

Senior Projects

2019

The Senior Project is the culmination of a student's learning experience at Ross School. Through the execution of their Senior Project, students embody their passions in a process and product that integrate such Ross School principles as multiple intelligences, cultural/historical context, personal reflection, application of technology, and pursuit of excellence. The main components of the Senior Project are the Process Folio, the Final Product, and the Presentation. The relationship between the student and his or her Senior Project mentor is critical to the evolution and realization of the project. The mentor, a Ross faculty member, serves as facilitator, advisor, editor, critic, and advocate. At the conclusion of the Senior Project, students have deeper insight into themselves as learners and producers.



ROSS SCHOOL

Isa Adamkul

Political Rhetoric in Public Speaking Across the Globe

Mentor: Mami Takeda

Domains: Cultural History, Media Studies and Technology, World Languages and Literature: English

Faculty Grader: Nilder Giraldo

Understanding politicians and the skills that they use is very important as we participate in politics. Historically, it has always been important to know who we are ruled by and how they influence our decisions by their speeches and actions. For my Senior Project, I am doing an analysis of public speaking. More precisely, I am analyzing different politicians' speeches that come from different backgrounds. I am not only analyzing their speeches but also comparing their cultural backgrounds and how they affect the way they present their speeches. In my analysis, I included nonverbal communication, factors that influence the speech, and techniques that are used in speech.

Virginia Alvares Affonso

Bilros—The Art of Brazilian Lace

Mentor: Carol Crane

Domains: Cultural History, Visual Arts

Faculty Grader: Therese Lichtenstein

My Senior Project is a collection of lace pieces made with traditional Brazilian Bilro lace. This project is a culmination of my passion for fashion, my family's history, and my adoration for my country's culture. It reflects my desire to show people something from where I'm from and honor my great-grandmother, who was a lace maker from Bahia.

Lily Attias

Lil Bleu Surf Wax

Mentor: Hameer Deo

Domains: Science, Mathematics

Faculty Grader: Sam Yarabek

For as long as I can remember I have loved the ocean, and growing up, I have been watching as it gets more and more polluted. I have always wanted to try to change this, and I knew I had to start small. For my Senior Project, I have created my own eco-friendly surf wax company called Lil Bleu Surf Wax. Most surf wax has ocean-harming, synthetic ingredients in it that damage the ocean, so this was my chance to change that. Since eco-friendly surf wax is not that common, perfecting the recipe was quite difficult. I started making the wax in July, and with every batch made, there had to be a test in the ocean. I would test it myself, gather the feedback, and try again until I perfected my recipe. I also made merchandise with my logo, a website to buy my products, and an Instagram for publicity and marketing. For every piece of merchandise bought, I donate the money to Oceana and the Oceanic Preservation Society. I plan on selling my wax at local stores on the East End in the summer.

Georgy Avdalyan

Self-Working Store

Mentor: Bill Matejovic

Domains: Media Studies and Technology, Science, Visual Arts

Faculty Grader: Kieran Ryan

Nowadays, robots have gotten so developed that they can literally replace some people's work. And now, people don't even need to hire other people to do a job. Simple robots can do this job for them even faster, and it costs less than to hire a person. I got interested in this topic and will demonstrate my model of a store run by a single robot. For my final product, I am creating a model vending machine, which will have a robotic part that will serve products to people without any human assistance. I built a cubic-shaped form in wood with inner electronic parts, and I programmed them to do work in this store.

Harlan Beeton

Vision

Mentor: Paul Gansky

Domains: Media Studies and Technology, Performing Arts

Faculty Grader: Therese Lichtenstein

I have been composing music for almost half of my life, so for my Senior Project, I knew I wanted to make an album. Coming from playing bass guitar, I became interested in electronic music production a few years ago, and it has been a growing passion ever since. For my project, I composed and recorded a short album of ambient electronic music using only a modular synthesizer system and a cassette recorder. Creating ambient music does for me what meditation does for others—it offers me a chance to sit down, create a piece of music, and then reflect on what I have created, sometimes for hours on end. It is a slow process, but a highly rewarding one.

Conceptually, the four pieces of music aim to tell a story of personal growth and change over time. I wanted to use sound alone to send the listener into a meditative, reflective state, and I tried to do this by creating pieces that grow, decay, and change over time. In keeping with these themes, I recorded the entire album using an obsolete technology—the cassette recorder. This proved to be an essential piece of equipment and provided me with the ability to stay away from the computer, a tool that most musicians use to record their music these days.

Sofiya Butsko

Zodiac Through Fashion

Mentor: Alexis Martino

Domain: Media Studies and Technology

Faculty Grader: Sheryl Hastalis

I created a series of 12 separate shoots that were inspired by horoscope and 12 zodiac signs. The zodiac signs have a rich history, and they are used both in pop culture and historically. I was inspired by early times, when people used the zodiac to describe people's personalities and characteristics and predict their future.

Ollie Campbell

Firefighting Equipment Advancement

Mentor: Jon Mulhern

Domains: Visual Arts, World Languages and Literature: English

Faculty Grader: Kieran Ryan

My Senior Project shows the advancement of equipment used in firefighting, from the first fire department to now. Specifically, I show how the fire helmet has changed over the many years since it was invented in the 1840s. For my project, I constructed a leather fire helmet, based on the original design made in the 1940s, and a wood fire ax.

