, the focus of this discussion will be centered around programs that exist to combat food insecurity in Northern Colorado. The programs that will be discussed exist as a part of The Growing Project and La Familia in Fort Collins. Local statistics predict that 73% of Larimer County's food insecurity is found in Fort Collins. Additionally, 18.6% of Fort Collins population is living in poverty, meaning approximately 30,542 adults in Fort Collins fall under the poverty line. 75.2% of Colorado's adults do not consume the recommended servings of fruits and vegetables. This leaves an average of 123,709 people in Fort Collins with a jeopardized nutrition status. According to the City of Fort Collins, the 2018 population is estimated to be 170,100. The Growing Project is a community focused organization that's dedicated to growing and providing vegetables to those within Fort Collins experiencing food insecurity. They work with youth at risk, vulnerable community members and approximately 30 homeless individuals to provide nourishment, horticulture and cooking skills. La-Familia is a bilingual, multicultural service for the underserved and underrepresented population of Fort Collins with a focus to strengthen and stabilize children and families.

## Epigenetics in Archaea: characterization of the putative DNA methyltransferases via deletion strain generation in the model organism *Thermococcus kodakarensis*

Jacob Cox

Major: Biochemistry

Phenotypic expression is a function of genotype as well as epigenetic modifications of the genome. These modifications result in variation of gene expression through and collectively influence the compaction, accessibility, and transcriptional activity present at defined loci *in vivo*. DNA-methylations, the most common epigenetic mark, underlie histone deposition and chromatin architecture in Eukarya, and form the basis of many restriction systems employed in prokaryotes to limit viral infections and acquisition of foreign DNA. Most Archaea encode bona fide histone proteins that spontaneously bind, compact and influence transcription of the genome. Epigenetic modifications of the archaeal genome are likely to therefore influence all aspects of archaeal metabolism and physiology by potentially influencing archaeal-chromatin structure *in vivo*. The model archaeon, *Thermococcus kodakarensis*, a marine, hyperthermophilic planktonic species, encodes histone proteins and two putative DNA methyltransferases (TK1460 and TK1158), but little is known regarding the extent, positions, and regulation that underlies control of epigenetic modifications in Archaea. Whole genome SMRT-sequencing has defined two consensus motifs that are highly methylated in genomic DNA and we aim to determine what proteins are responsible for these modifications and to what extent these modifications influence viability and physiology.

## Uncovering New Endocytic Protein Machinery

*Lena Cuevas*

*Major: Biochemistry*

Clathrin-mediated endocytosis is essential to cellular survival. In endocytosis the plasma membrane, or skin of the cell, invaginates and internalizes into a small transporter called a vesicle. This vesicle contains hormones and nutrients necessary for survival, and is responsible for the reorganization of the plasma membrane. Understanding the regulation of the the 60 or so proteins involved is key to treating a plethora of diseases. Defects in endocytosis are linked to heart disease, which is the number one killer in America today. In the Di Pietro lab we are working to uncover brand new endocytic machinery and to better characterize proteins that are already known. In the past we have worked to understand the adaptor protein: Sla1. Now we have evidence to suggest that Sla1 creates a checkpoint that a vesicle must pass through before it is internalized by the cell. Currently we are working to characterize unknown proteins that may be players in the endocytic process. In order to further screen a long list of candidate proteins we developed strains of cells that lack each protein of interest. Then we used fluorescence microscopy to verify when a lack of each protein led to a defect in endocytosis. We hope that with our work researchers will better understand clathrin-mediated endocytosis and can develop new treatments for heart disease.

## The Effects of Dispositional Hope on Resilience and Positive Emotionality

*Arianna Delgadillo*

*Major: Psychology*

Previous research has supported the positive relation between resilience and positive emotionality. However, it remains unclear what mechanisms contribute to this relation. Dispositional hope, or the ability to remain hopeful about one's goals, is a construct that has shown to be positively related to resilience and positive emotionality. The current study explored the mediated and moderated effects of dispositional hope on resilience and positive emotionality. The sample consisted of 550 undergraduate students from a large state university in the Western United States (Mage = 19.2, 59.6% female, 82.4% White) participating in research for course credit. Participants completed a battery of tests which included the Resiliency Protective Factors Checklist, Dispositional Hope Scale, and the Positive and Negative Affect Schedule. Linear and multi-linear regression models were utilized to measure the main, controlled, and interaction effects of resilience and hope on positive emotionality. Results indicated that resilience was significantly positively related to dispositional hope ( $b=0.43$ , 95% CI 0.38 - 0.48); and positive emotionality ( $b=0.27$ , 95% CI 0.17 - 0.38). There was no significant relation between the interaction of resilience and hope on positive emotionality ( $b=0.00$ , 95% CI -0.01, +0.01). This study supports that dispositional hope partially mediates (i.e. explains) the relation between resilience and positive outcomes. However, the strength of the effect of resilience on positive emotionality does not depend on hope. Further research can explore additional positive psychology constructs to further understanding of resilience and the mechanisms that contribute to its demonstration.

## Examining the Effects of Mutations on an ALS-Associated Protein

*Mikaela Elder*

*Major: Biochemistry*

Protein aggregation is associated with numerous diseases, including ALS and Alzheimer's disease. Therefore, cells have developed extensive machinery designed to re-solubilize or degrade aggregation-prone proteins. I am interested in how a protein's amino acid sequence affects its aggregation and degradation. We are using the human protein hnRNPA2 as a model to examine this question. Mutations in hnRNPA2 have been linked to neurodegenerative diseases, such as ALS. Current work suggests that hnRNPA2 contains an aggregation-prone segment that plays a major role in the protein's behavior in these diseases. To better understand how amino acid sequence affects this aggregation-prone segment, we randomly mutated a segment of hnRNPA2 and screened mutants for their degradation and aggregation propensity. Most amino acids that increased aggregation propensity increased protein degradation, suggesting that the cell is recognizing and degrading aggregation-prone proteins. However, aromatic amino acids increased protein aggregation without increasing degradation propensity. This suggests that aromatic amino acids may have the unique ability to cause aggregation, without triggering recognition by the anti-aggregation machinery. To confirm this result, we sequentially inserted aromatic amino acids into the aggregation-prone segments of hnRNPA2 and analyzed the aggregation and degradation propensities of these mutants. As predicted, mutants with more aromatic amino acids showed increased aggregation, without increasing degradation. Future experiments will aim to better characterize the behavior of the hnRNPA2 protein, so we can potentially create an algorithm that helps predict the protein's behavior. These results will help researchers understand more about how hnRNPA2 functions and affects diseases like ALS.

## SMYD2 in Review: A Comprehensive Review of Current Literature

*Chiara Flores*

*Major: Chemistry and Biomedical Sciences*

SMYD2, a lysine methyltransferase, is part of the SMYD family of proteins. Abhorrent expression has been associated with a variety of disease state yet it's true biological function remains unknown. This review analyzes and compiles the published information surrounding SMYD2 in order to identify patterns in its activity and regulation allowing for a deeper understanding of its function and interactions. This review also highlights where further research is needed and proposes possible directions for that research. A thorough reading of SMYD2 literature was performed and categorized into SMYD2 structure/function, disease states, and inhibition topics. The compilation and categorization of the research surrounding SMYD2 demonstrates that its binding pocket is flexible, allowing for a diverse library of substrates, including both histone and non-histone targets. In conclusion, SMYD2 plays a key role in the progression of cells from the G<sub>0</sub>/G<sub>1</sub>-phase of the cell cycle to the S-phase through interactions with tumor suppressors including p53, RB1, PTEN, and ER $\alpha$ . In addition, SMYD2 may be integral in the DNA damage repair response. The overexpression of SMYD2 is exhibited in many disease states through misregulation of tumor suppressors and is associated with a poorer prognosis therefore, research regarding SMYD2 inhibition as a therapeutic route should be continued. Gaps that have yet to be fulfilled include the transcriptional regulation of SMYD2 as well as additional target substrates and their biological roles.

## Generation & Characterization of Cell Lines Resistant to Prion Infection

*Joseph Gallegos*  
*Major: Microbiology*

Prions are the causative agents for many transmissible spongiform encephalopathies. During disease, the normally expressed prion protein (PrPC), which is found throughout the body, misfolds to the infectious conformation (PrPSc). PrPSc is capable of self-propagation by converting PrPC to the infectious conformation via an unknown process. Prion diseases, like other neurodegenerative diseases, are invariably fatal, and there are no known therapeutics that can effectively delay disease pathogenesis. Cellular models have proven to be useful in studying prion conversion and propagation, as well as analyzing potential host factors that contribute to this propagation. Previous work in our lab analyzing resistance factors in genetically modified cells expressing the deer and elk PrPC has illuminated two genes of interest that are differentially expressed between susceptible and resistant cells (unpublished). The work within aims to determine whether these resistance factors are conserved after infection with different inoculum; or if there are distinct methods of resistance that are species dependent. To accomplish this, we employed rabbit kidney epithelial (RK-13) cells expressing the Syrian Hamster prion protein (SyrHamPrP), and through single cell cloning, generated cell lines susceptible and resistant to infection by a hamster adapted infectious prion called Hyper (HY). Contributing factors relating to resistance were then analyzed and compared to those previously identified in deer and elk cells. This work will help determine how cells modulate prion infection in response to different agents, and in doing so identify potential therapeutic targets for combatting the disease.

## Disease Does Discriminate

*Hana Gebru*  
*Major: Biology*

Disease doesn't discriminate. Truthfully, it does not, but the means of disease prevention and treatment do. Prostate cancer in men and breast cancer in women are among the 5 most common forms of cancer in the United States, both with an incidence rate of around 200,000 people per year. However, it is clear that not only the incidence rate, but the death rate for prostate cancer is significantly higher for Black men than in any other race. The disposition for the high incidence rates in Black male prostate cancer can be linked to systemic racism. Many Black men are set up to live in poor areas with unjust amounts of resources that would otherwise be able to prevent them from getting cancer and provide them with the means to treat it. As for breast cancer, Black women have the second highest incident rate, under white women, but have the highest death rate. The fact that Black women don't have the highest incident rate yet maintain the highest death rate provides real insight to the social issues such as, once more, systemic racism, that prevent these women from having the means to treat or expel their cancer.

