



**APRIL 12<sup>th</sup> 2019**



**EASTERN  
CONNECTICUT  
STATE UNIVERSITY**





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**APRIL 12, 2019**

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## **SCHEDULE OF EVENTS- OVERVIEW**

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<b>8:00 am – 9:00 am</b>	<b>Registration</b> , Student Center Vendor Nook
<b>8:30 am – 10:00 am</b>	<b>Oral Presentations, Session 1</b> , Student Center Meeting Rooms <b>Kinesiology and Physical Education Demonstration</b> , Student Center Theater
<b>10:00 am – 10:30 am</b>	<b>Coffee Break</b> , Student Center Café
<b>10:30 am – 11:45 am</b>	<b>Oral Presentations, Session 2</b> , Student Center Meeting Rooms <b>English Performances</b> , Student Center Theater
<b>11:45am – 12:30 pm</b>	<b>Lunch</b> , Student Center Café
<b>12:30pm – 1:00 pm</b>	<b>Awards and Recognition Ceremony</b> , Betty Tipton Room
<b>1:00 pm – 2:00 pm</b>	<b>Poster Session</b> , Betty Tipton Room <b>Photography Exhibit</b> , Betty Tipton Room
<b>2:00 pm – 3:00 pm</b>	<b>Panel Discussion</b> , Student Center Meeting Rooms <b>Coffee and Desert</b> , FAIC Lobby <b>New Media Studies Demonstrations</b> , FAIC Lobby <b>Dance and Spoken Performances</b> , FAIC Concert Hall
<b>3:00 pm – 4:00 pm</b>	<b>Art &amp; Art History Oral Presentations</b> , FAIC 115
<b>4:00 pm – 5:00 pm</b>	<b>Art Gallery Reception with Coffee and Desert</b> , Wood 223



*CREATE stands for Celebrating Research Excellence and Artistic Talent at Eastern, and it is the university's annual conference showcasing student research and creative activity. The one-day conference will include talks, professional posters, live music, dance performances, art and photography exhibits, documentary films, and panel discussions. CREATE displays the vitality of Eastern as Connecticut's premier public liberal arts institution.*

In support of the University's current strategic plan, CREATE serves to:

- Reinforce high-impact practices such as mentored research and creative projects
- Increase the percentage of students presenting their research and creative work
- Raise public awareness of Eastern's uniqueness and the accomplishments of our students
- Contribute to the intellectual richness of our campus community

Thank you for attending CREATE 2019 and congratulations to all of our participating students for their hard work and academic achievements!

## **2019 CONFERENCE ORGANIZATIONAL COMMITTEE**

Thomas Balcerski  
 Pamela Chiang  
*Brendan Cunningham , Co-Chair*  
 Carlos Escoto  
 Jehoon Jeon  
 Chantal Larose

Kristen Morgan  
*Bryan Oakley, Co-Chair*  
 Fatma Pakdil  
 Afarin Rahmanifar  
 Anya Sokolovskaya

**CREATE PROGRAM 8:00 to 5:00, Friday April 12th, 2019**

Location	Betty Tipton Room	Student Center Theater	Student Center Meeting Rooms	FAIC 115	FAIC Lobby	FAIC Concert Hall
Time						
8:00 - 9:00	Registration (Outside the Student Center Café) and Poster Set-up (Breakfast (Student Center Café))					
8:30 - 10:00	Posters	<b>Kinesiology and Phys. Education Demonstrations</b> (See Program for Details)	<b>Oral Presentations</b> (See Program for Detailed Schedule and Locations)			
10:00 - 10:30	Coffee Break (Student Center Café)					
10:30 - 11:45	Posters	<b>English Performances</b> (See Program for Details)	<b>Oral Presentations</b> (See Program for Detailed Schedule and Locations)			
11:45 - 12:30	Lunch (Student Center Café)					
12:30 - 1:00	Awards and Recognition: Betty Tipton Room					
1:00 - 2:00	<b>Photography Exhibit</b> (See program for Details)	<b>Formal Poster Session: Presenting Students Attending 1:00 - 2:00 pm</b> (Betty Tipton Room)				
2:00 - 3:00			<b>Panel Discussion:</b>  Exploring Memory, Family, and Identity in Memoir (See program for details)		<i>Coffee and Dessert New Media Studies Demonstrations</i> (See Program for Details)	<b>Dance Performances</b> (See Program for Details)
						<b>Spoken Performance</b> (See Program for Details)
3:00 - 4:00				<b>Art and Art History Oral Presentations</b> (See Program for Details)		<b>Music Performances</b> (See Program for Details)
4:00 - 5:00	<b>Art Gallery Reception (Dessert and Coffee ):</b> Student Art Gallery, Wood Support Services Room 223					

## ORAL PRESENTATIONS: Detailed Schedule

Time	MR 107	MR 113	MR 115	MR 217	MR 219	MR 221	MR 223
<i>Moderator</i>	<i>Steve Muchiri</i>	<i>Nicole Krassas</i>	<i>Nicolas Simon</i>	<i>Garrett Dancik</i>	<i>Amy Groth</i>	<i>Jordan Youngblood</i>	<i>Terri-Toles-Patkin</i>
8:30 - 8:45	<p><b>Sarah Gates Williams</b></p> <p><i>Economics</i></p> <p>Wealth Deficit</p>		<p><b>Jacquelin Bessette</b></p> <p><i>Sociology, Anthropology, Criminology and Social Work</i></p> <p>Reproductive justice and incarcerated women</p>	<p><b>Robert Bergers</b></p> <p><i>Computer Science</i></p> <p>Bearer of Awesome Data (BAD) Media: an application for scraping and aggregating media content from the web</p>	<p><b>Stefanos Stravoravdis</b></p> <p><i>Biology</i></p> <p>Analysis of the CYP51 paralogs and their potential role in differential sensitivity to fungicides in <i>Calonectria pseudonaviculata</i> and <i>C. henricotiae</i></p>	<p><b>Sabrina Diaz</b></p> <p><i>English</i></p> <p>Christopher Durang's Comedies of Family Dysfunction</p>	<p><b>COM 260 PRESENTATIONS (10 MINUTES EACH)</b></p> <p><b>8:30 - 8:40</b></p> <p><b>Steven Post, Seth Rohrberg, Matt Robidoux, Spencer Pratt, Harrison Proch</b></p> <p>Public Relations plan for Shawn's Cupboard</p>
8:45 - 9:00	<p><b>Jared Kranc</b></p> <p><i>Economics</i></p> <p>The Economics of Hurricane Evacuation</p>	<p><b>Avantika Tankala</b></p> <p><i>Political Science, Philosophy and Geography</i></p> <p>Born Again Buddhism</p>	<p><b>Spencer Eaton, Andrea Ferrigno, William Malinowsky, Carley Dolan</b></p> <p><i>Sociology, Anthropology, Criminology and Social Work</i></p> <p>Acquiring prescription and non-prescription drugs for recreational use through technology and social media in eastern Connecticut</p>	<p><b>Samuel Steiner</b></p> <p><i>Computer Science</i></p> <p>Using a random forest model to predict inactivity of Github repositories</p>	<p><b>Lauren Atkinson</b></p> <p><i>Biology</i></p> <p>Evaluating the Scorpion Gut Microbiome for Antibiotic Production</p>	<p><b>Amber Albe</b></p> <p><i>English</i></p> <p>From Edging to Gooning: The Rhetoric of Pornosexuality on Tumblr</p>	<p><b>8:40-8:50</b></p> <p><b>Claudia Daley, Brooke Cleary, Mark Billingsley, Courtney Downer, Griffin Archambawll</b></p> <p>Examining PR for Frog Bridge gymnastics</p> <p><b>8:50 - 9:00</b></p> <p><b>Nena Davey, Jenna Delacruz, Madeleine Dalberg, Matt Curtis</b> H&amp;M Company</p>

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9:00 - 9:15	<p><b>Marcus Lim</b></p> <p><i>Economics</i></p> <p>How Does Fake News Effect the Economy</p>	<p>Sara Terry, Brisa Cruz, Lucia Bazzardi, Alparslan Usta</p> <p><i>Political Science, Philosophy and Geography</i></p> <p>Same School Different Experience: The effects of gender on student's perceptions</p>	<p>Majorie Kabemba, Chelsea Fields, Nikita Moreira, Nicole Phillips, Janicia Spruielle</p> <p><i>Sociology, Anthropology, Criminology and Social Work</i></p> <p>A realistic picture of Certified Nurse Attendant (CNA) roles, rights, and responsibilities</p>	<p>Guoyang Wang</p> <p><i>Computer Science</i></p> <p>Tracking flight prices from New York City (JFK) to Shanghai (PVG) on Christmas Day</p>	<p>Alexsis Powell</p> <p><i>Biology</i></p> <p>Phylogeography of an imperiled mountaintop salamander, <i>Plethodon punctatus</i> (Plethodontidae)</p>	<p>Mary Wilterdink</p> <p><i>English</i></p> <p>Teaching Young Adults the Merchant of Venice</p>	<p>9:00 - 9:10</p> <p>Joyce Figueroa, Kay Kagabo, Taylor Garger, Will Lindquist, Stephanie Kula</p> <p>PR Plan for Sal's Pizza</p>
9:15 - 9:30	<p><b>Jeffrey Mathieu</b></p> <p><i>Economics</i></p> <p>Media Influence on the Stock Market</p>	<p>Audrey Rossignol</p> <p><i>Political Science, Philosophy and Geography</i></p> <p>Housing Policy is Education Policy: How Municipal Housing and Zoning Policies Have Segregated Connecticut and subsequently led to Education Inequality</p>	<p>Brianna Prentice</p> <p><i>Sociology, Anthropology, Criminology and Social Work</i></p> <p>Helping or Harming hands: Aid, Development and Humanitarianism in Haiti</p>	<p>Jafet Aparicio, Chase Oliver, Anayancy Ramos</p> <p><i>Computer Science/ Mathematical Science</i></p> <p>Network and Sentiment Analysis of The Chronicles of Narnia: The Lion, the Witch and the Wardrobe</p>	<p>Jonathan Rappi</p> <p><i>Biology</i></p> <p>Modeling human cancer gene interactions in worms: a fos-1 transcription factor inhibits odd-skipped gene expression in <i>C. elegans</i></p>	<p>Jenn Kristoff</p> <p><i>English</i></p> <p>The Ghost of the House: Women, Death &amp; Domesticity in the Short Stories of Charlotte Perkins Gilman</p>	<p>9:10 - 9:20</p> <p>Fatima Landeros, John Oliveira, Christian Lathrope, Jack Matheson</p> <p>Wallingford YMCA</p>



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9:30 - 9:45	<b>Al Viglione</b>  <i>Economics</i>  A Study of Home Bias In International Equity Markets and Key Determinants for the Phenomenon	<b>Leigh Generous, Jacqueline Pillo</b>  <i>Political Science, Philosophy and Geography</i>  Deepening the Divide: The Perception of Political Correctness and its Contribution to Party Polarization	<b>Danielle Gallagher</b>  <i>Sociology, Anthropology, Criminology and Social Work</i>  Animal Cruelty as Represented in the Conn. Post: A Qualitative Content Analysis of the Way Animal Cruelty is Reported in a Popular Ct. Newspaper	<b>Robert Johnson</b>  <i>Mathematical Sciences</i>  Predictive Analytics and the Electorate in the 2018 Midterm Elections	<b>Alma Reyes</b>  <i>Biology</i>  The Effects of Harvester Ants on Plant Diversity in Longleaf Pine Savannas	<b>Samantha Price</b>  <i>English</i>  “Resisting the Grand Narrative of Homelessness: Local Stories from the Windham No Freeze Hospitality Center”	9:20 - 9:30 <b>Courtney Regan, Taylor Danielczuk</b>  TimTam Marketing Case
							9:30 - 9:40 <b>Sienna Roper, Marlon Ribeiro, Jarrett Soltis, Courtney Wright, Adrian PizarroSlevins, Alexander Ramos</b> The Power of Yoga
9:45 - 10:00	<b>Rachel Laguerre</b>  <i>Economics</i>  Economics of Spotify	<b>Morgane Russell</b>  <i>Political Science, Philosophy and Geography</i>  Voting in America: An Intersectional Perspective	<b>Julie Garay</b>  <i>Sociology, Anthropology, Criminology and Social Work</i>  Autoethnography of Food Security in New London, Connecticut	<b>Melat Assefa</b>  <i>Business Administration</i>  A Theoretical Framework of Corporate Social Responsibility as a Driver of Employee Engagement	<b>Haley Grimason</b>  <i>Biology</i>  Jupyter Notebooks for comprehensive 16s rRNA analysis using Mothur, Python, and R	<b>Hannah Hokanson</b>  <i>English</i>  Look How Far We've (Not) Come: Rom-Com Heroines and Shakespeare	9:40 - 9:50 <b>Mark Dunning, Aidan Gagnon, Samson Herbert, Justin Izzarelli, Antonio Jho-Baptiste</b> Public Relations Presentation
							9:50 - 10:00 <b>Hason Peart, Jessica Merluzzi, Lakur Mitchell, Moriya Phillips, Joseph Merheb</b>  PR Presentation for Business
<b>Coffee Break Student Center Café 10:00 - 10:30</b>							