Luisa Carneiro

Identity Shapes Learning

Mentor: Kyle Helke

Domains: World Languages and Literature: English, Cultural History

Faculty Grader: Carleton Schade

For my Senior Project, I did personal research on the history of education and how it is changing to better suit people's needs in the 21st century, knowing that our lives are constantly changing with the exponential increase in access to technology and information. I believe education will soon go through a disruptive process in which alternative methodologies will become more appealing to parents and students, who understand how important it is that learners find a methodology that can give them freedom both to explore personal areas of interest and engage in studies that are crucial for us to grow as a community. My final product consists of a book with the data I gathered during my research and suggestions for how school systems could be better organized.

Elizabeth Cummings

Planet Plastic

Mentor: Anna Strong

Domains: Visual Arts, Science

Faculty Grader: Carlton Schade

My project is an art statement about the world of plastic that we live in. This globe is made of recycled plastics such as fishing net, plastic bags, and plastic bottles. I hope this piece raises awareness about our daily mass consumption of plastic products.

Padmavathi Devella

A Cleft Girl's Journey from India

Mentor: Shelby Raebeck

Domains: World Languages and Literature: English, Media Studies and Technology

Faculty Grader: Christopher Engel

For my project, I wrote a book that tells a story about my life and the medical research about cleft lip and palate.

I have chosen this project because I wanted to create awareness about cleft. Maybe because I was born with cleft, I was interested in the related medical issues. I don't know about other countries, but in India if you're born with a

deformity, people look at you like you don't belong in this world. I thought that creating this book would teach people about cleft and tell them that it's not so bad. I also wanted to help cleft children in India who don't receive the same education we do, and will organize a dress-down day at Ross School to raise funds for cleft children at the GSR Hospital in Hyderabad, India.

Chris Fava

Untitled

Mentor: Alexis Martino

Domains: Wellness, Media Studies and Technology

Faculty Grader: Hailey London

For my Senior Project, I created a healthy cookbook for children with simple recipes they can make with their parents. I included about 20 homemade recipes in the final book. I cooked each recipe at home and photographed them. Growing up, I always loved cooking, so I thought doing a book with some of my favorite recipes could be fun. For each recipe, the main goal was to incorporate vegetables into the food without being able to see them.

Bruce Feng

Artworks

Mentor: Jennifer Cross

Domains: Media Studies and Technology, Visual Arts

Faculty Grader: Ned Smyth

My art philosophy is about devotion to the story. Personally, I believe an artwork without a story is soulless. My artwork tells a story about what we are. I express these stories using animals like sheep and wolves as metaphors for humans. For me, it is shocking to understand how much we are like animals. The blindness of sheep, flowing under the current and mindlessly following trends, is like jumping on the bandwagon of conformity. The wolves are very much like us as well. They are collective and collaborate like humans, living in a community and working together as one unit.

This summer I expressed my feeling about my preference to attend art college, which was, of course, rejected by my parents. However, I did not resist. When I looked at their thoughtful eyes, I gave up my dreams for numerous reasons. At that moment, I felt like I WAS EATEN

One of my inspirations for my body of artworks was a book I found that had been left in my bookshelf for many years: *A Madman's Diary* by Lu Xun. It is a book that I wasn't able to understand when I was little, about a madman who thinks everyone around him is a cannibal who wants to eat him, even his brother. Now I know where the madness comes from. In my work, I am criticizing something that does not prevail here, but does across the Pacific—a society that handcuffs us with specific demands and standards. Just like how I gave up my dreams, there are many more of us are limited by feudal thoughts. A society shapes us to behave in certain ways, and any anti-mainstream moves will be judged by people around you. This is what I attempted to express in my artworks.

Felipe Ferraz

ASAP

Mentor: Linda Hanrahan

Domain: Mathematics

Faculty Grader: Nilder Giraldo

My Senior Project idea consists of the creation of a business plan about an innovative idea involving sustainable cleaning products. I will develop cleaning products that do not harm the environment, and use renewable packaging. My product will also include an educational component in order to educate members of the community about sustainable cleaning products. Cleaning products are present in everyone's routine in their household, and even though we do not see the consequences, they harm the environment. By creating this business, the goal is to minimize any damage to nature and empower people to make a change.

Dualta Gallaher

Enzyme Linked Immuno-Absorbent Assays (ELISA) to Measure the Amount of Ferritin in Mouse Lung Epithelial Cells Treated with Varying Percentages of Cigarette Smoke

Mentor: Kim Borsack

Research Consultant: Dr. Suzanne Cloonan

Domain: Science

Faculty Grader: Anna Strong

During the summer, I had the opportunity to research under Dr. Suzanne Cloonan, who is a professor of biochemistry at Weill Cornell Medical College. I studied ferritin and its implication in chronic obstructive pulmonary disease (COPD). Ferritin is an iron carrier protein, and COPD is a progressive lung disease that as of now has no cure. I discovered that the increase in ferritin could occur in the lung epithelial cell media, which was not previously known. I found that ferritin increase occurred when I treated my cells with varying percentages of cigarette smoke. After completing the internship, I decided to turn this research project into my Senior Project, so I wrote a scientific paper on my research.