## Effects of CD21 Against Prion Aggregate Accumulation in Mouse Neuroblastoma Cells

*Elizabeth Gordon*  
*Major: Microbiology*

Prions are infectious misfolded proteins that cause fatal neurodegeneration in mammals, including humans. Accumulation of these proteins leads to insoluble fibrillar deposits broadly known as amyloid plaques. These plaques lead to brain diseases such as Creutzfeldt-Jakob disease in humans or Scrapie in sheep. These infections generally have symptoms such as behavioral changes, cognitive deficits and impaired motor skills. In the immune system, CD21 is essential for proper B cell function and plays an important role as a co-receptor by reducing the threshold for B cell activation during antigen recognition. CD21 also promotes B cell receptor translocation into lipid rafts, which further enhances signal transduction. Recent studies show CD21 is involved in prion immunology by having a high affinity for the prion protein (PrP). However, when CD21 is eliminated from the cell, less PrP aggregates accumulate. Since CD21 has such a high affinity for PrP, it binds to the protein on the same cell and surrounding cells; consequently, leading to more misfolding. In this project, CD21 is tested as a possible competitive inhibitor against other infectious PrP (RML5) in mouse neuroblastoma cells (N2A) to reduce the aggregate accumulation. By using in vitro infection and western blot analysis, CD21 was shown to prevent prion concentration. Future experiments will include investigating the ability for CD21 and other co-receptors to attenuate prion pathogenicity and further amplification in an in vivo mouse model.

## Trends of People and Places

*Augusta Irechukwu*  
*Major: Applied Computing Technology*

Have you noticed the types of business change as you travel from place to place? I have wondered who/what defined the shape of a neighborhood. Was it the types of people who moved in, or was it the kinds of businesses in a neighborhood. My goal with this project is to test my hypothesis that the types of people in the neighborhood are what determine what types of business are in an area. From this, I would like to see what trends are related to these different places and what the social statistics of the people who inhabit them are. To complete this project, I collected demographical data in areas as well as accompanying information regarding the types of businesses present during the same time frame using census data. To visually represent and analyze the data, I will use the computer programs Python and Excel. I expect to see trends that exhibit changes in merchants that take place after an influx of a specific demographic. With this project I hope to demonstrate that neighborhoods are not created equally and as young adults approach decisions on where to live, they can use this information to make knowledgeable choices and understand their power to define an area.

## EtherRadio

*Casey Key*

*Major: Computer Science*

Soundcloud is an online music distribution platform, and has been the launchpad for many independent songwriters' careers. In the past 11 years, Soundcloud has failed to generate a profit. Instead of providing tools for their independent music artists' success, they became a subscription service. Soundcloud's paid subscription services remove ads and provide offline listening for a monthly fee, but the majority of users don't subscribe. Those free users suffer while Soundcloud continues to lose millions of dollars each year. My goal is to establish a competitive subscription-free music streaming service that promotes the success of independent music artists using blockchain technology to protect artists' copyright and pursue infringement of their works. I deployed the latest online monetization techniques to pay songwriters more than current online music services such as Soundcloud, Spotify, and Youtube. This will provide users the choice to listen for free in addition to giving independent songwriters the toolkit for success in the online music industry. As a result, my efforts will disrupt today's centralized music industry by providing independent songwriters exposure, legal services, and financial support. Ultimately, this will help independent artists to create music using the tools we provide. Artists can also receive advice from affluent members of the record industry. Hopefully this will afford a rewarding experience for investors to support independent songwriters.

## What is Mathematics?

*Anahi Leon-Duarte and Amanda Horn*

*Majors: Mathematics; Mathematics*

The goal of this project is to discover what people think mathematics is and try to come up with a way to understand mathematics beyond just thinking of it as an abstract concept. Also, to show how mathematics is interconnected with multiple subjects that are not normally associated with mathematics. The main method we used to find our data for our research was an anonymous survey. We did not want to limit ourselves to just undergraduate college students, but also high school students, adults, and graduate students. We asked them different questions about their education, experiences, and what they felt was a definition for mathematics. Based on the data we collected, we tried to see if there was a positive correlation between highest level of math taken versus level of sophistication of the definition of mathematics.

## Exploring the accumulation of Selenium and Arsenic in *Cannabis sativa* for phytoremediation

*Brandon McCarron and Elizabeth Hart*

*Majors: Horticulture Science; Biological Science*

Phytoremediation is a sustainable approach for removing toxic compounds from a soil using plants as a sink for removing the toxic compounds. Phytoremediation can be used as a clean-up tool for industry waste and polluted regions. *Cannabis sativa* is a relatively new study subject due to its recent legalization and possible medicinal values. The amount of uses *C. sativa* provides seems endless. Prior to this study, there is little documented experimentation with *C. sativa*'s ability to be a hyperaccumulator, or a plants ability to grow in a toxic metal soil and accumulate those metals in their tissues. This experiment is a pilot study exploring an extreme concentration of Selenium and Arsenic that cannabis is unable to survive in, during the seedling stage of its life. Comparatively *Brassica juncea*, *B. juncea*, has been shown to accumulate Selenium and Arsenic in high concentrations. This study is looking at the ability of accumulating the toxic elements in both species and assessing the possibility of *C. sativa* as a hyperaccumulator.

## Comparative Study Shows Shift in Scorpion Occupancy Away from Development

*Gabriella Moreno*

*Major: Fish, Wildlife, and Conservation Biology*

While scorpions are known inhabitants of dessert locales, their presence co-occupying human developments in those regions is undesirable. A recent study showed that scorpion occupancy was higher in areas closer to the newly built CSU Center in Todos Santos, BCS, Mexico and that scorpion detection increased as vegetation cover increased. Our goal was to replicate this study examining effects of disturbance on scorpion occupancy and evaluate differences. Our study took place between the CSU Center and an adjacent recreational trail. At seven set locations, each 50 meters apart, two transects perpendicular to either side of the trail were set up. Each transect held two to three 2 m x 2 m survey plots, each 10 meters apart. Three different covariates were analyzed within each plot; proportion of vegetation cover, vegetation type, and soil type. Plots were surveyed on three occasions at night using UV flashlights. Our data showed that probability of detection was higher with increased vegetation cover. However, unlike the previous study, our data indicated an increase in scorpion occupancy as distance from the CSU center increases. Disturbance and increased edge habitat from development seems to have become a normal part of their habitat over time, therefore scorpions now occupy areas further away from the CSU Center and recreation trail. Scorpions likely prefer cover for more protection and less exposure, explaining why detection increases with vegetation. This study further increases our knowledge of disturbance effects on occupancy.

## Expression of Non-Conducting State Kv2.1 in Dendritic Spines

*Bethany Norwood*  
*Major: Neuroscience*

Health issues, such as stroke-related incidents, disproportionately affects minorities' communities, specifically black ones. While 795,000 Americans suffer a stroke annually, death rates are higher among blacks. Strokes are most often caused by pre-existing conditions and/or incidents that result in a loss of blood flow to the brain. At the micro level, the pathways through which important neural membrane proteins are controlled are via voltage-gated potassium channels, or Kv2.1. These transmembrane proteins are seen in various cell types and serve several functions such as depolarization during action potentials. While voltage-gated potassium channels play a large role in membrane repolarization, non-conducting state Kv2.1 channels are integral for protein trafficking and insertion, further contributing to overall cellular function. Previous research deeply illustrates the role of Kv2.1 as cellular platforms for endocytosis and insertion of other Kv channels. In order to investigate the expression of Kv2.1 in dendrites of rat Hippocampal neurons, DNA plasmids were created to include the SYN promoter into GFP-Kv2.1-LoopBAD and GFP-Kv2.1-HA vectors and transfected into rat hippocampal neurons in vitro. The intensities of the fluorescently labeled Kv2.1 channels in dendritic spines were analyzed and compared to positive and negative controls for background labeling. Results will be used to assess malfunctions in voltage gated potassium channels as studies have confirmed the importance of non-conducting Kv2.1 in the exocytosis of neural proteins. A better understanding of the function of dendrites in this process could lead to insight on how mutations in non-conducting Kv2.1 channels lead to diseases, including strokes.

## The Reformation of the Endangered Species Act

*Roberto Ramos*  
*Major: Fish, Wildlife, and Conservation Biology*

The Endangered Species Act (ESA) has played a large role in organism and ecosystem conservation in the United States since its enactment in 1973. Designed to protect and recover endangered species and the ecosystems in which they live, the ESA has helped prevent substantial species loss in the United States for 45 years. Recently, land protected from mining, drilling, or other environmental degradation under the ESA has become of large economic interest due to the wealth of natural resources that these lands contain. Some government officials and ecologists have voiced opinions that the ESA in its current form is outdated. They claim that the policies surrounding endangered species protection have not kept up with the research and technological advances of the past four decades and that the ESA is preventing economic growth and state-led conservation efforts in some cases. Issues such as designation of threat level for specific species, pesticide approval by the Environmental Protection Agency, and the desire for development of infrastructure and gas drilling on protected lands could all be affected by proposed reformation of the ESA. Future plans include researching currently proposed changes to the ESA and how those changes might affect ecosystems in the United States in the near and distant future.

## Microbes Living Amongst Us

*Jordan Rose-Williams and Jessica Herrera*

*Major: Microbiology; Microbiology*

Our research will compare the efficiency of natural household cleaners and chemical household cleaners. We will demonstrate the efficiency of each cleaner by comparing plate counts of microorganisms before the area has been cleaned with the respected cleaner and after the area has been cleaned. Throughout our research, we will compare the difference in ingredients of each cleaner. Our test area will be a central countertop in a home kitchen and we will be utilizing disposable paper towels to clean the area. Most household cleansers claim to kill a high percentage of microorganisms that can live on surfaces throughout our homes. This is important because we come in to contact with these surfaces daily and most people rely on an efficient household cleaner to keep their environment free of harmful pathogens. It is often advertised that natural household cleaners are equally as efficient as chemical cleaners but are safer for humans because of the lack of harsh chemicals.

## Treating *Pseudomonas aeruginosa* Infections Using Innovative Enzymes Applied on a Nanofiber Composite Wound Dressing

*Vanessa Sanchez*

*Major: Microbiology*

*Pseudomonas aeruginosa* is a bacterium that commonly infects wounds in equine patients, resulting in lameness. Treatment options are limited since the bacterium is highly antibiotic resistant and produces a biofilm that in turn prolongs the healing process. This problem was approached by creating nanoparticles with novel lytic enzymes that have antimicrobial and antibiofilm properties and incorporating these into a nanofiber composite (NFC) wound dressing. The enzymes were created by cloning the endolysin gene from *P. aeruginosa* phage KZ144 combining it with the gene for SMAP-29, an antimicrobial peptide. These two pieces of DNA, when fused together, create Art-175. Through widely used procedures of cloning, transformation and expression, and enzyme purification, the lytic enzymes produced were tested for functionality. The purified enzymes will be placed inside a micellar nanoparticle and coated onto the NFC wound dressing. The coated dressing will then be tested against fluorescent bacterial strain *P. aeruginosa* PAO1 and the biofilm it produces. The expected results; successful reduction of *Pseudomonas aeruginosa* and the biofilm it produces where the NFC wound dressing is applied. This research is significant in the application of innovative antimicrobial and antibiofilm nanoparticles coated on a nanofiber composite (NFC) wound dressing. This creates an environment that reduces the healing time for horses and reduces complications, thus reducing the necessity for euthanasia or lameness that places horses in early retirement.