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<i>Moderator</i>	<i>Thomas Balcerski</i>	<i>Ana Funes-Maderey</i>	<i>Mary Kenny</i>		<i>Mitchell Doucette</i>	<i>Miriam Chirico</i>	<i>Terri-Toles-Patkin</i>
10:30 - 10:45	<p><b>Jared Kranc</b></p> <p><i>Economics</i></p> <p>Sensationalism in the Media: Sensible News or Senseless Profit?</p>	<p><b>Fiorella Beccaglia</b></p> <p><i>Political Science, Philosophy and Geography</i></p> <p>The widening ideological divide: Party polarization and biased views among college students</p>	<p><b>Jamie Perry</b></p> <p><i>Sociology, Anthropology, Criminology and Social Work</i></p> <p>Connection between funding and success of students receiving a Special Education in the State of Connecticut</p>		<p><b>Jennifer Croteau</b></p> <p><i>Environmental Earth Science</i></p> <p>Vulnerability Factors of the Fringing Saltmarsh of Napatree Lagoon: Westerly, RI</p>	<p><b>Sara Vega</b></p> <p><i>Performing Arts - Music</i></p> <p>Will the Real Slim Shady Please Stand Up: Eminem's Multiple Musical Identities and How They Challenge Ideas of Authenticity</p>	<p><b>10:30 - 10:40</b>  <b>Ryan Tarko, Andrew Syphers, Andrew Zaino, Maura Stickley, Kendra Walz, Sone Sourignamath</b></p> <p>Information Campaign for Willimantic Brewing Company</p>
10:45 - 11:00	<p><b>Martha Ennis</b></p> <p><i>History</i></p> <p>Mexican Migration in Connecticut: Braceros and Beyond</p>		<p><b>Taylor M. Shea</b></p> <p><i>Psychological Science</i></p> <p>Lesch-Nyhan Syndrome: Etiology and Treatment</p>		<p><b>Kelly I. Bielonko</b></p> <p><i>Health Sciences</i></p> <p>Cultural Experience, Policy &amp; Gentrification: Understanding Substance Abuse in Native American &amp; Native Hawaiian Communities</p>	<p><b>Eve Jimenez-Sagastegui</b></p> <p><i>Women's and Gender Studies</i></p> <p>One Day at A Time: Representations of Latinx Families</p>	<p><b>10:40 - 10:50</b>  <b>Kayla Thomas, Macey Vidal, Jake Verboven, Holden White, Javier Cabrera</b></p> <p>Camp Horizon PR Project</p>
							<p><b>10:50 - 11:00</b>  <b>Aiden Gagno, Antonio Jno-Baptiste, Justin Izzarelli, Samson Herbert, Mark Dunning</b></p> <p>Freedom Service Dogs of America</p>

<b>Time</b>	<b>MR 107</b>	<b>MR 113</b>	<b>MR 115</b>	<b>MR 217</b>	<b>MR 219</b>	<b>MR 223</b>	<b>MR 221</b>
<i>Moderator</i>	<i>Thomas Balcerski</i>	<i>Kristen Morgan</i>	<i>Mary Kenny</i>		<i>Mitchell Doucette</i>	<i>Miriam Chirico</i>	
11:00 - 11:15	<p><b>Cassandra Epes</b></p> <p><i>History</i></p> <p>The Ideal Woman: Sexology, Sex Reform, and Engineering Marriage in Weimar Germany</p>	<p><b>PANEL DISCUSSION</b></p> <p><i>Performing Arts</i></p> <p>Production Design for "The Wolves" 11:00 - 11:45am</p>	<p><b>Colleen Warner</b></p> <p><i>Psychological Science</i></p> <p>Creativity Type and Perceived Stress</p>		<p><b>Harrison W. Dayton</b></p> <p><i>Health Sciences</i></p> <p>Firearms, Dementia, and the Clinician: A Review of Available Counseling Recommendations</p>		
11:15 - 11:30	<p><b>Craig Hanford</b></p> <p><i>History</i></p> <p>The Final Expedition of an Old Explorer: The Role of Hiram Bingham in Peruvian identity and the Tourism Gold Mine</p>		<p><b>Viana Van</b></p> <p><i>Psychological Science</i></p> <p>Diversity Initiative for ECSU Students</p>		<p><b>Alexa Spalla, Mckenzie Maneggia, Ryan Coppinger, Brighton Leonard</b></p> <p><i>Sports &amp; Leisure Management</i></p> <p>New England Sport Management Case Competition</p>		
11:30 - 11:45	<p><b>Dana J. Meyer</b></p> <p><i>History</i></p> <p>Connecticut Revolutionary War Deserters</p>						

11:45-12:30	<b>Lunch (Student Center Cafe)</b>		
12:30-1:00	<b>Awards and Recognition: Betty Tipton Room</b>		
1:00-2:00	<b>Formal poster session with student presenters attending and photography exhibit: Betty Tipton Room</b>		
2:00-3:00	<b>Dance and Music Performances: FAIC Concert Hall</b> <i>See Program for Details</i>	<b>Panel Discussion: <i>See Program for Details</i></b>	<b>New Media Studies Demonstration Coffee and Desert:</b> <i>See Program for Details</i>
3:00-4:00	<b>Art and Art History Oral Presentations</b> <i>(see program for details)</i>	<b>Music Performances</b> <i>(see performance for details)</i>	
4:00-5:00	<b>Art Gallery Reception - Wood Support Center (Coffee and Dessert)</b>		

**Color Coding**

<b>Performing Arts &amp; Art History</b>	<b>Social Sciences</b>	<b>Economics</b>	<b>Communication &amp; Psychology</b>	<b>Business Administration</b>	<b>Sciences</b>	<b>English &amp; Education</b>	<b>Labor Relations &amp; HR Management</b>
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## ARTWORK – ABSTRACTS

(Location – Student Art Gallery, Wood Support Services Room 223 4:00-5:00)

### Tiger Portrait

**Sabrina Aragon**

(Art & Art History)

*Faculty Mentor(s):* Afarin Rahmanifar

The idea behind the piece was to convey the subject using many other animals to show the different values and shapes of the tiger. So that close up you can see all the different animals making up the tiger but when you stepped back you could clearly see the main subject of the tiger.

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### Palm Oil Resistance

**Jacquelyn Gendreau**

(Art & Art History)

*Faculty Mentor(s):* Tao Chen

This poster design focuses on discussing the damages of deforestation due to the high demand for palm oil. Indonesia and Malaysia produce more than 85% of the world's palm oil. These locations are home to more than 80 endangered species, including elephants, tigers and rhinos. Palm oil is found in everyday products, like soap, makeup, snacks and toothpaste. It is found in over half of all packaged items on American supermarket shelves. I believe this issue should be addressed to the public because it is a topic that is relevant to all consumers. By purchasing products with palm oil, we blindly encourage the demand for deforestation. This results in the endangerment, and eventual extinction, of some of the world's most recognizable and loved animal species.

Poster size: 24" x 36", medium: digital print.

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### Head Noise

**Wasan Hayajneh**

(Art & Art History)

*Faculty Mentor(s):* Tao Chen

In this typographic poster design, I intend to bring our attentions to overstimulation which becomes extremely common in everyday life nowadays. Because of easy access to technology, we have everything at our fingertips. This also means that it becomes harder for us to be able to focus on tasks because we are inundated with information, entertainment and communication. We get used to technological overstimulation because the reward synapses of our brains become so accustomed to immediate gratification that we don't stop to think longer about things because we get distracted. This can result in the following phenomenon: extreme black and white moral thinking and sensationalistic politics. This manifests into real life results from electing polarizing political figures down to an inability to debate a topic fairly; inability to focus on long term tasks and goals; (I have not read an entire book in a year!); Mob mentalities and group think, caused by the promulgation of the online echo chamber; anxiety, eye strain, racing thoughts, paranoia. We are just not meant to know or care about so much all at once.

Poster size: 24" x 36", medium: digital print.

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## **Personal Growth**

### **Catherine Najarian**

(Art and Art History)

*Faculty Mentor(s):* Afarin Rahmanifar

This piece is a representation of my emotions during a time of frustration and growth. my goal was to make sure that the viewers did not focus on one spot, but to have their eyes move across the entire piece and notice new details everywhere. The mediums used are, markers, soft pastels, colored pencils and ink.

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## **Renaissance Urie**

### **Erika Groleau**

(Art and Art History)

*Faculty Mentor(s):* Terry Lennox

This digital illustration was created as a class assignment where we were prompted to create a caricature depicting a celebrity. We were encouraged to find examples of other caricature artists and get a sense of where we want to go creatively in our project. I immediately knew my subject would be the front man of the band “Panic! At the Disco,” Brendon Urie. He is an extremely talented performer and has even starred in a leading role in a Broadway musical. The band, as a whole, can really put on a show but Brendon has always been the one to steal the spotlight. From his good looks to his quirky dance moves you can’t help but have a good time while watching him perform. Choosing him for this illustration was an easy decision and it made it that much more enjoyable to complete. I went with a hand-drawn aesthetic for my piece because it is something my eye is attracted to. Doing the jacket was an important element so drawing the pattern was complicated but successful.

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## **Destroy Rock'n Roll**

### **Wasan Hayajneh**

(Art and Art History)

*Faculty Mentor(s):* Lora Lee

This is a concept for a video game that I am developing. This game stars two musicians from the late 60's who sold their souls to the devil for eternal youth and immortality. I was inspired by adventure games such as Telltale’s Sam and Max, which primed me on the elusive art of subtext in storytelling, as well as shows like Twin Peaks, The Good Place and Bojack Horseman, which boast absurd, surreal scenes that make you think- and of course Hewlett and Albarn’s Gorillaz, the original virtual band. I started developing this concept when I was seventeen. I picked it back up again recently during a video game script writing course, and began to create more detailed and definitive character sheets in Photoshop. I modeled the polygonal characters and environment in 3D program Autodesk Maya. I painted the character skin textures in Photoshop. The kitchen is one section of what would be a much larger game environment. I see the kitchen as a neutral ground for these two very polarized, territorial characters to interact.

My goal is to develop this project further, into a 3 season episodically structured adventure game. Video games are just beginning to be explored as a storytelling art form, and I want to follow in the steps of such game development giants as Telltale Games and Dontnod.

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## **Why Hasn't Everything Already Disappeared?**

**Wasan Hayajneh**

(Art and Art History)

*Faculty Mentor(s):* Terry Lennox

This piece is a caricature illustration of Bradford Cox, the front man of the band Deerhunter. The band's most recent album deals with the post-nostalgia hangover of American culture, and Cox's most recent photographs show him in a cowboy-style getup. I wanted to paint him in a style that is reminiscent of some of the cartoons I grew up with, with the tonal values inspired by Mort Drucker and the exaggerated flow of Al Hirschfield. I started this piece in Adobe Illustrator and then moved it into Adobe Photoshop for paint over.

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## **Polish-Lithuanian Commonwealth**

**Zuzanna Jablonska**

(Art and Art History)

*Faculty Mentor(s):* Carol Schwartz, Lora Lee

This piece was created for my Scientific Illustration class. Our assignment was to create a historic scene depicting a civilization in a day to day environment. I decided to focus on my own personal heritage by choosing the Polish-Lithuanian Commonwealth era. The most common food source for these people was wheat, and it was also one of their main trading resources. This is why I chose to depict a woman standing in a field, looking out and scanning the entire area. Through her, perhaps the viewer can place themselves in her position, helping to introduce us to the whole scene. The man standing to the left of the image is a nobleman wearing traditional Polish clothing. He is stood next to a horse, signifying the importance of horses as a primary source of transportation. In the distance you can see a city, perhaps the destination for the nobleman. A road must lead somewhere, and a distant city seemed like the perfect solution to this mystery. The image was created entirely in Adobe Photoshop. I began with a sketch that rapidly turned into more detailed line art. I subsequently played with the colors, usually using a reference photo to help create something more natural. Finally, I collapse all the layers in order to work on top of everything I've created and begin to paint over it, adding as much detail as possible.

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## **Lenny and the Sea Monster**

**Maria J Michaud**

(Art and Art History)

*Faculty Mentor(s):* Lora Lee

These illustrations were created in Graphic Design II, for a children's book called "Lenny and the Sea monster". As the illustrator, I designed the characters for the book and made sure the illustrations fit the text. The book contained a colorful scenery, making the scenes kid friendly. As for the story, it did have a slightly dark undertone with the characters fearing a monster is coming after them. To only discover that it is a sea turtle covered in trash. This is to show kids the dangers of pollution and understand not everything is as it seems. The illustrations were created in Adobe Illustrator with a combination of vector shapes and textures.

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## **Purple Dreaming**

**Angel Enrique Negrón**

(Art and Art History)

*Faculty Mentor(s):* Terry Lennox, Lora Lee

This piece was created in Illustration III as a project to create a music album cover. At the time, I was experimenting with my style of art. I mainly created very simple illustrations with not much detail. I wanted to push myself out of my comfort zone, and create something that is out of the ordinary for myself. Sad hip-hop/emo rap music influenced the creation of this cover. Sad music spoke to me. I created a 3 way pull between love, money and drinks. The three things that can lead someone to their doom. When you have money, you find love, when you find love you find heartbreak, when you find heartbreak you find drinks. Something that I noticed rappers tend to mix themselves in to a lot. The doors are self-explanatory, they present the future, or an exit. To add the icing to the cake, I added the person to the middle of the illustration to represent the artist being lost, and can't decide whether to take the route of love, money or drinks. This piece was created digitally in ClipStudio.