Vitalina Golod

Considerations for General Rehabilitation for Lateral Ankle Injuries

Mentor: Eugene Lee

Domains: Wellness, Science

Faculty Grader: Carleton Schade

Based on the plurality of studies, ankle injuries are one of the most common and recurrent injuries in today's world. Whether you are running sprints or just walking up the stairs, the chances that you will injure your ankle rather than anything else are quite high. Not only is this injury unpleasant, but if the recovery process is not done correctly, you might cause even more harm to your body than the injury itself. As an athlete, I, unfortunately, have experienced many injuries, and because the periods of recovery were handled incorrectly, the recurrence of ankle sprains has been increasing over time. Therefore, I decided to create my project focusing on the rehabilitation processes for ankle injuries. This project is a full comparison between an ankle sprain and an ankle fracture, based on various researches and real-life experiences. Through this study, I have decided to pursue a career in physical therapy with a focus on ankle injuries and instability.

Sophie Griffin

Untitled; Consciousness

Mentor: Joseph Kugelmass

Domains: World Languages and Literature: English, Media Studies and Technology

Faculty Grader: Hameer Deo

Consciousness is an exceedingly tricky concept to define, but it's the way all of us experience the world. It's always intrigued me, so for my Senior Project, I studied consciousness through the various lenses of philosophy, neuroscience, phenomenology, meditation, dream analysis, and media. Through my readings, viewings, and experiences I examined consciousness in depth. For my final project, I created a dream-sequence experimental film called *in somnes*, inspired by many of the surreal films I watched.

Coco Han

From Pop Stars to Orphaned Dogs: Understanding Cross-Promotional Advertising Campaigns by Nonprofit Organizations

Mentor: Paul Gansky

Domains: World Languages and Literature: English, Media Studies and Technology

Faculty Grader: Sam Yarabek

My Senior Project is a research paper about Beijing Adoption Day (a nonprofit organization that addresses orphaned animals in China), and their use of well-known brands and celebrities to create advertising that supports an experience of "compassionate consumerism." Using firsthand interviews and a wide array of promotional materials compiled by myself during an internship with Beijing Adoption Day, I demonstrate how consumer allegiance can be transferred to noncommodified, ethical experiences (such as adoption) by mining pre-existing relationships with certain brands or opinion leaders. This argument contrasts strongly with general public and academic discourse of "compassionate consumerism," which largely believes it does not exist. Overall, I suggest that compassionate consumerism can thrive despite its close relationship to traditional modes of consumption.

Brandon Hecht

Nutrition and Exercise from a Scientific Perspective

Mentor: Eugene Lee

Domains: Science, Wellness

Faculty Grader: Hailey London

Throughout the summer, I intensively researched factors that affect overall health and athletic performance, including human kinesiology, anatomy, and nutrition. I also compared and contrasted various prescriptive stretching, nutrition, and fitness protocols. I then did an in-depth analysis into different styles of training. Through palpation and hands-on experience, I found out that all these aspects relate to each other as an interconnected system that affects daily physical performance.

As a culmination of my new skills and knowledge, I created and follow a science-backed 16-week training and nutrition protocol, where each claim is backed by multiple recent studies cited in AMA format. I also utilized other supporting media such as graphs, charts, a compilation of studies, and a short film I created on how to train.

I chose to do this project because of my love of human anatomy, nutrition, and the related biological sciences. My innate passion for exercising, along with a love of learning and strong work ethic, drove me to embark on this mental and physical transformation. I am eager to share the facts and skills I have acquired as I work to promote healthy lifestyles for the benefit of humankind. My passion is to help people attain their goals.

Qisen Hong

In the Light

Mentor: Jon Mulhern

Domain: Visual Arts

Faculty Grader: Kim Borsack

For my Senior Project, I studied future design and modern to contemporary history of lamp designs. My project was mainly focused on postmodern design. After completing some research and creating my artist statement, I created three final products. I hand-built three sculptural lamp designs. For this project, I mainly focused on woodworking and included some mixed materials like metal, plastic, rope, and wire. It was my first time doing this large of an art project. In some ways, I'm still a beginner in woodworking. I studied so many skills with Mr. Mulhern, and I really enjoyed it.

Pierce Houghton

The Automobile of the Future

Mentor: Paul Gansky

Domains: Visual Arts, Media Studies and Technology

Faculty Grader: Kieran Ryan

For my Senior Project, I developed the Automobile of the Future, the Audi Next100. One of the main concerns of current automobile designers is how the automobile will change with the onset of new technology in the 21st century. With the Audi Next100, I set out to create a vehicle that will bridge the gap between the automobiles of today and what engineers and designers predict the automobile may become in 100 years. The car itself was designed to merge classic driver response and a sporty and adaptive feel with modern technology, including self-driving capabilities and being 100% electric. The car went through many design stages and peer revisions, and I ensured that my finished product would be the perfect balance of innovation and style. This mid-size sedan was designed to be ideal for both urban and rural environments, with its electric drivetrain allowing for a plethora of interior passenger and cargo space. My finished product includes my many process sketches and finished renderings, as well as technical specifications based on real Audi technical data from its e-tron brand, which this car will be fictionally marketed under.