## Characterization and Utilization of a Novel Bacteriophage, T790

*Tyler Thomas-Fenderson*

*Major: Microbiology*

*Staphylococcus pseudintermedius*, the prevalent species in the *Staphylococcus intermedius* Group, is an opportunistic pathogen recognized as the leading cause of skin, ear, and post-operative bacterial infections in dogs and cats. Human infection, mainly acquired from dogs, has however only recently been reported. The first case of human infection by *S. pseudintermedius* was described in 2006 by Van Hoovels et al. causing endocarditis after the implantation of a cardioverter-defibrillator device (ICD). Since then, human infections have been reported sporadically, including surgical site infections, rhinosinusitis, and catheter associated bacteremia. The last published case of human *S. pseudintermedius* infection, the second case involving a methicillin-resistant strain, was recently reported in May of 2015. The patient had a history of close association with a companion dog, as well as farm cows. Knowledge of the pathogenesis of *S. pseudintermedius* remains limited. It is known that veterinary strains are able to produce numerous virulence factors, including  $\beta$ -hemolysin, clumping factor, coagulase, DNase, protein A, lipase, leukotoxin, exfoliative toxin, and enterotoxins. Furthermore, *S. pseudintermedius* methicillin-resistant strains have recently emerged as a major challenge, for veterinary dermatologists in particular, owing to their extensive multidrug resistance and their behavior as nosocomial pathogens.

## A Literature Review of Hemp Technology

*Mariah Wang*

*Major: Environmental Engineering*

Every 2 hour and 35 minutes, a civilian die in the United States because of fire incidents, according to the National Fire Protection Association. Among which many deaths are directly linked to the use of polyurethane foam in building structures. Polyurethane foam, also called spray foam, is known for its great insulation properties, while many do not recognize the fact that it can release high amount of heat and extremely toxic fume in cases of fire. One of the solutions to this fire hazard problem is hemp concrete - a carbon negative hemp-based pest resistant and fire-resistant material with high thermal resistance. Made from hemp, a group of plants in the genus *Cannabis* but with low THC concentrations, hempcrete has been now used in Europe for decades. As many studies have suggested, hempcrete demonstrates competent sound absorbing and thermal insulation features when compared to other materials such as fiberglass and carbon fiber. As more states moving to legalize industrial hemp farming and hemp being more locally available, it is expected that the cost of producing hemp-related products will go down; with Colorado leading the nation's hemp production, a billion-dollar industry is emerging. Some other application of hemp might be: CBD oil, hemp soap and lotion, hemp ethanol and hemp diesel, hemp plastics, etc.

## **The Feasibility of Lowering Opioid Overdoses in Colorado**

*Selam Werede Tewahade*

*Major: Health and Exercise Science*

Opioids are any substance that act on receptors in the brain to give the user a euphoric sensation. There are a range of opioids from prescription opioids like Oxycontin™ to illicit opioids like heroin. Like with any drug substance dependence disorders can occur. When dependence disorders occur with Opioids, it is referred to as Opioid Use Disorder. Opioid Use Disorder is another way to describe an opioid addiction. There are two primary reasons as to why health professionals are moving towards using “Opioid Use Disorder” as opposed to “Opioid Addiction”. Firstly, addiction of any sort is a mental disorder. Secondly, the term addiction has a social stigma attached to it in the United States of America. By having this stigma attached to the term “addiction”, it hinders a person suffering from addiction from seeking help. The stigma also hinders the ability of the public to back any public health measures to counteract addiction problems in the community. This report will use the term Opioid Use Disorder (OUD). Colorado has been experiencing a rise in the number of people suffering from opioid use disorder and the number of people dying from an opioid overdose for several years. Colorado needs to address this public health issue as it is not only costing people their lives but is costly to the state. The research outlined in this report attempts to offer up possible solutions to the state’s crisis by lowering opioid overdose rates and lowering the chances of more Colorado residents developing an Opioid Use Disorder.

## **What is Limiting the Growth of Northern Pike *Esox lucius* in College Lake?**

### **A Bioenergetics Approach**

*Michael William Miller and Erik Cristan*

*Major: Fish Wildlife and Conservation Biology; Fish Wildlife and Conservation Biology*

Once comprised of large individuals, Northern Pike *Esox lucius* populations in College Lake, Colorado have decreased in weight since their introduction in 1973. We hypothesize that either environmental factors, prey quality, and/or prey density is limiting the growth of this population. We used a bioenergetics model to diagnose the primary factors (e.g., temperature, prey quality, prey quantity) limiting Northern Pike. our findings suggest that Northern Pike are most limited by prey availability - possibly driven by high Northern Pike density and strong intraspecific competition.

# SERVICE LEARNING & LEADERSHIP



### K-Drama Night

*Jinjara Clanton, Jackie Callejo and Billy Poon*  
*Major: Communication Studies; Zoology; Zoology*

Korean Drama night, or K-drama night, was held every week during the 2017-18 school year on Friday nights at 7 pm at the Asian Pacific American Cultural Center. Students gathered to watch movies and two episodes of a Korean drama. To spread awareness about an opportunity on campus for students to connect through a common interest in popular Korean entertainment, K-drama night started by word of mouth and has spread among students through the same method. Students get information and updates on the next episodes and series through a group chat and those that frequent the Asian Pacific American Cultural Center are able to see weekly notifications on a white board. There are more involvement opportunities on campus for students to get engaged and participate in the community through social connections and common interests. K-drama night provided students with an opportunity to build community through a cultural activity and helped enriched their college experience by knowing that their interest in Korean entertainment is represented and present on campus.

### Social Justice Through the Arts

*Jame Fuerte*  
*Major: Dance*

In my community of Fort Collins, I know that there is large support for the arts. From the 1,500 musical instruments granted to Fort Collin's public schools by the Bohemian Foundation, to the \$18 Million funded by the same foundation for creative community organizations, there is no doubt that art matters here. However, with all of this progress, dance still remains a private and elitist art form in my community. Students are now being taught music education, but with little focus as to how art can create change. I founded Lives Unfolding, a nonprofit dance program, to teach students from varying economic backgrounds dance education while also providing students the tools to be able to envision, reflect and compose works of art for the purpose of revealing social issues facing our youth today. My curriculum is framed by the Colorado Department of Education's Dance Standards and integrates building upon the essential skills needed for the 21st century. I am deeply connected not only to my students, but to my community. Dance is a universal language that is inherently human. My program hopes to allow the children to be able to reflect and move through music in a way that allows them to speak about the injustices they face in their lives. This push to give children the voice, I believe, will create economic, political, and demographic changes in our systems to sharpen our focus on the growth of human potential.

## **Believe in Me: Empowering Youth**

*Eduardo Hernandez*

*Major: Social Work*

Low-income students across the nation are ruling out college at an early age. Being low-income can limit the amount of opportunities one has but can also have effects on one's academics and behavior. Low income youth engage in more risk behaviors during adolescence. Behavior is a form of communication for students to express that something is affecting their social-emotional health. The stress low income students experience is higher than their peers, making it difficult to learn. Schools sometimes do not have the resources to reach out to those who might need more support compared to their peers. Coming from a low-income background myself, I have experienced the importance and impact of having someone that believes in you. because we often have this assumption that we will never access to a good education. We need role models, who look like us and who share our identities to give us hope that we can break the poverty-education cycle. Believe in Me, is a sixty minute after school mentoring program, held at Leshar Middle School in Fort Collins. Our mission is to empower the youth by honoring their stories, respecting their identities, and fostering their passions. Growing up it was difficult to embrace my low-income identity. Through the support of mentors and teachers I was able to believe in myself and continue to pursue education. The purpose of "Believe in Me" is to provide support and teach skills that will give students the ability to believe in themselves and pursue their education.

## **Define Your Success**

*Deborah Ilangikwa*

*Major: International Studies*

What if the college can be accessible to everyone, no matter what where they come from or how much English, they can read or write? Currently, there are many immigrant students in the English Language Development program that do not get the chance to attend post-secondary education. Since I started my post-secondary education, I have been able to see the privilege that I hold as an immigrant student who is attending a four-year university straight out of high school. The reason why I want to have my presentation is that of my personal story. I was not offered an option to attend college after high school because I wasn't able to communicate well in English. My first year in my Key Class, I was able to do a lot of service at Fort Morgan High School with students who are in the same boats as me couple months ago. In my project, I am working to find better ways to support the students instead of using their lack of English as a way to stop them from getting an education that they deserve. I will be doing that, by sharing some work that is being done right now.

## Z Phi So Sweet, Finer Woman Like Me

*Ally Johnson*

*Major: Psychology*

In 1920 on the campus of Howard University, five strong women came together and founded Zeta Phi Beta Sorority, Inc. The principles they strongly stood behind were scholarship, service, sisterhood (formerly sisterly love), and finer womanhood. The sorority itself has been growing for the past 98 years and has done so with grace. With a strong emphasis on service and having over 850 chapters, the sorority has transformed so many communities around them. As a member of the Omicron Omicron chapter of Zeta Phi Beta Sorority, Inc., I have been able to learn new ways to serve my community. My goal is to see how other members of Zeta Phi Beta Sorority, Inc. have been impacted in their experiences a soror academically, in their community, and in their personal development. I will do this by conducting surveys to see what moments, activities, and experiences have been the most impactful and what they wished was offered by the sorority. I will also talk about how the members of the newly re-chartered Omicron Omicron chapter will serve the sororities philanthropies in the Fort Collins and Northern Colorado communities. As the president of the Omicron Omicron chapter, I hope to gain a new understanding of members love for the sorority and determine what will help retention in order to grow our chapter here at Colorado State University in a way that appeals to many.

## Zoo Internship Experience

*Arianna Leal*

*Major: Zoology*

I will be talking about my zookeeping internship at the Denver Zoo. I will be presenting what I learned from this internship and the different careers that work at the zoo such as, youth coordinators, zookeeper's, wildlife trainer, the wildlife ambassador program, nutritionist, people who run the nonprofit, volunteers, biologist who work on field projects around the world, and of course the veterinarians. The purpose of mentioning the careers is to show people that a zoo cannot survive without a team of passionate members fighting for one goal. I will also talk about what I did during my internship from cleaning enclosure, washing dishes, prepping meals for animals, creating enrichment, watch wildlife trainers practice with their animals, see how they handle the animals, interact with them, and how they meet their medical needs. The purpose of this is to show an example of how hard zookeeper work to in order to bring the best care to the animals. I will be talking about the importance of how zoos educate the public on species all over the world and the importance of to preserve endangered species and other conservation projects they construct. The purpose of mentioning this part is because this is the main goal zoos are fighting for. This internship opened a world of opportunity and has made me realize how passionate I am about wildlife. I myself eventually want to pursue a zoological career and join in the fight to preserve what wildlife we have left.