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## **Next-Level Fierce**

**Mekaila Stefano**

(Art and Art History)

*Faculty Mentor(s):* Terry Lennox

Tyra Banks' prolific career as a model, actress, television host, photographer, and producer has cemented her as a recognizable figure within the entertainment industry across and beyond the United States. It's no wonder that when I was assigned the task of creating a caricature for print in a hypothetical magazine, Tyra was one of the first celebrities that came to mind. She is both glamorous and goofy, with a face that exemplifies unique beauty. As a long-time fan of her seminal television series, America's Next Top Model, I wanted to create an image that was both an overstatement of her strongest features, and a flattering portrayal. As recognizability was a main goal of mine, I actually started by heavily exaggerating the chin and cheek bones, minimizing the eyes to recreate her signature "smize," elongating the forehead, and exaggerating the way her top lip thins out when she smiles showing her teeth. I digitally painted the final caricature in the digital illustration application Procreate. Once the figure and her stage were complete, I added some finishing elements to the background in Adobe Illustrator. After all, whether it's as a model, or as the judge of a major modeling competition, Tyra is always camera ready. I hope that the final product of this assignment is one she wouldn't send me home over.

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## **Dream of Doors**

**Nina Yilmaz**

(Art& Art History)

*Faculty Mentor(s):* Afarin Rahmanifar

Dream of Doors is mixed media work using watercolors, inks, pencils, and markers. The project guidelines were to create a crowded composition. I achieved this by filling the space with multiple figures, greenery and architecture. A dream like state is created by showing multiple perspectives and overlapping the subjects, as if they are thoughts flowing together.

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**Cloudy Koi****Alexandria O'Brien**

(Art&amp;Art History)

*Faculty Mentor(s):* Afarin Rahmanifar

A crowded composition using ink, graphite and charcoal that creates a soft, dream-like atmosphere. The koi fish dance off the edges of the page in-between clouds, only allowing just enough of themselves to be seen in order to entice the viewer into the piece.

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**Fractured Beauty****Amber Dickinson**

(Visual Arts)

*Faculty Mentor(s):* Robert Greene

Fractured Beauty was a study in the subtractive process of relief wood carving. The relief was created by the process of staggered wood lamination to create a single solid block from poplar wood. It was then rendered into its final product as a realism representation of the delicate form of a rose. This was achieved by taking away unneeded wood while pushing my skill level in hand carving using a grinder, chisels and a small rotary tool. The project pushed my knowledge of carving by creating the delicate petals and leaves as thin as possible without taking away too much to create the wanted image. Fractured Beauty challenged me in the process of exploring negative space to its limits as the rose is fully rendered though it is still connected to a base to create a high relief versus a sculpture. One of the limitations of this process was the depth of which I could carve into the rose with the selected tools and still creating the visual depth needed to make the rose look like I wanted. Over all, Fractured Beauty pushed me in critical ways to explore, problem solve and successfully create an artwork that showed my abilities and skills at wood carving and thinking in a subtractive manner.

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**A Perspective Outside Your Average Frame****Brianna N. Prentice**

(Visual Arts)

*Faculty Mentor(s):* Blake J. Shirley

The photographs I've selected juxtapose each other. Half of them capture wilderness and half of them are human-made inventions. The photographs of nature include a variety of landscapes, seascapes, florals, and animals. The photographs of human-made inventions are specifically related to light. Some of the photographs are geometric while others are organic. A common thread amongst all my photographs is the technique of intentionally capturing the subject from an unusual viewpoint. This is achieved by changing the angle, placement of the subject in the frame, zooming in or zooming out. This is an intentional choice to encourage the viewer to appreciate hidden beauty they would normally overlook. For those reasons, I believe my photography stands apart from other applicants. Thank you for your time and consideration.

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**Mickey Mouse Stained Glass****Amanda Maloney**

(Art and Art History)

*Faculty Mentor(s):* Afarin Rahmanifar

I decided to make a piece featuring Mickey Mouse because it was his 90th birthday celebration. The first piece was made with magazine pieces and the second piece I based on the first piece to decide what colors should go in what place. The stained glass represents the many forms Mickey had to take before becoming the character we all know and love today.

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## DANCE PERFORMANCES

(Location: FAIC Concert Hall 2:00 – 2:30)

### Traditional Korean Dance- Salp'uri

#### **Hannah Avena**

(Performing Arts- Theatre & Music)

*Faculty Mentor(s):* Alycia Bright Holland, Okon Hwang

Salp'uri is a type of Korean traditional dance. It is a solo dance often performed by a woman, and is closely tied to shamanism, the belief that every natural phenomenon and living thing possesses a spirit. Also referred to as the exorcist dance, this dance was originally performed to commemorate the soul of a deceased individual. Unlike Western dance, where there is a constant upward reach towards the sky and an emphasis on held poses and lines, Korean dance is grounded, with a focus on the earth. The dancer is typically in constant motion as well, moving through positions rather than arriving at them. In the salp'uri dance, there are many alternations between moments where actions are suspended, and hurrying to resolve the suspension with a series of rapid steps. There is an emphasis on the arc, as can be noted from the rounded sleeves of the costume, and the rounded tips of the Korean traditional socks. Salp'uri is still very popular today, and embraces the essence of han, which may be translated as sorrow, bitterness, or unsatisfied desire. Korean traditional dance is heavily focused on breath. Movement is initiated in the chest area with a quick inhalation of breath, causing the spine to lengthen and the shoulders to rise. There is an emphasis on verticality as well, with a constant alternation between up and down movements. Dancers also caress the floor with their feet, as if walking on something delicate. Overall, Korean dancers strive to achieve an inner spiritual quality of charm or grace, and a feeling of animation.

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### Diasporic Distillations

#### **Jackie Verian, Tayla Bogle, Ishah Azeez, Gabi Robertson**

(Performing Arts-Theatre)

*Faculty Mentor(s):* Alycia Bright Holland

As a quartet we will present “infor-mances”, performances that inform the audience about the diversity of the African landscape, through two selections from Western Africa: Coupe Decale is a dance from the Ivory Coast that celebrates lavish lifestyle in a time of hardship and trial. With the Civil War happening in the Ivory Coast from 2002-2007, people of the Ivory Coast fled to France where this dance culture emerged and spread. In a time of war and despair, this dance culture began to spread. At this time of war and discord, this dance was a way for people to escape. It is a modern dance style and has expanded to a point where it is even considered a way of life.

Bata dance is a traditional dance that is from southwestern Nigeria, West Africa and was originated from the Yoruba people. This dance can be performed in festivals or as a dance performance. Bata dance is an entertaining and energetic dance that is performed by professional dancers and is accompanied with music, chants, and songs. The Bata dance is not fully achieved without the beats from the Bata drum, there is a set of three Bata drums which are Iya Ilu (the mother or lead drum), Itotele, and Okokonlo (the smaller drum). The meaning behind this dance is that Sango, the Yoruba god of thunder who is to be believed to be athletic and overly acrobatic. Through the visual presentation, we will be discussing the origins of where the dances came from, how they originated and why it is important to the respective cultures.

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## **Transitioning from Dancer to Choreographer**

### **Zoe Czerenda**

(Performing Arts)

*Faculty Mentor(s):* Alycia Bright Holland

Dance Makers or Choreographers all have different approaches to creating a work of art. As a seasoned dancer, I approached choreographing this piece by using improvisations to find new movements from my body and apply them to a song (Changes by XXXTENTACION). This technique was influenced by Doris Humphrey's pioneering work "musical visualization". When I heard this song, I immediately felt a connection to it and I wanted my motions to reflect my emotions and impact others the way the music impacted me.

"Changes" is about the grieving stages of a heartbreak. At first it comes as a shock, and we try and keep ourselves together. The beginning is slow and controlled movement. Eventually we hit a breaking point and need to let out all the emotions we have been suppressing. This is when the movements, in expressing our emotions, become more out of control and sporadic. The last stage involves slowly pulling ourselves together and the process of learning to repair one's heart in preparation to again receive love. I repeat some of the movements done at the beginning of the piece to show that, once again, we will rise.

In addition to my process of choreographing, I chose to make this piece a duet and have the two parts mirror each other at the outset, up until the dancers start to 'lose' themselves. This hopefully provides insight into the way in which people suffering from similar kinds of heartbreak can process their experience differently.

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## **Tet Ansanb: Yankadi/ Makuru**

### **T. Venlo Odom, Enock Petit Homme**

(Performing Arts)

*Faculty Mentor(s):* James Holland

Tet Ansanb (first performed in 2018 as part of Eastern's Spring Dance Concert, Body + Image), means "heads together" in Haitian creole language, and thus signifies unity. The piece features two traditional songs from Guinea, West Africa (Yankadi and Makuru), arranged and performed on a combination of traditional and contemporary instrumentation. Tet Ansanb springs from a desire to provide a glimpse of the broad influence of West African musical forms and instrumentation on music and instrumentation from around the world. While such influence is well known, it is far less common to hear traditional West African songs, such as Yankadi and Makuru, interpreted on contemporary instruments.

T Venlo Odom (Music Performance) performs on a three-piece drum kit and Enock Petit Homme (World Languages) performs on an electric bass, while James Holland performs on a djembe, one of the the traditional instrument associated with the songs. Both Venlo and Enock have studied traditional West African music under the direction of James Holland for the past two years, and Tet Ansanb offers an interesting interpretation.

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## OTHER PERFORMANCES

### Nothing Happened, Everything Happened

#### **Kaitlyn Melninkaitis**

(English)

*Faculty Mentor(s):* Reginald Flood

Location: Student Center Theatre 10:30-11:45

This interactive presentation will discuss the concepts and ideas that came together to create Nothing Happened, Everything Happened, an original play written as part of my senior capstone. Nothing Happened, Everything Happened is a two-act play that tackles the difficult topic of sexual assault and how it is handled within the court system. When Allie Kane is taken advantage of by her boyfriend, Jared Harper, at a college house party, she decides to bring him to court in hopes that she can receive justice for what was done to her. The audience sees not only what happens in the courtroom, but also what happens at the party and the few days afterwards, making them aware of the truth behind the night that is being put into question. The presentation will showcase how the concept of Nothing Happened, Everything Happened was able to be produced onstage here at Eastern Connecticut State University. This will include the writing process, auditions, the rehearsal process, and the performance itself. There will also be an interactive piece where audience members will get the opportunity to perform cold reads of selected scenes from the play, similar to what was done for the auditions.

### Dedecus

#### **Matt Bessette**

(English)

*Faculty Mentor(s):* Reginald Flood

Location: Student Center Theatre 10:30-11:45

This presentation will describe the various dramaturgical components that comprised the research, preparation, and writing processes for my senior capstone in English (the ENG 499 directed research project). In my case, this takes the form of an original script titled “Dedecus,” the first part of a trilogy of one-act plays in verse. Part I of “The Duritya Trilogy” tells the tragedy of a Medieval European king who weds into royalty and redeems a fictional crime-ridden country, only to have his family discover through the reemergence of an old nemesis that it was he who long ago worked to overthrow the government in the first place. One of the trilogy’s themes is individuality, so each of the thirteen characters bears a unique Latin name, tragic flaw, Jungian archetype, metrical form, rhyme scheme, and stanza type. As the series progresses (which spans several decades), Duritya, the aforementioned king’s daughter and the trilogy’s protagonist, is the only character to survive each play; for one reason or another, everyone around her falls victim to their personal hamartia. Her survival and ultimate triumph over her male counterparts illustrate one of my goals: subverting the hackneyed romantic conventions of “men are heroes, women are objects, and villains are one-dimensional.” Furthermore, to emphasize Duritya’s character arc (involving the cyclical nature of the characters’ self-fulfilling demises), the scenic locales of the first two plays are organized in a palindromic structure (ABCDCBA). This structure will conclude after the second play, as the cycle is broken and Duritya finds contentment

### **In Conversation . . .**

**Austin Washington, Karis Burke, Lauthell Labonte**

(Performing Arts)

*Faculty Mentor(s):* DeRon S. Williams, Alycia Bright Holland

Location: FAIC Concert Hall 2:30 – 3:00

On March 26, 1964, Martin Luther King Jr. and Malcolm X, two of the most well-known individuals of the 1960s, met on Capitol Hill while attending the Senate debate on the Civil Rights Act of 1964. Although fighting for the same goals using different methods, this would be the only time they would ever meet. Malcolm X and Martin Luther King Jr. adhered to the overall philosophy of this era by fighting for the injustices presented to blacks through engaging their strong oratory prowess as a form of art to appeal to blacks to be active in the face of adversity and demand what is rightfully theirs. Both King and Malcolm were young and charismatic leaders, exuding a lot of confidence in the public gatherings they attended, thereby drawing huge, almost fanatical followings. Despite their common goals of demanding for equality, the styles of the two men were interestingly divergent, and their philosophies for achieving the stated purpose of fighting injustices equally different.

In this presentation, the students will portray the iconic figures and deliver their speeches. Through dance and music, they are linked through dance and music.