Molly Howard

Terms of Service

Mentor: Kieran Ryan

Domains: Media Studies and Technology, Visual Arts

Faculty Grader: Paul Gansky

My Senior Project, *Terms of Service*, is an animated short that is about three minutes long, which tells a story of satirical horror to answer the question "What would horror movies be like if people used modern technology?" The

story consists of three children who come across a haunted text, and in their curiosity, they translate the words through the AI on their phones. When their AI program Iris translates the text, it summons a monster that towers over the trio . . . a monster who is then only allowed to possess the phone instead of the children, as nobody spoke his ritual but their phone. The project took the entirety of the months dedicated to Senior Project to make, and was a labor of love. I hope through this project to effectively tell my stories and entertain my audience through the visuals and the dialogue.

Xinyi Hu

Humphead Wrasse—The Ugly and Beautiful Fish

Mentor: Hameer Deo

Domains: Science, Visual Arts

Faculty Grader: Jennifer Cross

You are going to explore the magic behind ocean and science in this exhibition. There is a computer-generated environment for humphead wrasse, the biggest coral reef fish, created in the program Mathematica. This computer simulation included eight different variables:

- coral health condition
- marine protected area size
- ocean salinity
- temperature
- mariculture* level
- fishing pressure
- average lifespan of humphead wrasse
- aggregation site

* Mariculture: the activity of capturing three-month-old humphead wrasse juveniles and cultivating them until they are ready for sale.

Oscar Jackman

Wood Carvings

Mentor: Jon Mulhern

Domains: Visual Arts, Cultural History

Faculty Grader: Lisa Gillespie

This merlion creature, with a lion's head and fish body, is inspired by the works of Hieronymus Bosch and mythical creatures. I used local driftwood and other found natural materials, including mountain laurel branches and pinecones found on campus. Initially, I made sketches upon which I based the creature. The entire project focused on Medieval and Renaissance art and carvings. I chose to do this project because I have an interest in building, carving, and creating sculptures using natural materials. I do tend to have some versatility when it comes to my art, so I wanted to show different media and techniques for my project. The media I chose, primarily the driftwood, also resemble the surrealist work of Picasso. In using the driftwood, I have taken what nature has provided and am attempting to give it a new purpose. It's nice to have a hand in reusing something, since as a society overall, we are more prone to waste the most useful things around us than to recycle and reuse them.

Priscillia Kat

In the Heart of Africa

Mentor: Junellen Tiska

Domains: Cultural History, World Languages and Literature: English

Faculty Grader: Anna Castellazzi

At Ross School, third-graders learn that the first humans came from Africa. I wanted to be involved in the learning process and teach students more about Africa; therefore, I created a tutoring course for the third-grade class.

Jenna Kestan

BuddhaBerry on Wheels

Mentor: Kieran Ryan

Domains: Media Studies and Technology, World Languages and Literature: English

Faculty Grader: Therese Lichtenstein

I knew I wanted to create something in the realms of business and creating a product. This past summer, I was the night manager at BuddhaBerry, my family's frozen yogurt business. As I worked at the cash register and engaged with customers, I realized that the business needed a catering arm.

I created a business plan for a catering truck linked to BuddhaBerry that would operate during the summer season. I met with a lawyer to discuss various permits and insurances that I would need to acquire as well. In addition to my business plan, I also designed the truck and made replicas of the website pages that would be used if we were to implement this business plan.

Tim Kuo

CRISPR

Mentor: Anna Strong

Domains: Science, Cultural History

Faculty Grader: Jennifer Cross

Passing through the era of artificial intelligence, genetic engineering is seen as the next hot topic. It can achieve many goals that humans could not have done. Since I am interested in various engineering disciplines, I looked to see what fits my interest. The goal of engineering is to solve real-world problems and improve human welfare with technology, so CRISPR came to my mind immediately, as it is a cross-age technology that could change the world. The project is trying to help people from different fields and interests to understand the basic concept of CRISPR, and to inspire those who are interested in science.

Larry Li

Panda Garage

Mentor: Kieran Ryan

Domains: Media Studies and Technology, Visual Arts

Faculty Grader: Ned Smyth

This past year, after getting my driver's license, I became very interested in car design, racing, decal design, car skin designs. I have always had a great interest in learning graphic design, so I thought there was no better time to do so than for my Senior Project.

I researched modern-contemporary car design and street racing history for inspiration. I designed a car catalog by using Photoshop. My goal in the future is to promote more catalogs for car decal companies.

Paloma Lin

"No Worries"

Mentor: Ned Smyth

Domain: Visual Arts

Faculty Grader: Gary Skellington

I wasn't sure at first what I would like to do for my Senior Project, but I knew I wanted to do something related to art that would have a special meaning to me. After changing my project a number of times, I decided to do something other people would relate to. In the end, I decided to create a booklet about different emotions and issues of self-esteem, in a less intimidating way. The main idea was present issues that people struggle with and make them easier to understand. In the process of producing the illustrations, I learned to use watercolor and Photoshop to get a different final product from the previous artwork I've done. During this process, I learned how complex it is to combine illustration and text that talk about specific subjects that can be sensitive. My goal was to combine two areas that I'm very interested in, art and emotions.

Leo Liu

Mirror

Mentor: Sam Yarabek

Domain: World Languages and Literature: English

Faculty Grader: Mami Takeda

I wrote a book for my Senior Project. I got my inspiration from both my Modernity Project and the reading I did during my spare time. This project gave me an opportunity to express my imagination and communicate my ideas through words. While coming up with ideas for my Senior Project, my ego encouraged me to create something that could be seen as tributes to the things I love, which is fiction novels, or to be clearer, the monsters/villains in those stories.