**Be Yourself and Own It; A week designed to defeat the perception of beauty and spotlight the uniqueness in being different and yourself**

*Dominica Manlove*

*Major: Health & Exercise Science*

Society's ideologies influence women of color and of mixed races to believe that they are not beautiful in their own skin if they do not fit certain criteria; persuading woman to change themselves in order to be beautiful. As a result, young, kinky and curly-haired girls grow up without self-love for their unique hair, and often damage it in attempts to straighten it. The focus for "Be Yourself and Own It" is to establish a curly hair campaign at CSU, a predominantly white campus. During this educational campaign we will unravel beauty and self-love for one week over the Spring Semester. I plan on connecting with cultural and women's support groups in the campus community to gain volunteers and spread the word. The week will be hosted from a Mon-Sat, each day highlighting self-care tips from hair care to skin and nutrition advice as well. The main event would consist of showcasing different hair and skin type journeys in a showcase. With curly haired demonstrations, experts, bloggers, activists and stylists, we'll dig into culture and understanding through workshops. The "Be Yourself and Own It" campaign will influence love for diversity throughout the community, it will also create a safe place where individuals are accepted for whom they are. It is important to encourage uniqueness and uplift one another instead of making beauty a battle. I plan to expand this week event to middle and high schools around the world for our youth to learn about themselves and their unique beautiful differences.

**Investigating the Professional Preparedness of Black Engineering Students**

*Janaye Matthews and Nicolette Peerman*

*Major: Biomedical Engineering and Mechanical Engineering; Civil Engineering*

The National Society of Black Engineers (NSBE) is the largest student-run organization in the world. Dedicated to the academic success, professional development, and community uplift of its members, the organization has served as a catalyst for social change, with an emphasis on engaging young students of color to pursue careers in STEM. However, NSBE students do not always have the career advancement they hope for due to a tendency to develop academic expertise without acquiring the necessary hands-on, technical skills that will enable them to be successful upon entering industry. This investigation examined the preparedness of engineering students' technical versus academic excellences by comparing the skill sets of current NSBE students to the requirements of professional members. Targeted surveys were given to NSBE members; one, geared towards professional members, gathered information on the skill set they seek in prospective employees and another to collegiate members regarding their classroom and hands-on expertise. We hypothesized that students would lack the technical skills needed to excel at an internship or entry-level job upon graduation. The pending results could be used to produce programming and resources within NSBE to ensure that its students are fully-equipped as they transition into industry settings. The gap between technical and academic trades is a prevalent topic of discussion within NSBE, and it's the foundation to address an additional layer of prejudice in the hiring process. Such a gap, when attributed to Black STEM populations, can entice employers to justify their reluctance to hire NSBE students.

## **Combating Campus Food Insecurity**

*Kiri Mitchell*

*Major: Nutrition and Food Science*

1 in 10 students at Colorado State University (CSU) have limited food access (food insecurity) and many more consume poor nutritional quality foods (nutrition insecurity). To address these issues, I initiated a program to provide students with free local produce as well as education on food preparation and on the produce sources. I designed the program to be part of a larger, global network of community refrigerators called the "FREEdge". FREEdge is the combination of "free" and "fridge" and aims to promote community building, combat food and nutritional insecurity, and reduce food waste. In May of 2017, I implemented CSU's first FREEdge in Aggie Village, an apartment complex for CSU students. I grew and harvested produce from garden plots in the CSU Horticulture Center and I have acquired donations from 6 local farms totaling to >500 lbs. of produce. To ensure students are aware of how to use their produce, I teach cooking classes with community partners and we demonstrate safe produce preparation to maintain nutritional quality. I oversee student volunteers who accompany me to local farms and food rescues and meet regularly to discuss food related issues on our campus. As another way to combat food insecurity, I have received funding for a Tower Garden, an aeroponic, vertical, growing system that can be used to grow foods indoors or outdoors and will incorporate the tower beginning in March 2018. Looking forward, my goals are to expand the FREEdge and raise awareness of the relationship among food systems, food security, community and the environment.

## **Queen Mother: Philosophies, Practices, & Contributions of Black Indigenous Matriarchs**

*Zelle Moore*

*Major: Social Work*

The release of blockbuster Hollywood movie Black Panther (2018) highlighted the diversity of social location and displacement of the black population around the world, representing the many issues in our global community as well as the beauty, values, and traditions of black people. In particular, the representation of women as a source of strength and knowledge on the front lines of organizing against oppression in the overall structure of the movie and the female characters like the Queen Mother. Queen mothers, although characterized incorrectly in Black Panther (they are typically the mother, grandmothers, aunts, sisters, or cousins of the chief/king and their wives), are integral members of African societies as sources of wisdom and advocacy for women's and children's issues. In this project, I will compare notes on the philosophies and practices of two Queen Mothers in Ghana-- one from a patrilineal chieftaincy and the other of matrilineal chieftaincy--to demonstrate the contributions black indigenous matriarchs in critiquing larger social institutions as well as providing solutions to various issues surrounding gender, women, and children. This analysis will use PhotoVoice, a research tool that emphasizes visual representation to cultivate the voices of the participating individuals and include them in the evaluation of the project. Moreover, by analyzing various secondary sources on their roles and power through tradition, I hope to assess further what queen mothers have shared as noteworthy theory and knowledge production in the greater Anglo-colonial supremacist relationship with black women and children's bodies.

## **Black Families: Secrecy, Social Codes and Sexual Abuse**

*Zelle Moore Jakya Bridges*  
*Majors: Social Work; Sociology*

Within the black community numerous social codes exist that implicitly cultivate a culture of silence. Black proverbs like “Snitches get stitches” and “What happens in this house, stays in house”, perpetuate patterns of secrecy surrounding sexual assault, which, in turn, contributes to a standard of neglecting to recognize or hold perpetrators accountable. This call to secrecy represents the tacit principles many black families maintain as they ignore what occurs behind closed doors. This project aims to analyze how the social construction of black family functionality enables sexual assault to persist in black households. Through an examination of secondary sources on family function and sexual assault within black families we aim to reveal structural implications that discuss why there are low rates of black survivors reporting sexual abuse committed by family members. We suggest that heteropatriarchy and misogynoir practices in black communities contribute to the silence surrounding black children and sexual assault often leaving minimal, if any, space for justice or healing.

## **Puppy Pals**

*Sabrina Pribyl and David Purcella*  
*Majors: Statistics; Health and Exercise Science*

We all experience different challenges as we grow up and try to learn in school. Those obstacles can manifest anywhere from physical and learning disabilities to how we are treated and everything in between. Each trial may deeply discourage us, potentially limiting our growth in the classroom and impacting how we view education during our formative years. As CSU students, our past personal experiences inspired us to find a way to empower those with disabilities by improving the learning environment through positive additions. Our program, Puppy Pals, takes grade school students with disabilities of the classroom and into the CSU environment and incorporates service animals to practice reading, writing, and speaking skills. The animals provide students with disabilities a non-judgmental and empowering support system. This then helps to decrease some of the intimidation students with disabilities often feel and gives them a positive educational experience. Hosting these learning sessions on a college campus invites these students to picture themselves there, encouraging them towards higher education. We've established partnerships with Canine Companions for Independence and local families to create weekly afterschool sessions with students and animals. Students who've participated in Puppy Pals have shown better confidence in social interactions, comfort with school subjects, and involvement in the classroom. We hope to expand Puppy Pals to more students and demonstrate further the positive impact animals and college campuses combined can have in the classroom.

## **The Mardale Jay Writing Center**

*Isabelle Rayburn*

*Major: Undeclared*

Writing has always been a passion of mine. I was taught to use writing as an agent of social change and my senior year I did that in ways that I would have never imagined. My senior year I started a Writing Center with 12 other seniors. We were determined to help other students broaden their writing skills and help them grow in their academics and that was exactly what we did. The Writing Center kept growing. We won a design pitch and got 10,000 dollars to design the space that we were using. We got funding to go to a Writing Center conference in Seattle and learned how to deal with different writing styles with other students this is where we learned that we were the first student led Writing Center in the country. Eventually, we had to pass the Writing Center work to the incoming seniors. We trained them and made sure that they knew how to do everything depending on what committee they worked on. Unfortunately, one of the founders passed away. He was like our big brother, so we named the Writing Center after him. Just recently with the help of some founders and current seniors, we secured a grant of \$150,000. In the beginning of this school year the year, we even one the mayor's award of diversity and inclusion. We were determined to use writing as an agent for social change and we did.

## **Puerto Rico as the 51st State**

*Gabriel Segarra*

*Major: Psychology*

Puerto Rico has been trying to obtain statehood for over 20 years, but many problems and obstacles get in the way. It is important for those who are unaware of the political situation around Puerto Rico's plea for statehood to be informed of these obstacles as well as all the possible outcomes if Puerto Rico does or does not become a state. This presentation will highlight all of this, debunk popular myths surrounding Puerto Rico, its relationship with the US, and its government's and people's actions. This is not meant to be a policy speech where I will be trying to convince others on why Puerto Rico should or shouldn't become a state, this presentation is meant only as a way of informing the American public (and all those who are registered voters) of the information they need in order to make an informed decision should the time ever come that they will need to voice their opinions about Puerto Rican statehood. As someone who was raised in Puerto Rico and lived in the U. S. A for the past 4 years, I have managed to get a solid grasp on the many differences, similarities, and political opinions of both cultures.