## **NEW MEDIA STUDIES DEMONSTRATIONS**

**(Location: FAIC Lobby 2:00 – 3:00)**

### **Motion Capture for 3D Animation**

**Aubrie Curcio, Wasan Hayajneh, Emma Kellermann, Rebecca Loh, Tristan Perez, Zachary Parisella**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft, Kristen Morgan

Our group will present a short film, developed using motion-capture technology, as well as demonstrate the equipment and process used to capture performance. Our three-minute noir-esque film shows a 3D-rendered detective frog (the frog being a symbol of Willimantic) performing motion-captured actions such as drinking a martini, smoking a pipe and dancing. To create our film, we utilized a variety of motion capture equipment and animation software, including Motive, Blender, Adobe Premiere and After Effects, and Pro Tools for audio. This project was created during the 2018 New Media Studies Summer Research Institute, in which we were also introduced to the fundamentals of animation post-production with an introduction to character visual design, voice-over recording, and the use of diegetic sound in an animated environment.

### **Arduino Motor Manipulation**

**Andrew Hoffmann**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft

This work uses an Arduino microcontroller board a small microcontroller circuit board that allows the designer to transmit code to the microcontroller to control physical tools such as motors and sensors. The Arduino board in this piece drives a motor. The motor is directed by the code uploaded to the board, which actively generates how fast the motor spins, when the motor changes spin direction, and the time between direction changes. The motor is attached to a rod which strikes wind chimes in unanticipated patterns due to physical movement of the chimes and the motor movement, creating various configurations of sound. A small microphone is hung over the chimes to amplify the sound produced by striking the chimes.

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## **Suitcases**

**Emma Kellermann**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft

This interactive sculpture revolves around the theme of travel. The sounds produced are miniature soundscapes that each focus on a different mode of transportation. The visual and physical portion of the sculpture features different materials used in travel, all lit with various hues of light. The lights that feature in the sculpture are algorithmically controlled by code written in Max and communication to the lights through a USB to DMX interface. Spectators of the sculpture can interactively mix the soundscapes together and control their volumes via a web-connected interface found on a tablet by the sculpture, which speaks to a computer that outputs the sound. The interface was developed in Max using the MIRAWeb library.

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## **S.T.R.I.N.G., 2018**

**Rebecca Loh**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft

S.T.R.I.N.G is a visually driven sound focused fixed media piece. It is intended to question societal conformity and individuality while focusing on the trauma that we have experienced in life.

How much of us has been lost trying to mold ourselves into what is perceived as normal?

Is being 'civilized' worth trivializing our pain?

The Heaven's Gate cult was a partial inspiration as a portion of Marshall Applewhite's speech was used. This is to represent the subtle cult-ish ways of our environment of forcing normality upon us along with the influence of the government feeding us ways on how to be 'socially accepted'.

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## **Sine Tone Octave Synthesizer/Generator**

**Sean Nixon**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft

This work involves an interactive and algorithmic controlled synthesizer which generates up to four different sine tones simultaneously. The listener can press the keys on the QWERTY key board and move a slider on screen to control the synthesizer – instructions for more advanced control are onscreen below the synthesizer control itself. Next to the synthesizer is an algorithmic generator which will play the synthesizer automatically with three of the channels going up and down the different integer octave ranges and one channel being completely random. Installation guests can also play the synthesizer while the algorithmic generator is playing, allowing the generator to accompany their performance.

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## **The Development of a Virtual Reality Environment in the Horror Video Game Genre**

**Alex Sarmiento**

(New Media Studies)

*Faculty Mentor(s):* Travis Houldcroft

A hands-on exploration of a virtual reality environment developed completely by Alex Sarmiento. The environment sits in the gaming genre of first-person thriller or horror. The entire project was developed in Unreal Engine. In the environment, the player walks through a dimly lit empty house, picking up and

implementing a flash light in order to navigate the house. The environment was designed to accurately reflect a home, but also instill a feeling of uneasiness, and the sense that something horrific happened at the house in the past.

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## **KINESIOLOGY AND PHYSICAL EDUCATION DEMONSTRATIONS**

**(Location: Student Center Theatre 8:30 – 10:00)**

### **Development and implimentation of a augmented reality sandbox**

**Nick Rascati, Dale Keller**

(Kinesiology and Physical Education)

*Faculty Mentor(s):* Greg Kane

The purpose of this project was to create a unique opportunity to infuse physical activity and technology into a play activity for children. The result was the creation of an augmented reality sandbox. The group's initial role was to project and manage the various stakeholders at Eastern. However, this evolved into learning new technologies as well as developing lesson plans. To begin, we first met with Eastern's Information Technology staff to outline the project and seek their expertise in identifying the appropriate computer hardware and special operating system required for the custom software. Media Services was then consulted on the correct peripherals as well as calibration of the technology. Finally, Eastern's Wood Shop along with Facilities built the actual table that will at the end of the project be donated to the Center for Early Childhood Education. While these departments were putting together the augmented reality sandbox, the group spent time developing lesson plans for the implementation of the augmented reality sandbox. In addition, the group explored 3D printing technology to create objects for the sandbox. This has developed into combining lesson plans with 3D printed objects into activities that connect students to the local community. The presentation for CREATE will overview the entire process, identify relationships and partnerships, technological hurdles, present lesson plans, and provide the audience an opportunity to play with this new technology.

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### **Mood alterations as a result of participation in a Beat Saber virtual reality game**

**Kayla Santos**

(Kinesiology and Physical Education)

*Faculty Mentor(s):* Greg Kane

Virtual Reality (VR) has become an increasingly more accessible consumer based electronic entertainment device. With the development of the Oculus Rift, the HTC VIVE, Microsoft Hololens, and Google Cardboard, consumers can now easily interact in a virtual hyper realistic environment. However, the effectiveness of these games at creating alteration similar to traditional physical activity based games is not well understood. This project is structured to test an Oculus Rift VR game, specifically named Beat Saber, in its ability to affect the participants in a manner similar to which physical activity does. Beat Saber is a virtual reality rhythm and activity game where the object is to hit virtual boxes to a music sound track. Data for this study is gathered through a pretest and posttest Profile of Mood States (POMS) of their Beat Saber VR experience and a non-stress inducing VR experience. Supplementary data will include the subjects receiving pretest and posttest monitoring of heart rate, blood pressure, and pulse oximetry. Results and findings will be presented as well as an opportunity to participate in a Beat Saber virtual reality game.

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## ORAL PRESENTATIONS

### Cultivating an Identity

**Morgan Bibbins**

(Art & Art History)

*Faculty Mentor(s):* Gail Gelburd

Portraits are subject to the sitter and artist's preference; they direct the narrative. The artist's vision provides the means of persuasion in a political portrait which furthers the message and function of the art. Specific techniques for portraiture, such as naturalism, imposes new meaning behind the objects, the faces, and the narrative. The artist's bias and the sitter's preference can form a bridge to their artistic vision. They seek to portray the sitter in the most favorable light. The role of the presidential portrait is to visualize their legacy and thereby show the development of American democracy. Artists of early presidential portraits were rearranging a European visual language to fit a shifting audience, rather than attempting to amalgamate different cultures. Although Gilbert Stewart's portrayal of George Washington has more creative license than Charles Willson Peale's portrait, for example, both are saturated in European portraiture iconography. In contrast, portraits of President William Jefferson Clinton by Simmie Knox, or Chuck Close, show a slight progress towards post-colonial interpretations. This shift gradually forms a new identity outside of European influences. The dramatic transition to a post-colonial period, is seen in Kehinde Wiley's Barack Obama portrait. I will discuss Wiley's choice of form and how his iconography deconstructs European nobility portraiture iconography and removes them from the center of the narrative.

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### Music Video as Performance Art

**Angel Bleggi**

(Art & Art History)

*Faculty Mentor(s):* Gail Gelburd

In performance art and music videos, artists use non-traditional mediums to create a fully engaged environment that allows the viewer to see from an alternative perspective. Through incorporating signifiers that question societal patterns, performance art takes on the role of questioning the public's beliefs with a contemplative narrative. These questions are directed towards the viewers to provoke thought and meaning surrounding these issues. In the 21st century age of the mass media, artists began integrating contemplative narratives into music videos. Artists, such as, Lady Gaga and (focused on in this study) Ariana Grande have taken on the role of a performance artist in order to create conversational dialogs that encourages society to reflect on change. One of the largest platforms to reach the public are music videos and how they contribute to the growth of art and art's role within today's society. Ariana Grande directly addresses feminist issues in her music video 'God Is A Woman' with layers of semiotics that show the strength and importance of women. Grande also references the criticism she gets being a woman in front of a large opinionated audience. This kind of performance allows the audience to see through the alternative perspective of a woman who wants change. The impact from music videos has created a new platform for performance artists.

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## **Analysis of the CYP51 Paralogs And Their Potential Role In Differential Sensitivity To Fungicides In Calonectria Pseudonaviculata And C. Henricotiae**

**Stefanos Stravoravdis**

(Biology)

*Faculty Mentor(s):* Jonathan Hulvey

Fungal pathogens threaten the productivity of commercial agricultural crops. *Calonectria pseudonaviculata* and *C. henricotiae* are two closely related fungal species responsible for the development of boxwood blight disease in ornamental shrubs (*Buxus* spp.) in the U.S. and Europe. Previous studies have shown the latter species, which is restricted to Europe, to be less sensitive to select demethylation inhibitor (DMI) fungicides than the former. An unpublished study has shown that isolates of *C. pseudonaviculata* displayed an early stop codon in one of three CYP51 paralogs known to confer resistance to fungicides, CYP51A. In this study we have analyzed the CYP51 paralogs for polymorphism in 25 genomes, representing geographically disparate populations of *C. pseudonaviculata* (18) and *C. henricotiae* (7). The widespread prevalence of the early stop codon in isolates of *C. pseudonaviculata* is a novel discovery for fungi and could have consequences for the evolution of resistance to DMI fungicides in this invasive pathogen.

## **Evaluating the Scorpion Gut Microbiome for Antibiotic Production**

**Lauren Atkinson**

(Biology)

*Faculty Mentor(s):* Barbara Murdoch

Antibiotic resistance, the ability of bacteria to resist the effects of antibiotics, has been evolving quickly among pathogens that were previously easily controlled. Without effective antibiotics, routine surgeries and minor infections can be deadly. Scorpions are a unique potential source of antibiotics, since they have an ancient lineage that has coevolved with terrestrial pathogens for about 350 million years. Scorpions are routinely exposed to potentially deadly microbes since many of their prey, which include mice and insects, are vectors for dangerous pathogens. The microbiome, or collection of microbes living in an organism, has been shown to play a critical role in the immune systems in animals, including in those of arthropods. Most current antibiotics were isolated from other bacteria. We hypothesized that the scorpion microbiome includes bacteria that produce antimicrobial compounds. To test this hypothesis, we used culture-based techniques to isolate bacteria from the abdominal cavities of *Smeringurus mesaensis*, the dune scorpion. Isolates were identified by amplifying and sequencing the 16S rRNA gene. Co-cultures tested for antibiotic production against safe relatives of the ESKAPE pathogens, the six most common antibiotic-resistant pathogens. From 102 clonal isolates, 14 different species were identified. For antibiotic testing, 11/23 isolates tested showed a zone of inhibition, indicating antibiotic production. Our results indicate that the scorpion microbiome does include antibiotic-producing bacteria and should be examined further. Our project continues with techniques that do not rely on culturing, but rather are sequence-based.

## **Phylogeography Of An Imperiled Mountaintop Salamander, *Plethodon punctatus* (Plethodontidae)**

**Alexsis Powell**

(Biology)

*Faculty Mentor(s):* Matthew Graham

The Cow Knob salamander, *Plethodon punctatus*, is a lungless amphibian known only from a few isolated Appalachian mountaintops that straddle the Virginia and West Virginia border. Due to habitat fragmentation, low abundance, and this narrow distribution, West Virginia designated *P. punctatus* as “Critically Imperiled.” The species does not occur at low elevations, so populations on different mountain ranges are highly isolated. But have these populations been isolated long enough to represent distinct evolutionary groups? Should resource managers treat *P. punctatus* as a set of unique management units? To address these questions, we

collected tissues samples from throughout the species' range and sequenced two mitochondrial genes. Phylogenetic analyses of mitochondrial data revealed two clades that diverged around 0.9 Mya; a northern clade and southern clade. Haplotype networks indicate that the northern clade has experienced recent demographic expansions, perhaps in response to Pleistocene climate fluctuations. Although insightful, mitochondrial genes only track maternal gene genealogies, and are sometimes misleading due to the lineage sorting process. In this contribution, we compare the results from mitochondrial DNA to new data collected from a nuclear marker, thereby addressing whether *P. punctatus* should be protected as a set of management units.