Liam Murray

“Old Enough to Sleep”

Mentor: Alexis Martino

Domains: Media Studies and Technology, Visual Arts, Performing Arts

Faculty Grader: Sam Yarabek

“Old Enough to Sleep” is a multimedia art project consisting of four songs, written and recorded by myself, tastefully paired with four conceptual photographs that clarify and elaborate on the themes and narratives of the music. Together, they explore the darker, weirder bits of my personality that may not surface in my Common Application, but that undoubtedly shape my identity. The themes of the project include, but are not limited to, the feeling of freedom that comes with “ghosting” someone online, the facial expression of a headlight-illuminated dog-walker in the night, the undeniable impermanence of friendships, and the ennui that comes packaged with the end of adolescence. Though the project is one of self-exploration, I’d like for it to serve as a gentle reminder to the viewer that they’re not alone in their own strangeness.

Fernanda Oliveira

“Cheap Is Chic”

Mentor: Sam Yarabek

Domains: World Languages and Literature: English, Cultural History, Visual Arts

Faculty Grader: Nilder Giraldo

For my Senior Project, I decided to write a book about fashion and economy. Immeasurable things have been written about fashion, in a lot of ways, but I do not think that many people pay attention to the details of it. One could go on about fashion throughout the decades, but this book was created to avoid boring the reader. I have decided to address a timeline of what was happening to fashion in the last 10 years in New York City. It includes how socioeconomic positions and the global economic crisis of 2008 reflected on fashion, and how it continued to work. I have titled this book *Cheap Is Chic: The Economy’s Impact on Fashion*.

Ximena Ordoñez

The Daily Lives of Nahuatl Women

Mentor: Therese Lichtenstein

Domains: Media Studies and Technology, Cultural History

Faculty Grader: Debra McCall

I have created a series of photographs and narrative texts to give voice and visibility to indigenous women in central Mexico who create embroidery for the dress company JUUN in Tulum, Mexico. I interviewed six women and made a series of 10 large-scale photographs. My project addresses the relationship between the personal, socioeconomic, and political issues these women encounter with the craft. I prepared a small brochure combining some smaller photographs and a short essay that provides a context for the women and their work. The paper includes a brief history on the embroidery and a summary of the women’s stories with some information about the brand. I also intertwine my own experience visiting the women with the history of their embroidery and the women’s stories. I’m interested in sociopolitical issues, and what we can do to help less-privileged communities, especially, like the one I visited. It’s relevant today as these traditions slowly die in order to assimilate into mainstream culture. The images in

the embroidery are ancient, and within them are also represented the stories of the women's present lives. Keeping these crafts alive is important.

Owen Pang

A Cookbook: The Molecular Fusion

Mentor: Kim Borsack

Domains: Science, Media Studies and Technology

Faculty Grader: Anna Castellazzi

For my Senior Project, I created five personal dishes using molecular gastronomy skills, as well as constructing a cookbook including those recipes. In the book, I will start with an introduction to molecular gastronomy history and explain the special techniques that I used during the process of making the recipes included in the cookbook. I have personally designed the recipes for the dishes and illustrated each required step in my book. The basic idea of this cookbook is to provide an easier and more thorough explanation to teach anyone who is passionate about molecular gastronomical cooking. I will also make samples of each dish included in the cookbook during Senior Exhibition Night, to let the audience have a taste.

Ella Patrick

Seeing America

Mentor: Alexis Martino

Domain: Media Studies and Technology

Faculty Grader: Gary Skellington

It's hard to take a picture in the Hamptons. Whether you're releasing the shutter in East Hampton—less a town and more a glittering hallucination—or adjusting white balance in Sag Harbor—a Thomas Kinkade pastiche in three dimensions—photography feels redundant. Everything already is photographic, hyper-visualized, built to be seen at whatever angle, at whatever hour. Even in outlying Montauk it's impossible to escape a prefab visual culture of trawler captains and lonely gas station attendants, their sea-stiffened beards and split fingernails primed for an exposé on “the other America.”

Rather than challenge this formidable environment, I embraced it. I traced the performance of visibility across race, gender, age, sexual preference, and certainly class. (The term *dollar-haunted* comes to mind while gazing at these faces and bodies.) And rather than use photography to critique, I leveled the playing field. My photos in this series distill moments when the performance of being seen either triumphs (witness the quiet poise on a chicken farmer's face) or comes apart at the seams.

My images could in fact be considered a documentary about a cast prepping for a very peculiar play, one that veers wildly from dripping tuna nets and all-night laundromats to invite-only chardonnay tastings. This play is indeed so visual that the other senses are aroused. Lean close enough to these photos and you'll catch a whiff of *eau de toilette*, hair bleach, and sour wool.

Kai Peng

Heritage

Mentor: Mami Takeda

Domain: Visual Arts

Faculty Grader: Amy McDougal

Tie-dye, as a special form of art, has its own cultural meaning and value in China. I used natural materials such as indigo to create patterns. Some were challenging and some were simple patterns. The unexpected elements appearing during the processes of tie-dye created a certain language that expresses spirits, emotions, and energies. I hope my work can bring people's attention to this form of traditional art, as it is less appreciated and valued in today's society.

Enrique Pichardo

What Is Out There and How Can We See It?