# SOCIAL SCIENCES & HUMANITIES


Duquesne Gallery

## A Deeper Look Into Incarceration: The War on Drug & Over Policing

64

### A Brief Background

- 1619: The first enslaved people were brought to Jamestown, Virginia
- 1865: slavery was abolished on December 18th, The Reconstruction Era also began and this is where the Jim Crow Era was created
- 1965: Jim Crow Laws were finally abolished



### What Roadblocks do Blacks Still Face


- There are many ways Blacks are held from advancing in today's world but one major way is through the prison system.
- The incarceration rates are at such drastic disproportionate levels.
- Two key factors that play a role in black incarceration rates are the war on drugs and over policing in poor black neighborhoods

### War On Drugs

- Declared in 1971 by President Nixon
- Wasn't until 1982 when President Regan announced the current war on drugs that cocaine became a "crisis" in poor black neighborhoods
- Since the 1980s federal penalties for crack were 100 times harsher than those of powder cocaine

### Crack Cocaine

- Crack cocaine is usually found in inner-city neighborhoods
- It's typically found there but we must look at how it got there
- "The CIA admitted in 1998 that guerilla armies actively in Nicaragua were smuggling illegal drugs into the United States, drugs that were making their way into the streets of black neighborhoods in the form of crack cocaine"




### Drug Cases in America

- In 2011 there were more blacks in prison or "under watch" of the justice than were enslaved in 1850 (there were 60 million)
- Blacks make up 12% of the nation's drug users
- They represent 34% of those arrested for drug offenses and 45% of those in state prisons
- 5 times as many whites are using drugs as blacks
- Blacks have a 20% greater chance of being sentenced than whites
- Blacks are being sent to prison for drug charges ten times the rate of whites

### Sentencing With Crack Cocaine

- As of 2002 80% of Americans sentenced under these laws have been black
- According to the National Institute on drug abuse, white students use heroin and crack cocaine 7 times the rate of black students and cocaine 8 times the rate of blacks



### Over Policing

- Over Policing in inner-city neighborhoods leads to more arrests
- Over Policing occurs when you look at the demographics of inner-city neighborhoods there are a lack of resources
- This is where crack cocaine is usually found so its only logic to place police where the "harsher" drugs is found

## Issue of Free Speech or Civil Discourse in Higher Education

*Victor Aquirre*

*Major: Communication Studies*

The topic around free speech on campuses has been framed in adversarial ways with some students and faculty asking for the need of trigger warnings, safe spaces, and the limit of topics that are considered by some as controversial and sometimes problematic. On the other hand, you have some individuals like students, administrators, and faculty members arguing that the purpose of institutions of higher education is to intellectually challenge its students. This research aims to find a solution that is centered around collaboration among the stakeholders directly involved in higher education. The strategies used to find information around this topic was to gather web-based resources; use scholarly, expert views, and popular magazine articles; and evaluate each article for credibility and relevancy to the topic. The findings showed that predominantly students in higher education who hold historically marginalized identities are the ones asking for the limitation of speech. While most faculty members in higher education agree in prohibiting speech that centers around racism, xenophobia, and all other forms of identity-based hate speech, they are at odds with the need to intellectually challenge their students and expose them to an array of diverse thoughts. From the research, I have concluded that the best solution is to inform students at time of applying they will encounter challenging, differing, and at times problematic ideas and topics. Moreover, administrators would be encouraged to ask faculty to use warnings for triggering topics, this does not equate to an excusal of the student from the class room. Lastly, administrators should provide faculty and students with the skills to partake in civil discourse.

## The Impact of the Multicultural Greek Council (MGC) Among First-Generation Students

*Kalyn Bonn, Annie Ngo and Adrienne Shabandarian*

*Majors: Human Development & Family Studies; Human Development & Family Studies;  
Human Development & Family Studies*

The Multicultural Greek Council (MGC) at Colorado State University (CSU), consists of 10 recognized organizations, 6 sororities and 4 fraternities. All organizations have a set of values based on multiculturalism that is unique to the needs of the students affiliated with each organization. Each organization was founded on the need for different spaces for marginalized and misrepresented populations on predominately white institutions (PWIs) across the country. The MGC at CSU, “strives to promote positive multicultural inter-fraternal relations and positive awareness on campus and within [their] surrounding communities”. The process of becoming a member of MGC varies across different organizations dependent on the values, mission and any philanthropic causes. Participation in MGC manifests the socioemotional development within an individual through providing leadership opportunities. It also encourages interpersonal relationships that is particularly influenced by the cultural backgrounds of the organization that it promotes. The purpose of this study is to analyze if membership within a MGC organization results in a statistically significant impact on first-generation college students’ academic, socioemotional development and retention compared to their non-member counterparts. In this study we will sample 100 CSU students, 50 students in MGC and 50 students who are not affiliated. From the surveys collected “like students” affiliated and not affiliated will be compared. An online anonymous 20-item survey will be completed by each participant that will inquire about their experience as either an MGC or unaffiliated first-generation student.

## **Racial Health Disparities: Assessing Measures of Stress**

*Daiszha Cooley*

*Major: Neuroscience and Psychology*

People do not choose their race, yet race influences their ability to navigate society and access resources. Life expectancy and expected years of life free of activity limitations caused by chronic conditions is lower for Blacks than Whites. Black/African Americans are also more likely to die from coronary heart disease and stroke than their White counterparts. Unfortunately, this is not an all-inclusive list of racial health disparities faced by Black/African Americans. Researchers across multiple disciplines are working to understand the factors that contribute to the existence of racial health disparities. Stress is among the list of considered factors. Although all people experience stress throughout life, racism and racial discrimination are stressful experiences that are unique to people of color. The present project will review literature to examine the different stress measures that are used in research to understand the relationship between stress and health. This information will be used to critique current methods in racism-related stress research and propose directions for future research.

## **Black Mass Incarceration in America**

*Jhasmyne Cooper-Moore*

*Major: Human Development & Family Studies*

The term mass incarceration was coined in the 1970's by President Richard Nixon to simply describe the substantial increase in the number of incarcerated people in United States' prisons. With my research, I was more specifically interested in taking a look at Mass incarceration with the lens of how racial disparities have and continue to contribute to the consumption of black bodies in the prison system. Interestingly in 2002, African Americans constituted more than 80% of the people sentenced under the federal crack cocaine laws and served substantially more time in prison for drug offenses than did whites despite the fact that more than 2/3 of crack cocaine users in the U.S. are white or Hispanic. As documented in 2014, African Americans constituted 2.3 million, otherwise 34%, of the total 6.8 million correctional populations, and continues to rise. My goal was to analyze Black incarceration in America through multiple lenses because there are several different factors that are relevant when addressing this topic specifically. I first dissected the historical context of slavery and how that influenced the operations of the modern-day prison system as a means of continuing the perpetual slave system. Secondly, I looked at trends over time for population changes and specifically increases of black people incarcerated in the prison system. I then analyzed the privatization of prisons and their role in the operations of prisons, as well as their impact on all those involved. Finally, I compared differences in demographics of black incarcerated populations focused on gender and non-gender conforming identities.

## **Mainstream Media Reflections of Horizontal Oppression within Black Popular Culture**

*Aleena Crockett*

*Intended Major: Journalism and Media Communications*

It is often argued that media is just a reflection of reality, however, reality for Black people in America has been constructed by a larger system of oppression and has become normalized over time. Therefore, my research analyzed mainstream media and demonstrated how horizontal oppression affects both Black men and women. To that effect, I deconstructed the messages encoded within two different music videos to critique how ideology functions in each. With the music video "Loyal" by Chris Brown, I pulled examples of messages that are often fed to women as well as messages from Travis Scot's, "Butterfly Effect", that exemplify ideologies commonly communicated to men. Both videos will serve a separate purpose in revealing how the messages are shared with Black men versus Black women, reflecting on how these messages have come to be. This will demonstrate how the differences in the messages being portrayed to the two audiences are detrimental to their communities. It is important to note that while these songs also listened to in non-black communities, the history of Black media representation is rooted in white supremacy and influences the way ideas are portrayed to their audiences. My hope is to stimulate thought and conversations between people in historically marginalized populations across America to think critically about the media they consume and how it influences the ways they think about themselves and other marginalized populations.

## **Peer-Led Social Support Group and Stress Among Students of Color at a PWI:**

### **A Single Single-Subject Design**

*Beatriz Esparza*

*Major: Social Work and Ethnic Studies*

At U.S. college campuses, the impact of stress on students is concerning. Despite growing research regarding stress on students' research concerning students of color (SOCs) falls short. More SOCs are enrolling in college, slowly closing the enrollment gap between their white peers. However, the gap in graduation rates remains alarming. Imagine if students of color were supported by their colleges once enrolled. This study explored the effects of a peer-led support group on stress-levels among SOCs at a predominately white institution. Two participants within the same peer-led support group were observed using the convenience sampling procedure. Both participants attended Colorado State University and were comparable in age, socioeconomic background and identified as students of color. A single-subject design (A-B) was used with a 5-day baseline period and a 7-day intervention period. The baseline period consisted of verbal consent and daily rating on the Patient Health Questionnaire for Depression and Anxiety (PHQ-4) assessment. The intervention phase consisted of daily participation in a support group for 30-45 minutes, and daily ratings on the PHQ-4. During the baseline period, patient 1 presented an average PHQ-4 score of 5.4 which decreased to 2.28 during intervention. Patient 2 presented an average PHQ-4 score of 5.6 during baseline, and an average of 3.29 during intervention. The results suggest that participation in a peer-led support group may buffer the stress college students are exposed to daily, and may improve the adverse effects of stress, such as anxiety or depression.

## The Role of Emotions within the Undocumented Student Experience in Higher Education

*Lorena Fuentes Ibañez*

*Major: Ethnic Studies and Sociology*

My research topic will be exploring undocumented students in higher education and how these students navigate themselves within their undocumented status. This research project particularly focuses on emotion and how that may or may not show up in the lives of these students. This desire to further explore this was influenced by *Emotion in Feminist Epistemology*, written by Dr. Alison M. Jaggar. The reason this is something urgent to know and understand is because our roles as perhaps allies, educators, supporters, and friends, may be missing a key factor in supporting our undocumented friends and students- identifying emotion. As an undocumented student myself, I grew up understanding that your status was something to never disclose and to emotionally disconnect with this particular struggle for your own institutional survival. The research methods in this project are informed by the book, *Decolonizing Methodologies: Research and Indigenous Peoples* written by Linda Smith. Smith writes about a de-colonial approach to research from the Maori people of New Zealand; this methodology challenges what many of us may have learned about research in our educational fields. The methodology informed from the Maori people includes: Mahaki (humility), Titiro, whakarongo, korero (speak, listen, and then maybe speak), Whanaungatanga (relationships), and Mana (respect, dignity, and power). The results of this research found evidence of disassociation of emotions specifically, in regards, to one's undocumented status. This research is urgent because we can begin reflecting on how we can revolutionize our support and consider something our Western culture doesn't always value- emotion.

## How Adolescents are Affected by Social Media

*Olga Gandarilla*

*Major: Human Development and Family Studies, Journalism*

Self-esteem reflects a person's overall judgement and emotional evaluation of their own worth. Therefore, it is crucial for today's teenagers to develop a healthy personality so that they can strive for mastery, know what they want, and grow up to become self-efficient human beings who will contribute to their societies in great ways. Nowadays, adolescents' lives are ruled by social media and research on this issue is not given enough attention or taken for granted, however, this is a topic that should be studied more frequently for more accurate results since social media is constantly innovating itself every day. The purpose of this research was to analyze the effects that social media; i.e. Facebook, Instagram, and Snapchat had on today's adolescents' self-esteem; as well as to emphasize the importance of an individual maturing with a high self-esteem. In order to address the research problem, quantitative data and statistics from publicly available sources were analyzed as well as qualitative data from peer-reviewed articles on self-esteem, personality, and social media. The anticipated outcome of this research is to provide significant information regarding how social media is affecting adolescents' personalities, identities, and overall emotional health. The findings may be useful in avoiding negative impacts on their self-esteem and helping many adolescents cope with the emotional problems social media might be creating in their lives.