### **Modeling Human Cancer Gene Interactions In Worms: A Fos-1 Transcription Factor Inhibits Odd-Skipped Gene Expression In *C. Elegans***

**Jonathan Rappi**

(Biology)

*Faculty Mentor(s):* Amy C. Groth

Cancer is a leading cause of death worldwide, yet much remains unknown about this disease. Human odd-skipped genes (OSR1/OSR2) are poorly studied genes that play roles in tissue and disease development. Decreased expression of OSR1 has been shown in some cancers, including lung, gastric and renal cell cancer. Identification of genes that control OSR1 expression will provide information about cancer development. Genes that control the expression of other genes are known as transcription factors. Because these genes have been preserved throughout evolution, model organisms can be used to study interactions between them. We utilized a microscopic worm, *C. elegans*, to study odd gene expression. Worms have two odd genes, odd-1 and odd-2. To identify transcription factors that regulate odd genes, we knocked down transcription factors using RNA interference, a process that destroys mRNA that matches a gene sequence, so no protein can be produced. Gene expression was visualized using worms with either odd-1 or odd-2 fused to green fluorescent protein. Cells that fluoresced under confocal microscopy indicated expression of the odd gene. From 23 transcription factor genes tested, we identified eight, including fos-1, that changed odd gene expression when knocked down, compared to a control. Upon fos-1 knockdown, odd-2 expressed in the reproductive tissue, where it is not normally expressed, indicating that fos-1 inhibits the expression of odd-2 in that tissue. Because the human Fos and OSR1 genes are involved in cancer development, these experiments could eventually lead to a genetic test or therapeutic target that could improve cancer detection/treatment.

### **The Effects of Harvester Ants on Plant Diversity in Longleaf Pine Savannas**

**Alma Reyes**

(Biology)

*Faculty Mentor(s):* Brett Mattingly

The foraging behavior of seed-harvesting ants can facilitate plant dispersal and recruitment, thereby impacting local patterns of plant diversity. However, the manner in which agricultural legacies alter the strength and direction of consumer effects on plant diversity is largely unknown. Here, we evaluate differences in the abundance and diversity of plants growing on mounds of seed-harvesting *Pogonomyrmex badius* at 20 remnant and post-agricultural sites located in longleaf pine savannas at Fort Bragg, North Carolina. At each site, we surveyed vegetation on a pair of active and abandoned *Pogonomyrmex badius* mounds to evaluate the effects of mound abandonment on plant recruitment in both remnant and post-agricultural habitat. For both land-use categories, plant density was greater on abandoned mounds than on active mounds. Likewise, plant species richness was greater on abandoned mounds. However, the composition of plants growing on abandoned mounds differed substantially between the two land-use categories. At remnant sites, abandoned mounds largely yielded species indicative of undisturbed plant communities, whereas ruderal species indicative of disturbed habitats were more abundant among mounds at post-agricultural sites. These results indicate that *Pogonomyrmex badius* foraging behavior can affect local patterns of plant diversity and that the nature of these effects are contingent on historical land-use activities. Evaluating the role of historical land use in mediating consumer effects on diversity can provide novel

insight into the factors shaping plant communities in human-modified landscapes.

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### **Jupyter Notebooks For Comprehensive 16s Rrna Analysis Using Mothur, Python, And R**

**Haley Grimason**

(Biology & Computer Science)

*Faculty Mentor(s):* Barbara Murdoch, Garrett Dancik

The analysis of metagenomic data involves sequence assembly of 16S rRNA sequencing data and clustering the sequences into Operational Taxonomic Units (OTUs), which can then be compared across samples. The bioinformatics tool mothur provides a pipeline for this analysis, by processing 16S rRNA sequence data and outputting a table containing the identified OTUs and their taxonomic classification. However, one limitation of mothur is that it does not allow for visualization of results. As a command line tool, mothur can also be difficult to use at first. In this project, we developed a collection of Jupyter Notebooks for identifying OTUs from 16s rRNA sequencing data. The Jupyter Notebooks, which run in a standard web browser, use mothur for data processing and the R package phyloseq for visualization and analysis. We decided on Jupyter Notebooks as a platform because they allow for reproducible research and make metagenomic data analysis more accessible for biologists. We demonstrate the Jupyter Notebooks by analyzing 16S rRNA collected from the tail and telson regions of *Hadrurus arizonensis* and *Smeringurus mesaensis*, both scorpions found in North American deserts. Identification of microbes in the telson are of particular interest because of their ability to survive in the precarious environment where scorpion venom is stored. Using the Jupyter Notebooks, we compare bacteria between the telson and tail region as well as between species.

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### **A Theoretical Framework of Corporate Social Responsibility as a Driver of Employee Engagement**

**Melat Assefa**

(Business Administration)

*Faculty Mentor(s):* Niti Pandey

Corporate social responsibility (CSR), or the belief that organizations have moral and ethical obligations to stakeholders beyond profit maximization, is an important domain of business research today. While this research has extensively examined the impact of CSR of the “triple bottom line” – people, plant, and profits, very little has been done to study the impact of such practices on the employees within these organizations. In response to the increasing calls for understanding the impact of CSR on employees, this research proposes a theoretical model of employee engagement as driven by perceptions of CSR practices. Using self-determination and justice theories, this study proposes that congruence between employees’ moral values and their perceptions of the impact of their firm’s CSR practices will drive their engagement.

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### **Bearer of Awesome Data (BAD) Media: an application for scraping and aggregating media content from the web**

**Robert Bergers**

(Computer Science)

*Faculty Mentor(s):* Garrett Dancik

In this day and age, social media is a prominent news source for many individuals. The benefit of social media as a news source is that it automatically aggregates different sources into one continuous feed. However, this has important limitations: anyone can present themselves as a valid news source, social media websites knowingly employ tactics to manipulate their users, and news feeds are often filled with clutter. In this project I developed a web application named Bearer of Awesome Data (BAD) for aggregating news sources whilst mitigating the drawbacks of social media news aggregators. BAD is a program that scrapes RSS feeds produced by news sources or prominent entities chosen by the user, and dynamically generates a clean webpage containing organized news feeds. For social media users who use social media to stay updated

on topics of interest, BAD provides a more convenient solution. To use BAD, a user needs to find a source that interests them, and then enters the link to the source. The source can be any site with an RSS feed, including podcasts, text articles, pictures, and YouTube videos, which makes BAD more versatile than social media. BAD is a Python program that scrapes web data from links entered by the user, saves the data in JSON format, and then dynamically updates a webpage with compact blog posts tailored specifically for the type of media the link contains. In this talk I demonstrate how BAD was used to aggregate news data related to astronomy.

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### **Using A Random Forest Model To Predict Inactivity Of Github Repositories**

**Samuel Steiner**

(Computer Science)

*Faculty Mentor(s):* Garrett Dancik

GitHub is a development platform currently used by 31 million software developers, allows developers to share and improve their creations. Anyone can sign-up and post projects to GitHub, and other users can contribute to anyone's project. However, projects can become inactive or unmaintained, which creates problems when others want to incorporate inactive projects in their own work or make contributions that are not incorporated, leading to a lot of wasted time. In this work, I sought to reproduce a previous study that used a random forest model to predict whether a GitHub project was inactive or not. Data was obtained by using the GitHub API as well as web scrapping using Python. Although not all of the original data in the study was available, I was able to get similar results, building a random forest model that had an accuracy of 91%. I was able to obtain information on 994 repositories including the number of unique contributors for each project and the amount of contributions made by each contributor. The performance of the random forest model was evaluated using different evaluation metrics including F-measure, Cohen's kappa, and the area under an ROC curve. The validation of the original study demonstrates that a random forest model can accurately predict the activity of GitHub projects, which can help inform developers about software which is located on GitHub.

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### **Tracking Flight Prices From New York City (JFK) To Shanghai (PVG) On Christmas Day**

**Guoyang Wang**

(Computer Science)

*Faculty Mentor(s):* Garrett Dancik

Many of us are familiar with the phenomenon that two people can pay different prices on airfare even though the flights and the service are the same. For this project, we tracked the price of flights departing on Christmas from New York City to Shanghai in order to identify the best day to purchase this flight. In order to collect the data, we developed a web scraper using Python and Selenium to extract information from Google Flights between November 27th – December 14th. In addition to the flight price, we extracted the flight number(s), departure and arrival times, duration, and number of stops. We also recorded the current date, the day of the week, and the number of days before departure. In all we collected data for 257 different flights. The programming language R was then used to analyze and visualize the data. We found that there was a large fluctuation in price for individual flights over time, making it difficult to identify an optimal purchase date. However, we did find that flights were the cheapest (had the lowest mean value) 24 days before Christmas (12/1/2018), and that more flights were available this day than any other.

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## **Network and Sentiment Analysis of The Chronicles of Narnia: The Lion, the Witch and the Wardrobe**

**Jafet Aparicio, Chase Oliver, Anayancy Ramos**

(Computer Science & Mathematical Sciences)

*Faculty Mentor(s):* Garrett Dancik, Megan Heenehan

Character interaction networks can be constructed from movie scripts in order to analyze the underlying social structure of the movie. Network science measures can then be calculated to measure the “importance” or influence of characters through a quantitative lens. In this study, we constructed and analyzed the character interaction network of the film *The Chronicles of Narnia: The Lion, The Witch, and the Wardrobe*. The script was parsed using the R programming language, and an edge list was constructed containing the character interactions. We defined an “interaction” as two characters being in the same scene. The edge list was analyzed using the Gephi network visualization software, and we calculated the weighted degree, betweenness, and closeness centrality for each character. A community analysis was carried out using the Girvan-Newman algorithm, and a word cloud was constructed to determine the words most frequently spoken by the main characters. Interestingly, we found that Peter was the most “important” based on all the centrality measures we looked at, but the centrality measures for Susan, Edmond, and Lucy were comparable. Sentiment analysis showed that Peter was the most neutral, suggesting he is more impartial. Word clouds revealed that the 4 children frequently talk about or to one another. Community detection was able to distinguish characters that live or travel to Narnia from those that do not. Overall, our analysis demonstrates that network science and sentiment analysis can be used to understand movie characters and their interactions.

## **Cultural Experience, Policy and Gentrification: A Public Health Approach to Understanding Substance Abuse in Native American and Native Hawaiian Communities**

**Kelly I. Bielonko**

(Health Science)

*Faculty Mentor(s):* Mitchell L. Doucette

Native American and Native Hawaiian young adults are at a heightened risk for developing substance abuse issues due to a variety of societal causes. As a result of cultural genocide, historical trauma and familial influence, many indigenous young adults face substance abuse issues involving alcohol and drugs. This study sought to compare substance abuse risk/protective factors faced by and interventions used in Native American and Native Hawaiian communities, tribes and reservations. Using the social ecological model, we reviewed the literature to identify similar risk/protective factors at the intrapersonal, interpersonal, community, and policy level. We used the databases PubMed, Academic Search premier, PsychINFO and The University of New Mexico Native Health Database. Results displayed cross-cultural comparison of similar risk factors, policies and interventions used within Native American and Native Hawaiian communities. Substance abuse in young adults interferes with quality of life, personal development and results in negative health consequences among the groups examined. Results from this study will help translate successful interventions for substance abuse from one Native community to the other and vice versa based upon parallel risk/protective factors.

## **Firearms, Dementia, and the Clinician: A Review of Available Counseling Recommendations**

**Harrison W. Dayton**

(Health Science)

*Faculty Mentor(s):* Mitchell L. Doucette

Roughly 5.7 million Americans currently live with some form of dementia with around 60% of persons with dementia (PWD) owning a firearm. The mental deterioration associated with dementia creates opportunity for firearm abuse, misuse, and violence. Patient and family safety counseling from a health care provider is one potential opportunity for reducing the level of danger. The purpose of this study was to identify the

available clinical guidelines for firearm safety for PWD. We conducted a literature review around firearm safety counseling by health care providers using the databases PubMed and Academic Search Ultimate. Databases were searched using variations of the terms, “Firearms,” “Dementia,” and “Alzheimer’s Disease.” Studies were included for review if they provided recommendations for health care provider’s counseling around firearm safety for PWD or their families. Search terms yielded 456 articles, of which, 15 were relevant for inclusion. Guidelines present in the literature ranged from simple screening questions around firearm access to specific recommendations around firearm safety. Screening questions often consisted of assessing firearm prevalence in the home of PWD. Safety recommendations often consisted of behavior change around firearm removal and/or safe firearm storage. Providing standardized and effective clinical guidelines to health care providers that interact with firearm owning PWD can act as a means to reduce firearm injury and violence. Relevant professional organizations should collaborate to create census, evidence-based guidelines around firearm safety for PWD for health care providers and family members.

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### **Wealth Deficit**

#### **Sarah Gates Williams**

(Economics)

*Faculty Mentor(s):* Brendan M. Cunningham

My oral presentation will discuss the role the media and laws have played in Black Americans’ wealth (or lack of) accumulation. I take a historical look at black owned business and the media roles in promoting or dismantling them, and the overall disconnection that black Americans have to economy and their power within it.

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### **The Economics of Hurricane Evacuation**

#### **Kranc, Jared**

(Economics)

*Faculty Mentor(s):* Brown, Jennifer

Tropical cyclones, known as hurricanes in the United States, are among planet Earth’s deadliest and costliest natural disasters. Because a storm of that nature can impact millions of people at a single time, millions of people are consequently at risk of injury or even death from hurricanes. Under ideal conditions, everyone would evacuate before a hurricane’s eye makes landfall, but often-overlooked variables get in the way and sometimes prevent people from doing so. The question becomes, what economic factors, monetary or otherwise, contribute to residents evacuating before the landfall of a hurricane? This question is addressed using sixteen variables such as population, percent of households that speak non-English languages, number of residents per household, poverty rates, white vs. nonwhite races, and historical evacuation rates from previous hurricanes among thirty-two American cities along or near the coasts of the Atlantic Ocean and the Gulf of Mexico. This data is used to create an OLS regression model and subsequently a GLS model to test which variables have the greatest contribution towards evacuation or are significant and to predict which city will have the highest predicted evacuation rate in the event of a hurricane.