Mentor: Anna Strong

Domain: Science

Faculty Grader: Carleton Schade

I am from Southampton and I enjoy being outside a lot, which is why my project is on tracking animals. For six months, I spent time in the field working on tracking animals and learning how to make plaster casts of their footprints. Making these plaster casts was a learning process, and it sometimes got me frustrated when the plaster failed to harden properly, or when it destroyed the footprint if it was on a very soft surface. I also set and monitored a camera trap on Ross School property and around my house. When I had the camera here on campus, I expected there to be more animals, because there is way more vegetation here than at home. I was surprisingly wrong about this hypothesis, and found more diverse animals at home. Finding tracks at home, however, was more difficult than at Ross because tracks are more easily contaminated if there's a lot of human presence. This also makes it harder for the plaster to remain intact when setting casts. While conducting research, I also learned about animal behaviors that I never really knew about or just seemed amazing to me, for example, stomping from a deer. The first time I saw this was when I was setting up the camera. They do this when they are alert but they don't know where "danger" could be coming from. I now feel more aware of the wilderness and what is out there, and I also feel like I'm more connected to the natural world. I hope to continue this type of work in other places.

Luis Marcelo Roldan

Courtney's Café: Developing Healthy School Snacks

Mentor: Hailey London

Domains: Wellness, Mathematics

Faculty Grader: Shelby Raebeck

Welcome to Courtney's Cafe. Courtney's Cafe was born out of a mingling of my love for baking, desire to be healthy, passion for charity and making a difference to others, and deep interest in business and entrepreneurship. This, along with my great love for bringing people together to share food, Brazilian flavors, and good times, makes Courtney's Cafe my great pleasure to run.

Jensen Rowen

Carving Modernism

Mentor: Kieran Ryan

Domain: Visual Arts

Faculty Grader: Therese Lichtenstein

I've always been interested in my late father's work as an architect. I was very young when he passed, and so I never knew much beyond the fact that he was "an architect who favored Modernism." Throughout the years, I've become increasingly interested in finding out more about exactly what he did and how he got to where he was. I knew that I wanted to incorporate his works or his theme of modern architecture into my Senior Project.

Last year, for my Modernity Project, I did a German Expressionist woodcut. Thinking back to how much I enjoyed that process, something sparked inside of me. I began studying my father's published work and files of floor plans in his old office space. I came across a project of his that was drawn but was never built. It was the inspiration I was looking for. So, combining my knowledge of woodcuts and my father's designs, I began to formulate my Senior Project. I decided to create woodcuts that show different angles of the building so that, in a way (far different from his original vision, I'm sure), I'd be able to tie a bow on his unfinished work.

Valentina Victoria Monsalve Salgado

Future of Sevilla

Mentor: Alexis Martino

Domains: Media Studies and Technology, Cultural History

Faculty Grader: Sheryl Hastalis

For my Senior Project, I created a foundation to support high school students to go to college in Colombia. I created a website where you can see the stories of eight very dedicated students in Sevilla, Colombia. On the website, you get to meet each student and hear their story through their interviews. You learn about their past, their present, and what they dream for the future. On the website, you can also donate or buy something; all proceeds of what's sold goes to these students' college fund.

Alexander Saunders

Spiral Store Business Plan

Mentor: Carolyn Viens

Domains: Mathematics, Media Studies and Technology

Faculty Grader: Linda Hanrahan

For my Senior Project, I have created a business plan with seven sections for the Ross Spiral Store. The path to creating the Spiral Store allowed me to add important information to my business plan, but the Spiral Store itself was not my Senior Project. This project has allowed me to explore my interest in business, something I would like to pursue in college.

Jacob Seltzer

Baseball Analytics

Mentor: Carl Brandl

Domains: Mathematics, World Languages and Literature: English

Faculty Grader: Matthew Aldredge

For my Senior Project, I am going to try and do some sports analytics. I eventually settled on baseball, since I thought it would be a good sport to start with. I look at athleticism and see if I can find any players who are underpaid or underperforming.

Jessica Skitalinsky

“Above and Below” National Observatory Park

Mentor: Ned Smyth

Domain: Visual Arts

Faculty Grader: Mami Takeda

Arriving at Ross School in September, I didn't know anything about the Senior Project assignment. While coming up with ideas for my Senior Project, I knew I wanted to create something related to architecture, specifically, a social space for people. I came to my mentor with two different possible ideas, and he suggested I unite them. I spent a while deciding what kind of social space it could be, and eventually I came up with an idea of designing a park where people and their families would be able to enjoy the night sky and the underwater life of manatees and other water creatures. The park would include a planetarium, a telescope observatory, and above- and below-water observation decks.

Cristina Stivala

Gel Exclusion of Nucleation-Inducing Elements

Mentor: Carleton Schade

Domain: Science

Faculty Grader: Paul Gansky

The world of molecular biology is a fascinating one that can be considered the foundation of all modern medicine. It may seem surprising that one of the discipline's smallest components is actually one of the most crucial, and that is the protein structure itself, which comes from the generation of protein crystals. These little diamond-like structures hold the answer to the chemistry and behavior of our constantly evolving bodies and serve as the facilitators of life.