## Different Pronunciation Difficulties for Chinese and English Native Speakers in the Field of German and Japanese Acquisition and its Application in Teaching Activities

*Peijie Gao and Ke Liao*

*Major: Languages, Literatures and Cultures; English*

With the intensification of globalization, there is more and more demand for direct communication among English, Chinese, Japanese and German. The United States, China, Japan, and Germany, as Top four economies of the world, have established an advanced language training system during a period of close economic cooperation. However, the absence of some phonemes has prevented its speakers from communicating understandably and efficiently. This research will thus focus on locating the pronunciation difficulties of Chinese and English native speakers who are at the early stage of Japanese and German learning, which could be not only helpful in measuring their progress but also be enlightening for adjusting of teaching methods in future pedagogical practice. Throughout the process, I'll first lay the foundation of my research by citing interviews with American and Chinese professors in the German and Japanese department. Afterward, I'll give the data I've collected by doing a questionnaire with German and Japanese language learners. Finally, I'll use related academic essays to make my research more authentic. By conducting this research, I've found that the reason why some phonemes are difficult for a specific group of students is that that the influence of their native language. Through this research, it could be useful in navigating students about how they diagnose their own pronunciation difficulties as well as examining instructors teaching activity.

## EMDR and Managing PTSD

*Jess Gomez*

*Major: Psychology*

Eye movement desensitization and reprocessing (EMDR), an eight-phase therapy incorporating bilateral eye movements, is an alternative therapy often utilized in the treatment of PTSD, but its untraditional nature has resulted in hesitation of endorsement by many psychologists. While research suggests that the method is successful, the exact mechanism has yet to be determined and is divided between three hypotheses; REM Sleep Theory, Working Memory Theory, and the Interhemispheric Communication Model. My goal was to log information, results and testimonials pertaining to the possible mechanisms of EMDR in order to determine which had the most supporting evidence. I kept a journal of sources, including quotes and paraphrases of the key points of each article, as well as an evaluation of each source and author(s). I then compiled my findings into a class paper that allowed me to formulate a data-informed opinion. Based on my research, I found the Working Memory Theory to be the most plausible of the three hypotheses. This theory states that performing two mentally taxing tasks, i.e. making bilateral eye movements while recalling a traumatic memory, allows the disturbing memory to become less vivid while the individual processes it because their mental attention is being divided. EMDR reduces the effect traumatic memories have on an individual, so if triggered by an external source, coping is more manageable. For people suffering with PTSD, normalcy seems impossible, but with EMDR, finding peace in one's own mind in order to regain control suddenly seems promising and explainable.

While (♀<♂,){♀++;}

*Sofia Gonzalez Jimenez and Keabeth Gonzalez*

*Majors: Undeclared; Computer Engineering*

(the while loop represents that while women are not equally represented as men, we would like to increase women)

Computer science as whole has established itself as a male dominated field. As women continue to dismiss societal norms around S.T.E.M. fields, computer science unfortunately continues to represent a consistent trend of female scarcity. The purpose of this project stands to evaluate the lack of exposure and representation of women in computer science that contributes to overall low percentages of women and even smaller percentages of women of color. Our combined efforts will work to collect data through surveys and interviews among female undergraduate and graduate students. With this, we hope to determine the primary factors that contribute to the ideology that suggests computer science is male work. Moving forward, we strive to reinforce the growth of opportunities for women in technology and hope to expand the female interest of computer science.

Sor Juana Ines De La Cruz

*Andrea Hernandez*

*Major: Communications and Spanish*

As we continue to build a progressive society, it is important to remember those who came before us and allowed for breakthroughs within their time. This paper will explore the importance of Sor Juana Ines De La Cruz, a nun born in San Miguel Nepantla. She was formerly known as Juana Ines Ramirez, was a famous poet and social activist during the seventeenth century. It is no secret that women have been deemed inferior to our male counterparts for the larger span of time. In the seventeenth century, the church was the most powerful institution. Everyone lived to follow the catholic religion, bible, and God as closely as possible. There were only three specific places for women to spend their lives in the seventeenth century: the home, a convent or an asylum. Although Sor Juana refused to accommodate to societal standards for women, she found that the only option for her to be allowed to continue her education and skillful writing was to devote herself to God, more specifically, a convent. In the convent is where she spent most of her life and where she made the most impact. It was taboo for a nun to be as knowledgeable and as rebellious as she was. Her marvelous work, such as Respuesta a Sor Filotea de la Cruz, written in response to criticism by the bishop about her devoting time to her studies; and significance in the social and political aspects of Mexico City came to be recognized in Spain. This made her a force to be reckoned with, Sor Juana Ines De La Cruz came to be known as the first feminist the Americas had seen.

## **Intersectionality and Experience within CSU's Diversity Offices: Student and Staff Perceptions of Programs and Services**

*Val Hiraki*

*Major: Health and Exercise Science*

The continued push for visibility and acceptance of marginalized identities has been an integral part of the development of societies across the world. Intersectionality describes the overlapping of peoples' various identities and how they experience oppression or discrimination through them. This research aims to investigate the degree of intersectionality and learning across identities specifically within Colorado State University's Student Diversity offices. Student and staff perception of the programs and services provided to them through these offices will also be addressed. Data was gathered via a Google Forms survey sent out through the diversity offices' email lists as well as through personal distribution and collection of hard copies of the survey. Although more data is required for further analysis, current key results indicate that while the majority of people do feel comfortable entering offices that they do not identify with, only a minor percentage of participants actually tend to visit the offices that do not align with their identities. Current data also signifies that the majority of survey participants desire to see more collaboration between diversity offices in various forms. In order to progress this research further, surveys should be distributed to a broader population and more data should be collected and analyzed. Programming developed by the diversity offices with the intention of educating across identities and familiarizing groups with each other can also be implemented at CSU. Findings may then be utilized to help increase collaboration between identities and improve intersectionality in larger institutions outside of the university environment.

## **The Three-Pronged B.E.A.S.T: The Study of Mass Shootings as a Unique American Issue**

*Jayla Hodge*

*Major: Journalism*

America is currently experiencing an epidemic like no other developed country or nation in the world: Mass shootings. The United States has more mass shootings than any other country currently, and there are sad signs of this record increasing. My study, B.E.A.S.T: Bipartisan Existential Accessibility Theory, will explain my developing theory around the three leading factors that are leading to mass shootings in America. The three correlating prongs are societal influences, mental health, and accessibility. This specific combination is the causation of study behind mass shootings. It will also explore why this issue is so uniquely specific to America. My presentation will encompass the beginning research and ground work of the B.E.A.S.T and also how I established the three leading components as well as what they generally embody. My presentation will help change the discourse around mass shootings from being addressed as gun or mental health issues, to a less polarizing term like an American issue. This language incorporates all facets of the issue and will help move the public's focus away from just one specific apparatuses. Hopefully this study will eventually help identify solutions in the future, in terms of which political policies to address and specific changes to be made that will combat the rising mass shooting trend.

## Exploring Identity Intersections Among Faculty at Colorado State University

*Rahma Jama*

*Major: Psychology*

To be considered a diverse and inclusive institution means to include a wide range of variation in the ethnic, racial, gender, and socioeconomic identities among faculty on campus. This means to enhance the curriculum, areas of faculty research, and to create new innovative and intuitive approaches to the various fields of study at the institution. The purpose of this research is to explore the intersectional identities amongst the faculty represented among fields of study at Colorado State University. The intersections that will be evaluated will be race, class, as well as gender. This research holds significant value in providing insight on the importance of recruiting and retaining a diverse faculty. This research was conducted primarily by evaluating what researchers at other institutions have found successful in implementing strategic policies and procedures. The research that was evaluated was specific recruitment and retention policies surrounding diverse faculty among class, race, and gender. Current research shows that when students feel their identities are represented by the professors in their field of study, they are susceptible to achieving higher caliber of performance. A longitudinal study was created to further research how current implementations surrounding diversity affected transfer of training, job satisfaction/engagement, as well as motivation among diverse faculty across three varied areas of study. The suggestions in this guide are intended to result in an increase in the heterogeneity on campus with specific regard to race, class, and gender.

## Free Speech

*Devin Jones*

*Major: Communication Studies*

Free Speech- a weapon used to fight against the oppression of African Americans. People of color have been subjected to violence through police brutality at a very depressing level. Neighborhoods have been ransacked by whites. Politicians have destroyed black communities and the image of black males and most importantly black fathers. Being a black male, it feels as though a glass ceiling has been placed above me, making the only path to success seem as though it is through athletics.

## We are Cyborgs

*Devin Jones*

*Major: Communication Studies*

The manifestation of technology is greatly restricting the human mind. The mass increase of virtual space is greatly affecting aspects of real life. Aaron Hess argues that we are rapidly approaching the final extension of man, but I counter that argument by saying that there are many more steps to go before the final extension of man is reached. Technology is rapidly evolving as inventors get closer to achieving their ideal image of the future. Flying cars are soon to pollute the sky, but as that is in the process of happening our minds are still having difficulties adapting to the overload of stress technology puts on the brain. We strain our eyes looking at little screens. As fans for social media likes we focus too much on false realities, so much that we tend to allow ourselves to be engulfed in them, blinding us from what life truly has to offer.

## Sustainability in Indigenous Communities: Maasai Pastoralists

*Zion Jones*

*Major: Ecosystem Science and Sustainability*

In today's age, we have entered what scientists call the Anthropocene. This means that human activity influences many issues relating to the Earth, such as climate and the environment. Since human use of natural resources is informed by needs, current uses, and intended long term use of those resources, it is imperative to examine sustainability within the context of local culture, economy, ecology and traditional ecological knowledge. This research aims to develop the concept of sustainability as expressed by Maasai pastoralists of Simanjiro District, Tanzania, and to examine the dynamics of communities regarding traditionally-defined sustainable practices and community-based natural resource management. Community members play vital roles in the success and sustainability of pastoralism, which dictates the primary land use (and natural resource use in general) in Simanjiro and other Tanzanian drylands. Semi-formal interviews were conducted with pastoralist communities across the Simanjiro region. Small gender structured groups were used to investigate socio-cultural aspects of sustainability, and how these local definitions of sustainability inform land use and decision-making by communities and individuals. Maasai pastoralists conceptualization of sustainability is largely related to basic human needs and expresses a need to sustain resources that support livelihoods. Gender roles play a large part in conceptualization, management, and implementation of sustainable practices. A report of this research will be sent back to the communities, which can be used in whichever ways the communities find appropriate.