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### **Sensationalism In the Media: Sensible News or Senseless Profit?**

#### **Kranc, Jared**

(Economics)

*Faculty Mentor(s):* Cunningham, Brendan

In journalism, the use of exaggeratedly exciting or shocking stories while disregarding accuracy to provoke public interest or excitement is known as sensationalism. The idea of sensationalism in the media is far from a foreign concept in America. Sensationalism as we now understand arose in the 1890s with the rise of

yellow journalism. Initially a competition over the "yellow kid" character in newspaper comics between Joseph Pulitzer and William Hearst, this culminated a newspaper circulation competition the two, going so far as to sway the opinion of the general public during the Spanish-American War of 1898 and even influencing public policy. Nowadays, sensationalism has evolved to include not only newspapers as a medium but also televised news stations like Fox News and free online digital news networks such as Infowars and Occupy Democrats. This means that sensationalist news has more platforms and outlets and accessibility than ever before in history. In the end, however, while this indeed leads to attention, does this also lead to more followers, viewers, subscribers, and profit by extension? This project will investigate the number of followers on social media, viewers, and subscribers of various media platforms (particularly more bias and slanted ones which are more prone to sensationalism by nature), and find a correlation between that and the profit of slanted media companies.

### **How Does Fake News Effect the Economy**

**Marcus Lim**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

This paper aims to examine the economics of the phenomenon of fake news namely news that are either totally false or misleading elements of incorporated within its content. Deep down, the problem of fake news is about the economics of attention--especially how much revenue is collected by advertisers. In today's world, more attention should be paid to digital advertising where it is the main source and also combating the phenomenon of fake news. The paper will also try to point out the economic incentive to produce automated fake news that reacts and target to people with group emotional behavior and different ethnicity within social networks.

### **Media Influence on the Stock Market**

**Jeffrey Mathieu**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Media Influence on the Stock Market

## **A Study of Home Bias In International Equity Markets and Key Determinants for the Phenomenon**

**Al Viglione**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

With free markets, there is innate sub-optimality in investment decisions and holdings. Home bias, the tendency for investors to invest domestically as opposed to diversifying internationally, plays a leading role in this phenomenon. Sub-optimal portfolio allocations result in unrealized returns and limits on wealth potential. Studying the cause and effect relationships of irrational behavior, such as home bias, can help us to improve market efficiency. In my study, I derive economic measurements, calculate actual aggregate portfolio holdings by country, and create an ideal portfolio based on actual portfolio constraints. Secondly, I evaluate these measures to quantify the disparity between ideal and actual portfolio holdings. By calculating these home bias variables, I attempt to explain the phenomenon and why aggregate portfolio holdings are often sub-optimal. My study of the home bias phenomenon is macroeconomic in its approach and I work with aggregate data to describe the decision-making of economies as a whole. My study aims to prove that increased diversification can be achieved by overcoming international investment barriers, allowing investors to secure higher returns with fewer downside risks.

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## **Economics of Spotify**

**Rachel Laguerre**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Spotify is an audio streaming platform which was founded in 2006 and launched in 2008. Created as an answer to the question of music piracy, Spotify has seen immense growth over the last decade. Yet, Spotify has only just started to see profit in the last year and more often than not operates at a loss. This has implications for the industries that Spotify supports, specifically the music industry which relies heavily on digital sales now more than anything. The presentation aims to analyze the music industry as a market, with a discussion of the primary good: a song. This presentation also aims to analyze the effects of Spotify on the music industry, by way of data analysis and theoretical examination.

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## **Christopher Durang's Comedies of Family Dysfunction**

**Sabrina Diaz**

(English)

*Faculty Mentor(s):* Miriam Chirico

Christopher Durang's plays *The Marriage of Bette and Boo* and *Baby With the Bathwater*, are all black comedies that demonstrate how parents negatively impact their children. Durang shows the dysfunction and harm through unique and quirky characters as well as an absurd tone and style that, as a result, causes us to laugh despite the family pain. The healing laughter transmutes the pain into understanding, and the main characters come to terms and accept the troublesome events that have happened to them. This paper will incorporate theories of black comedy as well as family dysfunction to analyze the family dynamics and the suffering of the child. The painful elements of a Durangian play make us cringe as well as laugh, and yet we are left with a sense of solace at the end that the characters will be alright despite what they have been through and the pain they endured.

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## **From Edging to Gooning: The Rhetoric of Pornosexuality on Tumblr**

**Amber Albe**

(English)

*Faculty Mentor(s):* Jordan Youngblood

In their article “Me, My Self, and I(T): Conceptualizing Information Technology Identity and its Implications,” Michelle Carter and Varun Grover present the idea of information technology identity (or “IT identity”) to describe how individuals construct a sense of self through their usage of digital devices, interfaces, and networks. While scholarly work has considered aspects of how digital environments affect sexual identity, the implications of how thoroughly sexual identity can emerge from (and be reliant upon) these networks is less established. Closer attention should be directed toward the rhetoric of online sexual identification within communities marked as deviant, particularly those which hold non-normativity as a source of pride. These online sexual collectives utilize available digital platforms to challenge presumptions about “healthy” sexuality and consumption. This presentation focuses on IT identity in relation to one such community: “pornosexuals.” Prior to the site’s ban on adult content, pornosexuals were most active on the social microblogging website Tumblr. Pornosexuality actively encouraged users to cede total control over to consumption, and through the multimodal capabilities of Tumblr’s interface, treat porn less like “neutral” content in the pursuit of sexual gratification and more like an active agent—“Porn”—that should be worshipped and given power. Through exploring how this community formed and sustained a sexual philosophy via a shared digital platform and vocabulary, larger questions of identity, agency, and cultural capital in the Information Age can be addressed as well.

## **Hamartia & Verse: A Dramaturgical Exploration of “The Durtia Trilogy”**

**Matt Bessette**

(English)

*Faculty Mentor(s):* Reginald Flood

This presentation will describe the various dramaturgical components that comprised the research, preparation, and writing processes for my senior capstone in English which, in my case, takes the form of an original script titled “Dedecus”—the first part of a trilogy of one-act plays in verse. Part I of “The Durtia Trilogy” tells the tragedy of a Medieval king who weds into royalty and redeems a fictional crime-ridden country, only to have his family discover (through the reemergence of an old nemesis) that it was he who long ago worked to overthrow the government in the first place. One of the trilogy’s themes is that of individuality, so each of the thirteen characters bears a unique Latin name, tragic flaw, Jungian archetype, metrical form, rhyme scheme, and stanza type. As the series progresses across several decades, Durtia, the aforementioned king’s daughter and the trilogy’s protagonist, is the only character to survive each play; for one reason or another, everyone around her (good or evil) becomes victim of their personal hamartia. Her survival and ultimate triumph over her male counterparts illustrate one of my goals: subverting the hackneyed romantic conventions of “men are heroes and women are objects.” Furthermore, to emphasize the cyclical nature of each cast’s self-fulfilling demises, the scenic locales of the first two plays are organized in a palindromic structure (ABCDCBA). Inspired by Medieval and (later) Strindbergian station dramas, this format will conclude after the second play—as the cycle is broken and Durtia finds contentment.

**The Ghost of the House: Women, Death & Domesticity in the Short Stories of Charlotte Perkins Gilman**

**Jenn Kristoff**

(English)

*Faculty Mentor(s):* Allison Speicher

During the nineteenth century, middle- and upper-class white women were taught to believe that they had to be an “angel of the house” in order to be idealized as the perfect woman. While the “angel of the house” was ideal, angels are often considered part of the afterlife. In Charlotte Perkins Gilman’s short stories “The Yellow Wallpaper” (1892) and “The Giant Wistaria” (1891), I see both protagonists not as angels but as literal or metaphorical ghosts, haunting and haunted by the homes they are entrapped in. “The Giant Wistaria” speaks of a woman from eighteenth century who has a child out of wedlock; the child is taken away due to her father’s dominance over his daughter and she is not seen until 100 years later, in her literal ghostly form. “The Yellow Wallpaper” suggests a metaphorical ghost, as the narrator of the story is trapped within a room on bed rest. Her husband, John, also her doctor, leaves her in a room with yellow wallpaper with no mental or physical activity, which drives her insane. Since the narrator of “The Yellow Wallpaper” is being haunted by the home, she turns around and haunts the home and her family members, showing ghostly characteristics and stepping out of social standards. Gilman’s ghostly women serve as a critique of nineteenth-century gender norms and how women felt both haunted and ghostly within their homes.

**“Resisting the Grand Narrative of Homelessness: Local Stories from the Windham No Freeze Hospitality Center”**

**Samantha Price**

(English)

*Faculty Mentor(s):* Susan DeRosa

Research on homelessness disproportionately focuses primarily on statistics and quantitative analyses, inadequately showcasing their actual lives and perpetuating negative characteristics, such as laziness, isolation, and a lack of education. To address this discrepancy, my research examines how personal narratives of homeless individuals deconstruct the stereotypes and homogeneity found within the grand narrative surrounding homelessness. This research aims to counter the grand narratives and advocates for a change in the language used to discuss the homeless by examining the stories of four individuals from the Windham No Freeze Hospitality Center in Willimantic, a volunteer-run resource center. I conducted interviews that facilitated an open discussion about the residents’ lives, providing a safe, anonymous opportunity to personally dispute any false perceptions about homelessness. Questions included: “Are there certain events which led to your current homeless situation?” and “How do you think people perceive homeless individuals?” I transcribed and coded the interviews in order to discover common themes and patterns about homelessness which organically emerged from their narratives. Overall, several common themes and patterns emerge which counter the stereotypes and reveal new ways of understanding the homeless experience: unsupportive families, discrimination, and a sense of community amongst the homeless population. Some residents emphasize a need for empathy and better understanding by society of the homeless in order to counter negative perceptions. While I identify several trends across the interviews, every resident’s life and homeless experience was unique, which makes it impossible to flatten homelessness into one singular “grand narrative.”

## **Look How Far We've (Not) Come: Rom-Com Heroines and Shakespeare**

**Hannah Hokanson**

(English)

*Faculty Mentor(s):* Miriam Chirico

Our perspective of empowered women in the twenty-first century tends to be women who can make autonomous choices and control their own paths to success. However, it turns out our current cinematic image of strong female heroes leaves much to be desired. In contrast to the female characters that Shakespeare wrote during the late 16th century, our contemporary heroines of modern romantic comedies are delusional and flawed; they are unable to attain happiness themselves, their male counterparts must teach them to change, and furthermore, they seem remarkably out of control. This negative depiction of women in romance is in part due to the long history of "hysteria" and the trope of the un-hinged woman. Shakespeare, in contrast, wrote female characters who do not compromise themselves but who instead adapt to their surroundings, while also encouraging society to change until an ideal ending is achieved. The comparison of Viola from Twelfth Night with the three heroines from recent romantic comedies: *27 Dresses*, *He's Just Not That Into You*, and *No Reservations* will show the differences between Shakespearean leading ladies and those who are written today.

## **Teaching Young Adults The Merchant of Venice**

**Mary Wilterdink**

(English)

*Faculty Mentor(s):* Miriam Chirico

For my research project, I want to examine the current scholarship related to teaching *The Merchant of Venice* to twenty-first century high school English students. While this play was once ubiquitous in secondary school curricula, today its popularity has dwindled in favor of less "problematic" Shakespearean comedies, such as *Twelfth Night* or *A Midsummer Night's Dream*. This has occurred because teachers and administrators are understandably concerned about introducing a work of literature with such overt anti-Semitic overtones into their classrooms. However, I believe that *The Merchant of Venice* is of particular value to contemporary students, not only because it exemplifies Shakespeare's comedic form, but also because it demands an examination of and a response to the antisemitism rampant throughout the text. In our current era of heightened racism, and its corollary – heightened sensitivity, a study of *The Merchant of Venice* would provide students with valuable lessons not only in literature, but also in tolerance, sensitivity, and inclusivity. The purpose of my research, therefore, would be to determine if *The Merchant of Venice* can be successfully taught as an exemplar of Shakespearean comedy, while addressing, rather than ignoring, its social justice issues in a sensitive and thoughtful way.

## **Vulnerability Factors of the Fringing Saltmarsh of Napatree Lagoon: Westerly, RI**

**Jennifer A. Croteau**

(Environmental Earth Science)

*Faculty Mentor(s):* Bryan A. Oakley

Erosion of salt marshes is linked to many factors (i.e. sea level rise, wave erosion, biological processes), and poses a risk of habitat loss for many species. Anecdotal observations of the fringing salt marsh is eroding. The 260 m long fringing marsh examined here is narrow (12 m), and located within the 0.04 km<sup>2</sup> Napatree Lagoon, part of the Napatree Point Conservation Area (NPCA) in Watch Hill, Rhode Island. Loss of the marsh jeopardizes an important part of the lagoon ecosystem. Multiple factors assessed to determine the vulnerability of the marsh include: elevation, platform stability, sediment composition, and crustacean burrowing. Monthly crab surveys in 2017/2018 indicated a population of green crabs (*Carcinus maenas*) live within the lagoon. The marsh platform and edge were observed and monitored for green crab and fiddler crab (*Uca*) activity using time-lapse cameras. The average elevation of the marsh platform based on RTK-GPS

Elevation data from 2017 is 0.18 m NAVD88, compared to the elevation of MHW (0.36 m), suggesting the marsh platform is underwater during most high tides. The marsh stability determines its resilience to erosion from wave action. Stability and marsh composition data was gathered using a modified AgraTronx Soil Compaction Tester and Oakfield Soil Probe along 17 transects. The soil probes provided ~0.3 m cores of the marsh platform and indicated the marsh is primarily composed of sand with very little to no peat, supporting the interpretation that the marsh is a former back barrier beach. Mapping the marsh edge morphology found burrows and undercuts at many of the transects, and 5 showed erosion within the last two years.