This past summer, I worked in the research labs at Brookhaven National Laboratory with a team of talented individuals—professors, graduate students, and other high school students. Together, we engineered a growth mechanism for obtaining the highest-quality protein crystals and structures with 100% accuracy. Our secret ingredient to this method is agar, a gelatinous substance obtained from various kinds of red seaweed. This intensive research resulted in two recent publications, both of which I am a co-author for—(1) a peer-reviewed paper titled “A Simple Technique to Improve Microcrystals Using Gel Exclusion of Nucleation-Inducing Elements,” and (2) the deposition of two protein structures onto the Protein Database.

Brian Sullivan

Digital Monster Ver. 0NL1NE

Mentor: Sean Carmichael

Domain: Media Studies and Technology

Faculty Grader: Gary Skellington

Digital Monster Ver. 0NL1NE is a system that will allow the Digimon virtual pets to communicate over the internet rather than in person. My Senior Project was laying the groundwork for this system by learning how to use and modify the initial design of my friend into a form that could be used for the above purpose. It currently consists of a guide containing the information needed for anyone to assemble and use my version of the device and connect to others around the world. In addition to this, I have been helping my above-mentioned friend with the analysis of the signals coming out of the Digimon devices to produce a software version compatible with devices other than the version initially planned for the base project. Digimon 0NL1NE, as it is also known, has been released onto the internet and has drawn the attention of many fans of the virtual pets already.

Steven Tu

Hip-Hop: Forecast

Mentor: Adam Judd

Domains: Performing Arts, Media Studies and Technology

Faculty Grader: Kieran Ryan

When I first tried composing a piece of melody in my 10th grade performing arts class, I felt amazed by how music embodies my creativity, since it consists of uncertainties and possibilities that inspire my ideas. In order to further develop my music technology skills, I chose to compose an album of instrumental music beats as my Senior Project. I chose the weather as the theme of my album, because music and weather can both easily change people's emotions, and I wanted to see what happens when I connect them together. The music style of my album is hip-hop, because hip-hop music mixes various music forms and elements corresponding to diverse forms of weather. By completing my Senior Project, I have become more logical and creative, and I have experienced the joy of working hard for what I love, which motivates me to continue learning music technology.

Patrick Tuminski

The Three Pillars: Formah

Mentor: Joseph Kugelmass

Domains: Cultural History, World Languages and Literature: English

Faculty Grader: Sam Yarabek

For my Senior Project, I have written a fantasy book based on ancient history, particularly late Roman Republican history. I have spent time outlining and creating a world with its own history, geography, and diverse cultures. The narrative follows the grand plan of the enigmatic conqueror Numurah, who seems intent on uniting and ruling all civilized people. He begins with the task of taking on the highly militaristic republic of Formah. The story further branches off into the lives of underlings and rivals of Numurah, as well as average people who lead their own lives unaware of the coming devastation. The proud and haughty lords of the Formah learn all too slowly just how dangerous this stranger from the edge of their world is—and just how far he is willing to go to achieve his aims.

With this project, I have explored and studied ancient Italian, Celtic, and North African cultures, and the relations among them. It was my goal to create an interesting and somewhat historically inspired world, and a compelling beginning to an expansive series.

Leif Wood

Auto Consumer

Mentor: Paul Gansky

Domains: Media Studies and Technology, World Languages and Literature: English

Faculty Grader: Therese Lichtenstein

When I was 17 years old, I fell in love with Beat literature—Hunter S. Thompson, Allen Ginsberg, and William Burroughs—all of whom seemed to live on their own terms. I, on the other hand, felt trapped within the omnipresent consumerism of East Hampton, with its bouquet of boutiques and giant glass boxes masquerading as houses. I decided I had to live like the Beats, and living without a house for the summer was how I was going to do that. I winnowed my possessions and packed them into the back of my mom's Prius. I became a petrol-powered hermit crab.

Over the summer in my car, I collected all of the trash I created and wrote about my experience every day. Then I transformed this trash and writing into an art installation. With this exhibit, I hope to examine the relationship between writing and housing and the effect that housing has on our perception of objects and ourselves through book making. I examined the way repetition, reproduction, and waste get expressed not only in the ways we “house” writing but also in the ways we “house” our lives. For example, the paper pages of the book and the paper containers of packaging are two things that seem completely different because of how they are presented to us. However, by presenting them both bound as books, I wanted to show that they are both only mass-produced writing made to be consumed.

We identify ourselves through our collections of things. Each time we buy something, we paste it haphazardly into our internal narrative of ourselves. We are all hoarders; some of us just throw things away. Like books, we are amalgamations of stories housed in perfectly rectangular covers called homes. I tried to escape my binding through my car, but without one, I was impermanent, destined to keep spending money simply to reserve enough space for my existence in block stores and coffee shops. Through this exhibit, I hope to blur the lines between ownership and identity as well as high culture and low culture, and consumerism and intellectualism, enough that it calls into question the methods by which we determine who we are.

Ziyan (Angel) Wu

On Bullying

Mentor: Jennifer Cross

Domain: Visual Arts

Faculty Grader: Ned Smyth

My Senior Project focuses on the topic of bullying. The project consists of an installation of 12 boxes, 12 postcards and an oil painting. Twelve objects are installed in the boxes, each representing a different story. I collected these stories by sending out a survey through the internet and by doing research. The 12 postcards are designed based on the objects and are designed in black and white. Negative space is the key for the design. At the back of the postcards are printed stories that match with the objects in front, helping to explain the theme of the installation through each story. The oil painting is painted from a first-person perspective, creating a feeling of being surrounded

by a crowd of people. When the viewer enters the gallery and is confronted by the painting, I want them to feel uncomfortable by the hostility of the figures staring at them.