## The Keys for Unlocking the Complexity of Human Trafficking

*Athena Koss*

*Major: Interdisciplinary Liberal Arts*

Modern day slavery is a major issue within our world, one that many don't know exists. Investigation into human trafficking is key to understanding why and how it occurs. The purpose of this project is to examine human trafficking through the Marxist and feminist international relations theories. Beginning with the beliefs of Marxist theorists and how they view international relations, the theory is used to elucidate the driving forces of human trafficking and its operations. Next, views of feminist theorists are examined and explained to determine how human trafficking disproportionately affects female victims of modern day slavery. Finally, the two theories are compared looking at how the views and backgrounds of both the Marxist theory and feminist theory shape further interpretations of modern day slavery. The Marxist theory is an important examination tool because many are unaware of the extreme market supply and demand for slavery in the world. Because a majority of humans that are trafficked are women, it's also extremely important to acknowledge the role that women have in human trafficking, specifically within the sex trafficking industry. Being able to comprehend the problem of human trafficking is the first step to recognizing how we as individuals and as a society can help victims of modern day slavery. Going forward, expanding on this research to further understand human trafficking will be able to help individuals, nonprofit organizations, and governments know how to better eradicate it.

## Reforming Refugee Policy

*Diego Lopez-Duran*

*Major: Economics*

The Refugee crisis is a world-wide phenomenon. The world is seeing more and more people being displaced due to war, poverty, and corruption, or a mix of the three. One can find flocks of people migrating from Latin America, Asia, the Middle East, and Africa. The refugee crisis is a long-term issue with implications that could affect us fifty years into the future. Refugee policy is not to be taken lightly and should be heavily re-evaluated by current and forthcoming policy-makers and constituents. Developed countries such as the United States and a handful of European countries are not taking enough action when it comes to refugee policies and how to settle large groups of displaced people. There are many common beliefs and misconceptions about refugees including ideas that most of them are terrorists and dangerous or that they do not contribute to the economy. However, research shows that these ideas have little or no evidence to back them up. The research is overwhelming, refugees, like other immigrants, would contribute greatly to the welfare and success of the United States. It is time to reform refugee policy.

## Unrealistic Standards Don't Measure Up

*Whitney Marsh*

*Major: Political Science*

Today's society is built on a social construct that has continuously gained momentum and adapted to what the current beauty trend is, the current idea of perfection. Media plays a key role in the development of eating disorders and body dysmorphia, in 2016, scientist reported that there was a direct link between social media and body image issues. In fact, 94% of adolescence use social media platforms such as Instagram, Snapchat, and Facebook on their mobile device daily, almost all will have negative thoughts about their body due to the images they see. The purpose of this presentation is to show how the different body types should be celebrated and embraced. In order to achieve this purpose, graphs will be used to compare actual body measurements and shapes of women in the US to depict the common body types against the images of perfection portrayed in media. This will help make people aware of the reality of physical uniqueness so that people may accept themselves versus attempt to adhere to unrealistic standards. To help combat this societal issue, countries such as France have set up body weight standards for all models and require that all altered photos be labeled to discourage eating disorders and body dysmorphia. Changes such as these will have such a beneficial impact on the youth of day that beauty standards will not play such a vital role in society later.

## The Flint Water Crisis and its Racial Ignorance

*Isaiah Martin*

*Major: Political Science & Ethnic Studies*

Most Americans have the privilege of not worrying about obtaining clean drinking water, in which such concerns seem to be a reality only understood in foreign lands. However, as we had seen in Flint, Michigan some of those who are in the United States are not able to get clean water to perform necessary functions like showering and cleaning. As well as, are faced with the inability to survive by not having clean drinking water. When the Flint, Michigan water crisis had started in 2014 people had sent multiple donations of water, money and other necessities. However, while this crisis was occurring the main view of the disaster was more towards a political and economic view. The true aspect that needed to be realized and evaluated within this crisis is race and how big a role it had played. The mission of this work is to prove with different pieces of evidence how the flint water crisis could be shown in deviation from the economic and political aspects portrayed in the media. This shall result in a critical analysis through a race relations lens between the citizens of Flint and the government, revealing the true reasons that the water crisis had occurred. In order to successfully complete this objective this work will draw upon work of different sociologist and race theorists to justify the reasons within this document.

## Men, Violence, and the Culture of Manhood

*Michelle Mendoza*  
*Major: Animal Sciences*

The United States, for all its appeal as a nation safe from the dangers of war on its home soil is unfortunately also cursed with a disturbing phenomenon. In the eighteen years since the Columbine High School Massacre, there has been no shortage of mass shootings in our schools, public spaces, and businesses. Stranger still is that there has not been a single woman identified to be the perpetrator in any of these instances they were in fact committed by men. In fact, looking at the statistics across the board, in cases of murder, domestic violence, assault, and child sexual abuse, men account for more than 90% of the incarcerated demographic. In spite of this, men remain in the highest paying positions of industries across our economy, often while defending the patriarchal views that have lent a hand to the stigma of seeking help with one's issues in an attempt to protect the ideals of manhood. This project is intended to be a tentative foray into the principles of sociology and economics. The research and results presented will be focused on investigating the currently held beliefs of a group of men, as well as the cultural influences that have served to shape those perceptions. Following a series of interview questions, each participant will be presented with the current statistics surrounding violence in this country, its targeted demographics, and how this new information relates to the definition of manhood their answers provided.

## **For the People, Not By the People: Barriers to Political Careers for Minority Students**

*Kassayndra Meyer*  
*Major:*

Studies show that an increase in the procurement of higher education correlates with heightened democracy. In an ideal situation, growth in the attainment of bachelors and graduate degrees by minority students should lead to a more accurate reflection of underrepresented populations in political leadership positions. However, the United States' political system remains mostly closed to minority access. The purpose of this project is to examine the differences minority students face at the college level that prevents them from obtaining roles in political leadership at the same rate as non-minorities. This project will explore the structural, situational and social barriers in the education system that minority students must overcome to achieve the opportunity to enter local, state and national governments.

First, I will address structural challenges such as on college major choices and lack of access to professional mentors. Then, I will examine the situational barriers such as unpaid internships and limited experience in political participation. Finally, I will consider social hurdles including the influence of assimilation, stereotypes and discrimination. This study draws upon peer-reviewed articles from political science students and faculty at several American universities as wells as data from United States Census Bureau. I will also utilize newspaper articles concerning specific barriers. The acknowledgment of these challenges can determine a stronger direction for proactive measures. Currently, the percentage of minority identifying political leaders has stagnated since 2007. Moving forward, I hope to see an increase in institutional resources that foster political leadership in minority students.

## **Social Programs and Welfare in the US; Past, Present, and Future**

*Ikra Mohamed*

Major:

Income inequality has become the dominant topic of contemporary economic discussion. Advances in technology and a relatively stable global political climate have created some of the most profitable years for private business ever recorded, yet the level of disparity between the richest and the poorest is still growing. As developed economies transition from manufacturing based models to more service based models, and as automation continues to put many Americans in precarious employment positions, the need for effective social programs is increasing. But inequality also affects the average American's physical and mental health, as well as their social mobility and sense of accomplishment. The purpose of this study is three-fold. First, we will analyze the history of social programs and welfare in The United States, juxtaposing these programs within the historical economic context to discover the most applicable solutions for the condition of America in 2018. Second we will assess these programs' effectiveness, and draw conclusions based on the outcomes and obstacles of each policy. Finally, we will explore other nations' policies and propose modern solutions to America's problem of inequality. An important part of our examination will deal with defining the different motivations and effects of various social programs such as The Homestead Acts. We are also particularly interested in the efficacy of goods transfer systems like SNAP, as opposed to institutional social programs like the Works Progress Administration. Our research will primarily be conducted through examination of the historical record of social program studies, as well as conference with local experts.

## **Exploring the Experiences of Queer Students of Color at a Predominately White Institution**

*Jasmine Ontiveros*

Major:

The experiences of queer people of color is often different than that of a queer white individual. There are cultural factors that can impact the lives of Black and Brown queer individuals that may not be present for queer white folk. These cultural differences then impact the experiences that people of color have while they are attending a university, which can already be a hostile environment for queer individuals. This is especially true for students who attend a predominately white institution. The goal of this research was to examine the experiences and spaces of queer students of color on a predominately white campus. Two strategies were employed for this study: (1) a qualitative analysis of individual-level student experiences and (2) academic research about intersectionality. Data was collected from interviews, surveys, and publically available institutional reports. Expected outcomes of this inspection are increased awareness for the lives of queer students of color, in addition to determining the impacts their identities have on their experiences at a predominately white institution. The forthcoming information will hopefully be used in several ways, primarily: 1. to create more deliberate spaces on campuses for queer students of color to build community and 2. To improves the visibility of existing community and spaces. Fostering kinship around cultural and gender identity are sometimes neglected factors in the success of students therefore, the increase of community for queer students of color can greatly improve their overall success.

## **Pearly Whites or Carved Frights: Comparisons of Dental Aesthetics**

*Kenyatta Richardson*

*Major:*

What if your teeth were black, filed, or engraved? Teeth are intended for function, however we often associate them with attractiveness. My research aims to examine the perception of beauty and its standards specifically in regards to teeth. Americans tend to prefer teeth that are perfectly straight and white. In 2015, Americans spent \$117.5 billion on dental care expenditures alone. However “pearly whites” are not the benchmark for beauty in other cultures or locales around the world. To challenge our perceptions of having younger, whiter, straighter and healthier looking teeth, I compared different cultural “norms” of dental aesthetics from around the world. A country from each continent was examined and researched to illustrate their standard for dental aesthetics. Some examples of the cultures that will be compared are Nigeria and their fondness of diastemas or gaps, Japan and Ohaguro, the practice of dyeing teeth black, and Indonesia with braces on already straight teeth, each chosen for their diversity and popularity in their respective countries. Notions of dental beauty may be different around the world, but they can still all be considered beautiful in their own right.