### **Mexican Migration in Connecticut: Braceros and Beyond**

**Martha Ennis**

(History)

*Faculty Mentor(s):* Joan Meznar

Today, it is hard to imagine a time when Mexican migrants were welcomed into the country as workers. The current climate around immigration is extremely divided, and it seems like it has always been that way. However, there was a time when Mexican Nationals were welcomed into the United States as workers. The Bracero Program, which was a labor agreement made between the United States and the Mexican government, allowed for Mexicans to obtain work visas into the United States during World War Two and beyond. A majority of these “braceros” were agricultural workers who labored on farms in the south/southeast, but Connecticut was the destination of a small portion of braceros. These workers came to the northeast to work on the New York, New Haven, and Hartford Railway. The railroad bracero program began as a part of the larger agricultural program, but eventually became its own entity. Unlike the broader program, the railway program ended with the second World War. Examining the publications about braceros and other migrant workers, we can strengthen our understanding of immigration issues today. By using the Historical Hartford Courant, as well as documents and publications from the New York, New Haven, and Hartford Railway, the shift from positive to negative media portrayals of the braceros in Connecticut and later, of braceros and other migrant workers, can be observed. The issue of migration has always been grey, and American attitudes towards migrant workers has largely been shaped by outside circumstances, not the workers themselves.

### **The Ideal Woman: Sexology, Sex Reform, and Engineering Marriage in Weimar Germany**

**Cassandra Epes**

(History)

*Faculty Mentor(s):* Scott Moore

The end of the first World War marked a period of profound change for the German nation as Germany's first democracy, the Weimar Republic, was born. The Weimar Republic was exceptionally freeing, ushering in one of the most creative and uninhibited periods of the twentieth century. The scientific study of sexual behavior and human sexuality, or sexology, prevailed in Germany throughout the nineteenth century and continued to gain momentum during the Weimar period. The most significant changes in the field of sexology during the twentieth century pertained to the role of women in society and in their sexual relationships. These advancements in the field of sexology during the interwar period came alongside a period of unprecedented change for German women as they saturated the workforce and gained full suffrage. As an increasing number of single women became financially independent and disillusioned with the pre-war construction of the family unit, German men found themselves rendered impotent. Already humiliated by the loss of the war, men desperately clung to the pre-war, Wilhelmian ideal of the quintessential real man by turning their attention to the sexual behavior of women and fostering a culture of systematically engineered marriages through sex reform. This project draws upon the works of several prominent sexologists of the late nineteenth and early twentieth centuries, most notably Richard von Krafft-Ebing and Theodoor Hendrik van de Velde, as well as a variety of articles published in German magazines during the 1920s. By comparing these works, spanning from the end of the Victorian era to the 1930s, it becomes clear that The Great War fundamentally altered the way that women conceptualized female identity, sex, and the family.

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### **The Final Expedition of an Old Explorer: The Role of Hiram Bingham in Peruvian identity and the Tourism Gold Mine**

**Craig Hanford**

(History)

*Faculty Mentor(s):* Thomas Balcerski

Hiram Bingham III and his second wife, Suzanne, took the arduous journey to Machu Picchu, high in the Andes, in 1948. Mr. and Mrs. Bingham chose to ride mules to the top of the mountain, reminiscent of Bingham's earlier expedition in 1911, rather than by car or bus on the new road. As Bingham and wife ascended the newly build, winding path from Cusco to Machu Picchu, they were greeted by press, dignitaries, and even the President of Peru. This research project aims to understand how the changing political landscape culminated in Bingham's return to Peru in October 1948. Hiram Bingham was caught smuggling Peruvian artifacts and antiquities out of the country in 1915, ignoring the decrees of the quasi-populist Billinghurst's regime. This blatant disregard for Peruvian law stoked images of foreign imperialism and US elitism, all too well known in Peru. As such, Hiram Bingham III was quite literally chased out of the country in 1915. The rise of indigenismo and the Aprista movement in following years will dramatically change the political landscape, seeking scientific, economic, and worker reforms. Peru's intellectual elites sought the institution of tourism as an outlet to elevate the status of indigenous Peruvians and connect back to their ancient, and magnificent Incan roots. Bingham becomes involved in the struggle for Peruvian identity as twentieth century politics reunite him with Machu Picchu, pit the elites against the masses, and reveal the beginnings of the Peruvian tourism gold mine.

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### **Connecticut Revolutionary War Deserters: An Experiment in Digital History**

**Dana J. Meyer**

(History)

*Faculty Mentor(s):* Barbara M. Tucker

Desertion is commonplace in war. Historians have tried to ascertain motive and estimate how many soldiers deserted during any given war. However, the numbers used to document desertion rates in secondary studies are often faulty, incomplete, or unsubstantiated. The Desertion rate during the American Revolution is one that remains largely unanswered. Using Digital Tools to research and extract primary source data, I provide an answer to this question through both qualitative and quantitative inquiry and analysis.

Until now, Connecticut newspaper ads and the Muster Rolls have remained separate primary sources for Revolutionary War desertion. I compiled the first comprehensive list of Connecticut Line Deserters from 1775-1783. This list formed the foundation of my relational database which includes approximately 1400 deserters, and more than 50 searchable attribute fields to analyze historical queries. The collation of Deserter Ads allows a method of counting soldiers from each individual ad and adding them to the Muster Roll total. Most significant of the findings, are the additional names of soldiers not included in the Muster Roll. The discrepancies between the Deserter Ads and the Muster Roll leaves many research questions to be answered. The lack of a dedicated historical study to Revolutionary War desertion in Connecticut incited my interest in compiling a database to narrate a history that is incomprehensible without the tools of digital history. My research and methodology represent a step toward combining primary data and textual analysis needed to contextualize the written material historians rely indiscriminately upon. This presentation will explain the digital methods used, the sources consulted, and the conclusions reached.

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### **Predictive Analytics and the Electorate in the 2018 Midterm Elections**

**Robert Johnson**

(Mathematical Sciences)

*Faculty Mentor(s):* Chantal D. Larose

The 2018 midterm elections tested the popularity of both president Donald Trump and then-Connecticut Governor Dannel Malloy. In the race for governor, Democrat Ned Lamont prevailed over Republican Bob Stefanowski. But what does this tell us about the electorate? Is it possible to build a model to accurately predict who a given voter will vote for based on factors such as their town or political affiliation? This project studies the Connecticut electorate in the 2018 midterm elections through combining big data analytics with political science. Using a voter database and the statistical programming language R, we analyze Connecticut voters through registration, turnout, and demographic data. Data visualizations aid our understanding of how people voted in the midterms elections, while predictive analytics such as CART models uncover patterns in who Connecticut voters supported in the midterms.

### **Will the Real Slim Shady Please Stand Up: Eminem's Multiple Musical Identities and How They Challenge Ideas of Authenticity**

**Sara Vega**

(Performing Arts - Music)

*Faculty Mentor(s):* Timothy Cochran

We can never really know how much truth lies in the stories musicians tell about themselves. Rap is often thought of as being a real and raw genre because it often vents struggles associated with urban life (poverty, violence, drugs). But the issue of truth is also problematic in rap music in which artists create new names for themselves as well as alter egos. Eminem is an especially interesting case because he created three names and identities within his music. My interest is not necessarily in discovering the truth behind Eminem's multiple identities, but in how he presents those identities to the world.

I begin by analyzing several songs from Eminem's self-named albums and analyze elements (such as word choice, vocal range, and timbre) linked with his three identities: Slim Shady, Marshall Mathers, and Eminem. Katja Lee argues that Eminem's three personas contradict each other and change but are simultaneously incomplete and cannot stand on their own. I will take Lee's argument a step further by looking at how, musically, vocally, and lyrically, Eminem presents his multiple identities and the problems they pose for identifying authenticity. For example, the identities interrupt each other by their vocal timbres blending together, making it difficult to discern which identity is speaking. I conclude by focusing on "My Name Is." Through this analysis I will further understanding about how Eminem's identities interact with each other musically and lyrically and in what ways they challenge authenticity.

### **Born Again Buddhism**

**Avantika Tankala**

(Political Science, Philosophy and Geography)

*Faculty Mentor(s):* Funes Maderey, Ana Laura

There exists a strong cultural barrier between Western and Eastern thinkers that for centuries has fostered ingrained biases against the schools of thought on the opposite side. I attempt to address one problem caused by this barrier in fortifying Buddhism against attacks based on a nonbelief in reincarnation. This problem can be solved in at least three ways: by finding a pre-existing explanation for reincarnation, by coming up with a new explanation, or by proving that a belief in reincarnation is nonessential to uphold the remainder of the Buddha's teachings. I seek to explore all three options, as well as to clarify what is meant by the terms "reincarnation" and "rebirth" as they pertain to this topic. In offering a critical response to this problem I hope to contribute to the uniting of Eastern ideas and Western science to tackle the great philosophical questions we still ponder to this day.

### **A Campus of Partisan Lenses: How Partisanship Affects Eastern Students' Economic Perceptions**

**Fiorella Baccaglia**

(Political Science, Philosophy and Geography)

*Faculty Mentor(s):* Martin Mendoza-Botelho

Due to the United States' political climate becoming increasingly tense after the 2016 election and partisanship being more divided than ever, the study presented sought to analyze 150 Eastern student's perceptions on Trump's economic reforms based on their political affiliations. I conducted a survey of close ended questions with broad statements about the U.S's economic climate. Conceptual relationships between taxation and the institution of socialist policies such as universal healthcare as well as student's contrasted opinions between Obama and Trump were captured in this survey. The data gathered was able to prove the initial hypothesis: as observed on a national level, there is yet more evidence that Americans increasingly view the world through partisan lenses and that the youth is politically disengaged and uninformed in the state of the U.S. economy. We found evident behaviors of blind party loyalty in both Republicans and Democrats and the most interesting aspect of the results was that, without knowing or being certain, many students formed biased opinions derived from their political sympathies. For instance, we asked for students' levels of disagreement with the statement, "Overall, the U.S. is in a good state" by party sympathy. A majority of Democrats (55.42%) claimed to either strongly disagree or disagree to the statement while only 20.48% agreed. Results were extremely distinct for Republican students— an overwhelming majority of 85% agreed or strongly agreed and only 10% disagreed. The divergent views between Democrats and Republicans endorses the idea that students see the world through partisan lenses. The Democrats continue to hold a favorability edge over Republicans when it comes to the Obama Administration while Republicans have more positive perceptions on Trump's economy than Obama's.

**Deepening the Divide: The Perception of Political Correctness and its Contribution to Party Polarization****Leigh Generous, Jacqueline Pillo**

(Political Science, Philosophy and Geography)

*Faculty Mentor(s):* Martin Mendoza-Botelho

It is indisputable that there is currently a massive surge of political correctness that is sweeping across university campuses throughout the United States. Depending on which side of the ideological framework that an individual is on, political correctness is either a justified call for greater sensitivity and inclusion or an unequivocal affront to our First Amendment rights. The 2016 election of Donald Trump as President created yet even more on-campus divisions and controversies. Universities were confronted with the debate between necessary freedom of expression, and moral rights and responsibility. The study is inspired by the current wave of political correctness ideology that appears to be engulfing college campuses across the United States, and its contribution to party polarization.

As political science students who regularly engage in a campus setting, this research sought to determine whether or not there is a correlation between increasingly politically correct campuses and strong party polarization among students. The research analyzed student attitudes towards the concept of political correctness and its pervasiveness within the university culture. If and how students perceive there to be a connection between political correctness and extreme political party polarization were also examined. It was hypothesized that any identified patterns would represent the majority of the responses given by members of a particular party. Rather, the visual data showed that responses to six statements administered to participants via the survey were far more varied than was anticipated. Both parties indicated an overall lack of willingness to engage with others who do not share their political views, which partially supported our hypothesis. Coupled with the parties' differing perspectives on political correctness, it can be concluded that this shortcoming contributes to a partisan divide and political party polarization among ECSU students.

**The Widening Ideological Divide: Party Polarization and Biased Views among College Students****Fiorella Beccaglia**

(Political Science, Philosophy and Geography)  
*Faculty Mentor(s):* Martin Mendoza-Botelho

Due to the United States' political climate becoming increasingly tense after the 2016 election and partisanship being more divided than ever, the study analyzes Eastern student's perceptions on Trump's economic reforms based on political affiliations. The information provided comes from a survey of close ended questions with 150 participants with broad statements about the United States' economic climate, including conceptual relationships between taxation and social policies such as universal healthcare as well as student's contrasted opinions between the Obama and Trump administrations. The data gathered supported the initial hypothesis that Americans increasingly view the world through partisan lenses and that the youth is politically disengaged and uninformed in the state of the U.S. economy. The research also found evidence of behavior related to blind party loyalty in both Republican and Democrat followers that resulted in biased opinions derived from their political sympathies. The divergent views between Democrats and Republicans endorses the idea that students see the world through partisan lenses. While Democrats continue to hold a favorability edge over Republicans when it comes to the Obama Administration, Republicans have a more positive perception on Trump's economy than Obama's.