I hope that when people see my installation they will have empathy for those who are bullied, and think about acting if they see bullying occur. In my opinion, we cannot completely stop bullying behavior, but I hope people realize we need to speak up and try our best to help the victims.

Hanzhi Xu

The Beauty of Math

Mentor: Heather D'Agostino

Domain: Mathematics

Faculty Grader: Michele Passarella

Mathematics is always an area that makes students feel stressed and helpless. I myself am a person that fell in love with the beauty of math, so my Senior Project is focus on using models to explain two math concepts. My first model is trying to explain the concept of harmonic series by using a set of books; under one harmonic series to pile up the books, the books could in theory reach an infinite length. This model presents an idea of how that could be infinity. My second model is related to Delaunay triangulation. Delaunay triangulation has many applications in real life, and this model shows one of the applications, which is a minimum spanning tree. By using a minimum spanning tree, I can find the shortest way to organize a city's power line system.

Sarin Ye

The Reason Behind Tattoos

Mentor: Alexis Martino

Domain: Media Studies and Technology

Faculty Grader: Hailey London

For my project, I photographed a variety of people who have tattooed their bodies. My project started off in Chin village in Myanmar, and then moved to East Hampton, and finally to Bangkok, Thailand. Through this project, I've explored the reasons behind body tattooing. For some, it was used to mark a cathartic event; for others, it was about beauty and design; and for some others, it was for religious significance. In each case, the tattoos are a part of each individual's identity. The project has opened a whole new world of personal understanding of body scarification and the significance that it has for the individual.

William Yin

Helpful Tips for international Students

Mentor: Mami Takeda

Domain: Media Studies and Technology

Faculty Grader: Anna Castellazzi

Even though a variety of information is available about studying abroad, tips from students who have experienced the process might be helpful and valuable for new students who are planning to study abroad. To help these students, I have created a YouTube channel that shares a series of short videos that contain tips from my own experience as an international student. Students encounter many issues before and during their studies, and even small problems can

cause stress. One of my goals for this project is to help these students avoid or minimize confusion, worry, and other possible conflicts during their studies. I hope these videos can help some students who are preparing for this big journey.

Gianluca Zanetti

0% Plastic

Mentor: Mami Takeda

Domains: Science, Media Studies and Technology

Faculty Grader: Nilder Giraldo

Over the years, humans have developed new technologies to make their lives easier and more convenient. However, in exchange for convenience, we have created the serious problem of dependency on plastic. For example, we buy and dispose of plastic bottles and utensils to avoid washing dishes. These plastic utensils are made from petroleum, and unfortunately, we do not recycle them. The plastic objects, most of the time, are discarded in the streets or even in rivers and oceans, which adds to global warming and affects all Earth life-forms.

With a strong desire to take a step forward to solve this problem, I decided for my Senior Project to create edible and biodegradable recipes for cutlery, in hope of informing and educating people to reduce the consumption of plastic, because plastic pollution is the one that haunts the environment the most nowadays. To show effective and relevant results, I also decided to collect plastic bottles to exchange them for money at recycling stations to buy the ingredients for the recipe. People do not need to spend any money to help the environment. My final products are three types of edible spoons (granola, cheese, and cookie); gelatin cups; and biodegradable plastic wrap.

Longyu Zhang

Culture at your Fingertips

Mentor: Kieran Ryan

Domains: Visual Arts, Cultural History

Faculty Grader: Christina Schlesinger

Ross school's Senior Project gives me a great chance to explore my interest in paper-cutting. I did a lot of research about Chinese paper-cutting online and learned many techniques both online and from my dad. I wrote an informative research paper about Chinese paper-cutting, which can be seen on the homepage of my website. I made approximately 50 pieces of paper-cuts by myself to have a deeper understanding of the art. I also created a website to further spread the culture of Chinese paper-cutting. I hope the website will inspire more people to learn about Chinese paper-cutting culture.

Xinmiao (Monica) Zhang

Communication & Self-Awareness

Mentor: Mark Strong

Domains: Cultural History, Wellness

Faculty Grader: Gary Skellington

For my Senior Project, I designed a curriculum of communication and self-awareness. Most conflicts happen because of misunderstandings, and some people have negative perspectives because their expectations are higher than

reality. However, every single event, expectation, or comment is words, and most problems can be solved by communication. In fact, I designed a three-unit curriculum for my Senior Project. In the first unit, students build their understanding of the process of communication, how to interpret words from various perspectives, and effective methods of communication. With the understanding of words and perspectives, for the second unit, students use their knowledge to analyze different social issues and issues related to their lives. With the understanding of words and our society, in the last unit, I use the philosophical question “Who am I?” to help students build a better understanding of themselves.

YanSong Zhang

18-Hole Golf Course

Mentor: Shelby Raebeck

Domain: Visual Arts

Faculty Grader: Nilder Giraldo

For my Senior Project, I designed an 18-hole golf course. My products are one large design graph of all the holes and four perspective drawings of some interesting features of the course. I have played golf since I was young, and it has brought me a lot of fun and many achievements. Over my entire time in high school I was on the golf varsity team. Golf became indispensable to me. While I played on different courses, many special characteristics of each course interested me. Using what I learned in art design class these past few years, I put many interesting features in my design.