## **Searching for Racial Identity: Racial Conflict in Puerto Rico and With the United States**

*Dominique Rosendo*

*Major:*

What if residents and races of American territories were considered American by fellow U.S. citizens? Currently, the idea of race with regard to Puerto Ricans is one that is complex both on the island and in relation to the mainland. This has led to a conflict of identity by people who identify as Puerto Rican and disunity between the island and mainland citizens. Reports from a recent survey indicate that about as many as 41% of mainland Americans believe that Puerto Ricans are not American citizens, even though they have been recognized as such since the passing of the Jones-Shafroth Act in 1917. Conversely, in a nonbinding status plebiscite, 97% of Puerto Rican respondents voted in favor of becoming the 51st state of the U.S. The disparity between these numbers demonstrate that not only is the US unsure about the identity of Puerto Ricans, but Puerto Ricans are hopeful to find an identity as part of America. By historically examining Puerto Rico's racial relationship both on the island and within the mainland, my goal is to demonstrate the importance of bringing Puerto Rico into U.S. politics and conversation to affirm their American identity. In doing so, we could establish a more functional relationship to support the needs of the territory. Ultimately, the complex concept of Puerto Rican race and citizenship both within the island and on the mainland have led to complications that may be improved by validating the identity of Puerto Rican people as part of America.

## **Black Women in 20th Century Literature**

*Joseph Ryan*

*Major:*

Reading is my solace. Writing is my passion. I believe that in order to improve at both, the key is to seek out perspectives and approaches different from my own, and to analyze works that have cemented themselves as classics. Literature written by Black women has always particularly interested me, because it is a perspective that I'm close to, but fundamentally separate from. This curiosity was the spark of my project. The purpose of this research was to find out how the unique intersectionality between blackness and womanhood affected stylistic and substantive aspects of Black women's writing, specifically within the 20th century. My hypothesis was that Black women's unique, subjugated role in American society has inspired literature written by Black female authors to take its own course. By analyzing thematic and stylistic aspects of works by acclaimed novelists such as Toni Morrison, Alice Walker, Maya Angelou, and Zora Neale Hurston, commonalities can be found within the genre. Through my analysis, I ultimately found similarities in how the authors approached and described the systems of oppression and hierarchy that placed Black Women at the bottom of the social structure. I also found that embedded in each work was an extreme focus on subjectivity, multiple perspectives, characteristic of postmodern approaches to literature. These authors and perspectives were tantamount to the formation of what we now know of as the postmodernist movement in literature, meaning that once again, Black women's contribution to an artform is underplayed by the vast majority.

## **Decolonizing the Classroom: Understanding Intergenerational Trauma in Education**

*Debbie McGee*

*Major:*

To understand how K-12 classrooms become spaces of colonization, through language. We understand colonization as the process in which Europeans were able to conquer most of the world and yet systems of powers are often recreated within smaller arenas in order to maintain the overall institution. This project interrogates how classrooms, as a colonized space, maintain racial intergenerational trauma. Objective: K-12 education are spaces in which children of color experience racial trauma. However, racial trauma is often inherited from parent to child and then gets reinforced in the classroom. This research project hopes to document how classrooms make this inherited trauma lived through microaggressions, erasing of history (teaching a revisionist history that waters down/leaves out slavery, doesn't talk about the effects of the Mexican/American War, neglecting Chinese Exclusion act and Japanese Internment ect) and silencing of their voices by cultivating a culture that prioritizes whiteness. Through collecting and analyzing data, I hoped to articulate how the classroom embodies colonization as well as how effects children's view of themselves and the world. The methods in this project revolved around collecting narratives from people of color about their experiences in the classroom. I collected accounts of trauma experienced in the classroom and through language through art: poetry as well as academic accounts and interviews. I collected accounts from across racial demographics, specifically from Latinx, black and native experiences. I also relied heavily on my own experiences of k-12. These accounts were not written in academic language because it is often a tool of exclusion when talking about these acts of racial violence. I knew prior to beginning the project that language has been used as a tool of

exclusion in education. However, I could only articulate this on a collegiate level. Collecting the data enabled me to articulate how language is used as a tool to suppress non-white cultural identities from early on. My findings also revealed how expressing oneself through “proper classroom English” created a cultural breach in students of color where code switching lead to crafting a double consciousness in regards to their social standing or it created this cultural distance from their family and heritage due to a loss of their mother tongue. Another aspect that my finding highlight was lateral violence within communities of color in order to survive within the overall culture of whiteness. Some narratives spoke to the criticism some students would receive from their friends and family for “talking white”, while others spoke to the internalized shame they carried for still speaking Spanish or English with an accent. Being able to speak English the “right way” was a form of embodied whiteness that was rewarded while also simultaneously speaking in your mother tongue or vernacular English was punished. Linguistic colonization is one way whiteness becomes embodied and enforced in classrooms continuing the intergenerational trauma of discrimination.

## **The Future of Trade**

*Sarah Siayap*

*Major:*

Free trade agreements (FTAs) have become the string that bind a globalized world’s economy, and act as economic pacts between two or more countries. Within them- labor provisions, built in agreements that allow oversight and enforcement, have the power to improve labor standards across entire continents. These effects can extend much further than an individual company or organization’s efforts to break the exploitive corporate culture and improve the lives of laborers. The objective of this research was to examine the effectiveness of labor provisions in the United States’ (US) FTAs. To that effect, first, various US FTAs that contained labor provisions were compared. Secondly, existing provisions were analyzed for their language, structures, objectives, and persons involved. Lastly, opinions from executive, legislative, judicial, and regulatory bodies were incorporated in order to bring in professional insight into the reasoning behind these assumptions. The results of this extensive research were then used to create a multifaceted view of labor provisions in US FTAs and determine whether or not they were effective. Analysis of FTA policy can provide insight into the creation of effective or ineffective labor provisions, and how they could be used to shape future policy. Information from such studies may extend labor rights to people in all areas of the world through the vehicle of labor provisions within FTAs.

## **YogÄcÄra and "You"**

*Arisson Stanfield*

*Major:*

The models we use to understand the world have an impact on how we think of ourselves, how we interpret new information, and what solutions we use to confront the inevitable problems that plague the human condition. How we conceive of our minds and our "Selves" therefore intimately inform psychology in all manner of ways. Transitioning from spiritual views of Self to more empirically rooted frameworks has led to demon possession being recognized as schizophrenia. As a result those burdened with this debilitating condition can find efficacious help and support. I seek to show that by updating the ways in which we view consciousness and Self we can further refine our understanding of the world and provide competent care to those who need it. Specifically I will show that YogÄcÄra Buddhist models of Self and consciousness are compatible with many of the contemporary models used in Psychology. Further I will show why that the YogÄcÄra models can offer theoretical explanations of what takes place during altered states of consciousness such as Flow, Hyper-Attention, and certain Meditative states of absorption. Flow and certain meditative states of mind are both consistently characterized by a loss in the feeling of "Self". This suggests that these phenomena may be similar in regards to what characterizes them at a conscious level. However, study into these states has only just begun and mostly centers around the phenomenological experiences and the neurological correlates that accompany them. It is for this reason I propose a YogÄcÄra model of consciousness as a framework for explanatory analysis of what actually takes place at the conscious level

## **Maternal Mortality in the United States from 1999-2014**

*Adiam Tesfaselassie*

*Major:*

Maternal mortality in the United States, especially for black women, has increased at an alarming rate in recent years, even while it has decreased in other developed countries. The maternal mortality rate is defined as the number of pregnancy-related deaths per 100,000 live births. Though the cause for this increase in the maternal mortality rate is unclear, scholars have suggested increases in childbearing age, increases in the diabetes rate in American communities, rising income inequality, and changes in health care spending may be important factors. This project examines the effect of state-level factors, including health care spending per capita, income inequality, and unemployment on the maternal mortality rate in states from 1999-2014. We link maternal mortality and birth data from the CDC WONDER database to aggregated public and private healthcare spending data from Centers for Medicare & Medicaid Services, income inequality data from the IRS, and additional economic and demographic data from the Census and American Communities survey. Additionally, we pay special attention to how these state-level factors may differentially affect maternal mortality rates by race and ethnicity by separately examining maternal mortality for Non-Hispanic black women, Non-Hispanic white women, and all women of Hispanic origins.

## **"The Art of Culture Cultivation" - The Social and Cultural Importance of Inclusive Concert Coordination**

*Kent Washington III*

*Major:*

The revolution will be cultivated. The Art of Culture Cultivation is a conscious practice that provides inclusive and diverse spaces through concert coordination. A practice that is primarily anti-white supremacist. Within the state of Colorado, hip-hop culture is underrepresented. An African-American artform that has swept the nation and became the standard for popular American culture. Today, hip-hop is the most influential entity within all spectrums. With the incline of gentrification in Denver, the system of whiteness is overtaking historically Black and Brown neighborhoods, performance spaces and agency. The same structure and institution of White Supremacy affects the music industry identically. However, what happens when we take the power back? Creators of color looking to cultivate true change locally. Instead of allowing corporations like AEG or Live Nation to monopolize the musical experience and process, we can honor our path. I am inspired to create a self-dependent institution that will book venues, host artists of color and inspire the next generation in Colorado. When translated in the music industry, consciousness and exclusivity will heighten the quality of your project while positively feeding your audience. Providing an innovative artistic experience infused with a desire to reshape institutional paradigms is the goal. What can you and your program do to disrupt or shake the core of White Supremacy in the music industry? The change starts with us. A change to manifest the Art of Culture Cultivation.

## **Dismantling the Prison Industrial Complex: Reframing the Narrative of "Prisoners" and Holding Institutions Accountable**

*Debbie McGee*

*Major:*

What if people who are incarcerated were not were not used for free labor? The process to fight for the rights for people who are incarcerated might come easier. Currently, they make between thirteen and thirty-two cents for a full day's work. This project will discuss the implications of prison labor and how the buying and selling of these products produced perpetuates the dehumanization of people who are incarcerated. From a macrosystems lens I will explore the profit company's make who buy these products from free and reduced labor. From a Mesosystems lens I will discuss other systems that perpetuate this ongoing socialization and from a microsystems lens I will discuss the harm that is caused to people who are incarcerated. The purpose of this project is to challenge our view and the socialization around how we think about individuals who are incarcerated. As people who are and will be contributing to our social, economic and political society it is our moral duty to destroy laws that support dehumanization of minoritized individuals including those who are incarcerated. To do this we need to challenge the communities that we are directly involved with and make sure we hold them accountable. By challenging institutions like Colorado State University to re-evaluate how they purchase their furniture allows room for them as an institution to see just how harmful their decision is and has been.

## Affordable Housing Options in Fort Collins

*Fatima Lizardo*

*Major:*

Cities across the nation are grappling with problems of affordable housing. Through processes such as gentrification, low income neighborhoods have been fundamentally transformed to accommodate higher income families and individuals. Manufactured home parks are a viable source of affordable housing for many Americans but are increasingly at risk of redevelopment. Manufactured home parks are especially vulnerable to gentrification because of the stigma associated with this type of community. Through my research I will explore the benefits of manufactured home parks and examine how they are at risk due to rising pressures to revitalize cities. Specifically, my research will focus on mobile home parks in Fort Collins, Colorado. By learning about current options for affordable housing, such as mobile home parks, communities can begin to examine issues around affordable housing needs.

# Notes