### **Same School Different Experience: The effects of gender on student's perceptions**

**Sara Terry, Brisa Cruz, Lucia Bazzardi, Alparslan Usta**  
 (Political Science, Philosophy and Geography)  
*Faculty Mentor(s):* Martin Mendoza-Botelho

The research discusses the perceptions of gender inequality amongst college students. It analyzes the data acquired through 150 closed-ended surveys administered at a liberal arts university in New England. Questions focused on assessing students' knowledge of inequality within the economy, healthcare, and congressional representation. The findings suggest that although the majority of college students are informed on issues of gender inequality, there are discrepancies between men and women's perceptions about the importance and severity of these issues; this was further impacted by ethnic, racial and political identities. This divide was also evident in the students' attitudes toward interventions to remedy these inequalities. Understanding this relationship between a student's identity and overall support has broad implications for tackling these issues in political and social spheres. This project aims to boost awareness of and advocacy for equity between all genders.

### **Housing Policy is Education Policy: How Municipal Housing and Zoning Policies Have Segregated Connecticut and subsequently led to Education Inequality**

**Audrey Rossignol**  
 (Political Science, Philosophy and Geography)  
*Faculty Mentor(s):* Nicole Krassas

Historic and modern municipal government zoning laws often create social, racial and economic segregation in Connecticut. This research is aimed at analyzing the history, and current depth of exclusionary zoning policies at the municipal level in Connecticut. The paper also connects this history to how the laws and regulations have played a large role in education inequality. Exclusionary housing policies bar low-income families from living in middle and upper- class towns, making it difficult for low- income students to attend high performing and well-funded school systems. This research analyzes all 169 towns in Connecticut, looking at the correlations between exclusionary housing and zoning policies and educational attainment.



## **Voting in America: An Intersectional Perspective**

**Morgane Russell**

(Political Science, Philosophy and Geography)

*Faculty Mentor(s):* Nicole Krassas

This research explores how factors such as voter ID laws and demographic factors such as ethnicity and poverty influence voter turnout in the United States. The data collected from each state will provide a unique perspective on how different areas of this country function within this democracy as well as the potential impact of restrictive voting laws. The aim of this research is to see if there are policies and governmental structures in place that have a negative impact on the voter turnout of particular population groups. Compared to other countries the United States has low voter turnout rates for general elections. This country also has a long and deep-rooted history with voter suppression. Given this information, it is imperative to examine how voting laws have changed overtime and whether these laws are catalysts to suppress the votes of disadvantage groups today.

## **The Alienated Criminal: A Marxist Approach to Restorative Theories of Justice**

**Kelsey Wolfe**

(Political Science, Philosophy and Geography)

*Faculty Mentor(s):* Ana Funes-Maderey

Retributive justice currently stands as the most common theory of justice practiced in the American legal system but it has recently been critiqued by those who argue for restorative values and practices. Restorative justice seeks to respond to crime not by punishment, but rather by repairing the harm and restoring the social relations broken by crime. The offender is made to take responsibility for his or her actions in the hopes that understanding the harm created will deter the offender from committing future crimes. However, critics of restorative justice point out that it seems to center mainly on the offender, relegating the victim to an intermediary role, which fails to secure proper justice when serious crimes have been committed. In this paper, I draw attention to the superiority of a restorative justice approach to crime, but argue that both restorative and retributive theories of justice need to consider the problem of alienation as Marxist theory understands it. Without addressing (and eventually transcending) the estrangement of people caused by the mechanism of a society divided into social classes, there will be no satisfactory and fair remedy for the offenders, the victims, and society at large. The Marxist theory of alienation helps to better understand the situation of the contemporary American prisoner, both while actively in prison and as they attempt to enter back into society. Drawing from my own personal experience as an ex-offender, I will attempt to show that a criminal must transcend and resolve their state of “estrangement” within themselves and within society as a whole, before justice can claim to have been served. This approach to restorative justice has the best potential to effectively implement a new means of justice and change.

## **Lesch-Nyhan Syndrome: Etiology and Treatment**

**Taylor M. Shea**

(Psychological Science)

*Faculty Mentor(s):* Jeffrey S. Danforth, Ph. D.

Lesch-Nyhan disease is a recessive, X linked genetic disorder occurring primarily in males. The disease is characterized by ferocious, relentless self-injurious behavior, intellectual and developmental disabilities, as well as substantial physical abnormalities. The purpose of this paper is to review the empirical literature regarding the etiology and intervention of Lesch-Nyhan disease. The participants in the research reviewed ranged from birth-15 years. The studies were located by entering the terms “Lesch-Nyhan syndrome”, “etiology”, “treatment”, and “behavioral intervention” into the PsycINFO, PsycARTICLES, and MEDLINE search engines. Research on etiology focuses primarily on the complete deficiency of the hypoxanthine-guanine phosphoribosyltransferase (HGPRT) gene. An array of behavior analytic approaches have been

investigated and found effective in the management of the self-mutilative behaviors for children with Lesch-Nyhan disease. The most effective behavioral interventions found to decrease self-injurious behavior are systematic desensitization, differential reinforcement of other behaviors, differential reinforcement of incompatible behaviors, and positive reinforcement. In addition, a variety of psychopharmacological interventions serve as effective treatment.

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### **Creativity Type and Perceived Stress**

**Colleen Warner**

(Psychological Science)

*Faculty Mentor(s):* James Diller

Studies have shown that creative performance can be hindered by experiencing high levels of stress. However, more research is needed in determining the relationship between creativity types and stress. There is also conflicting research on how stress levels evolve from freshman year of college to senior year. The current study is an adaptation from an Eastern Connecticut State University Research Methods Core project. There are five creativity type categories (self/everyday, scholarly, mechanical/science, performance, artistic) that participants can qualify in and it is possible for someone to identify in more than one. Eastern Connecticut State University students will complete a questionnaire packet comprised of the Kaufman Domains of Creativity Scale, the Perceived Stress Scale, The Conception of Creativity Questionnaire, The Creative Requirement Questionnaire, and demographic questions. Hypothesis 1 predicts that participants with performance or artistic creativity types will experience more perceived stress than participants with self/everyday, scholarly, or mechanical/scientific creativity types. Hypothesis 2 predicts that college freshman experience more stress and lower scores for creativity compared to seniors. Hypothesis 3 predicts that the more creativity that is necessary in a person's job, the less perceived stress they experience. These results will add to the literature by describing specific instances where there is or is not a significant relationship between creativity type and perceived stress. The results will also help in determining the evolution of stress throughout a student's college career. If universities know more about students' stress and creativity type, programs could perhaps be implemented to help students who are struggling.

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### **Diversity Initiative for ECSU Students**

**Viana Van**

(Psychological Science)

*Faculty Mentor(s):* Peter Bachiochi

To fulfill ECSU's mission statement in promoting diversity and inclusion among students, a diversity training is in the works. In higher education, it is common for diversity training to be implemented among faculty but is rarer for their students. In order to develop the most effective training, there will be a needs assessment run across Resident Assistants with questions concerning their thoughts, attitudes, and perceptions about ECSU's involvement in managing minorities on campus. Focus groups will be conducted with a discussion framed around students' insight about campus climate and a future diversity training (groups include: OLAS, Black Student Union, FEMALES, MALES and students of varying abilities). The diversity training will focus on understanding unconscious biases and will be offered to all ECSU students. This presentation will include a summary of previous diversity trainings (i.e. what makes a diversity training effective), the goals of the diversity training and its implications for ECSU, and analyses of the comments collected from the focus groups (RA's and clubs on campus). Within the presentation, the value of a diversity training, past research, what the diversity training will be like, and a data analysis of the content collected from the focus groups will be discussed.

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## **Reproductive Justice and Incarcerated Women**

**Jacquelin Bessette**

(Sociology, Anthropology, Criminology and Social Work)

*Faculty Mentor(s):* Mary Kenny

This presentation will focus on reproductive healthcare for incarcerated women. I provide a brief outline of the history of eugenics in the U.S., women's activism in changing these policies, and contemporary obstacles to providing or improving reproductive healthcare to women in prison. I then focus on more recent tactics in the U.S. that coerce incarcerated women to halt reproduction through sterilization, which violates standard ethics protocols for informed consent. I conclude with a brief discussion of measures to address that medical negligence towards women in prison and enhance reproductive justice.

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## **Acquiring Prescription and Non-Prescription Drugs for Recreational Use through Technology and Social Media in Eastern Connecticut**

**Spencer Eaton, Andrea Ferrigno, William Malinowsky, Carley Dolan**

(Sociology, Anthropology, Criminology and Social Work)

*Faculty Mentor(s):* Mary Kenny

Our presentation highlights the role of social media and the internet in shaping 21st century recreational drug use. Prescription and non-prescription drugs for recreational use are readily available via social media and other technology tools. Our research team focused on the availability of both prescription and non-prescription drugs for recreational use via social media and the internet among young adults in eastern Connecticut. We conducted in-depth interviews with 11 people (4 female, 7 male), ages 19 -45. The presentation will focus on 5 key themes that emerged from our research: technology facilitates drug acquisition, the internet is the new drug dealer, accessibility and availability are strongly associated with the evolution of synthetic drugs, social media facilitates the normalization of recreational drug use of both prescription and non-prescription drugs, and acquisition of drugs through the internet facilitates evasion of state legal protocols.

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## **A Realistic Picture of Certified Nurse Attendant (CNA) Roles, Rights, And Responsibilities**

**Majorie Kabemba, Chelsea Fields, Nikita Moreira, Nicole Phillips, Janicia Spruielle**

(Sociology, Anthropology, Criminology and Social Work)

*Faculty Mentor(s):* Mary Kenny

Certified Nursing Assistants (CNAs) provide care to patients and assist them in daily activities. Job responsibilities vary by type of facility and individual versus institutional care. Using in-depth interviews and participant observation, our team explored the challenges, opportunities, and long-term goals of CNAs. All 5 members of our research team had direct experience working as a CNA and used snowball sampling to interview other CNAs. Results show that key functions CNAs are expected to provide are carried out with little training, decision-making authority, or support. This includes intensive and consistent reassurance and comfort for a large patient load, despite the lack of financial and physical support. Job satisfaction is low due to chronic stress (reinforced by the personal liability CNAs are subjected to for patient well-being and security) and turnover is high. This negatively impacts patients, their peers, and the overall workplace environment. CNAs report being bullied by administrators and other staff, and excluded from events and consultations, even though they are charged with being the "eyes and ears of the patient." Other concerns include low wages (CNAs are one of the lowest paying jobs in the healthcare industry, along with food services workers and housekeeping). Many CNAs are the head of their households and work multiple jobs to provide for their families. Population statistics show that the geriatric population (80+) is the fastest growing demographic and it is predicted that the need for CNAs will grow by eleven percent by 2026.

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## **Helping or Harming hands: Aid, Development and Humanitarianism in Haiti**

### **Brianna Prentice**

(Sociology, Anthropology, Criminology and Social Work)

*Faculty Mentor(s):* Mary Kenny

This presentation will discuss the socio-political impact of aid, development projects, and humanitarianism in Haiti. I briefly describe three key issues: extraction, the white savior complex, and sustainable solutions. Haitians are often left out as decision-makers or planners of development projects and resource allocation. Foreign governments, NGOs and religious organizations have all been accused of prioritizing donor preferences over the well-being of Haitians, especially after the 2010 earthquake. Financial aid and structural assistance is often provided with steep conditions and with donor-driven benefits or foreign salaries as the major costs, leaving little long-term benefits for the majority of Haitians. Numerous studies, films, and reports have chastised foreign aid and charities, especially orphanages run by U.S. missionaries, for their lack of collaboration or training of locals. Sustainable development is closely associated with transparency about funding, accountability, and prosecution of those who divert funds.

## **Animal Cruelty as Represented in the Connecticut Post: A Qualitative Content Analysis of the Way Animal Cruelty is Reported in a Popular Connecticut Newspaper**

### **Danielle Gallagher**

(Sociology, Anthropology, Criminology, and Social Work)

*Faculty Mentor(s):* Nicolas Simon

This presentation will discuss how animal cruelty is represented in The Connecticut Post from January 1, 2008- to January 1, 2018. Using grounded theory, 301 articles were identified, reviewed, and coded to understand how animal cruelty was presented to the newspaper readers. Analyses included the type of cruelty that took place, the fate of the animal, and specific perpetrator demographics. Findings indicated that many of the articles were coded for gross neglect (42%) followed by torture (34%), awareness (21%), organized abuse (2%), and sexual abuse (1%). Findings also revealed that a majority of the crimes that resulted in death were coded for torture (63%). In contrast with prior research, the results indicated no significant correlation between animal torture and domestic violence ( $r(8) = .314, p = .377$ ). Finally, findings revealed gender effects including that females were more likely to be reported as perpetrators of crimes coded for gross neglect, while males were more likely to be involved in torture. Limitations and future research possibilities will be discussed.

## **Autoethnography of Food Security in New London, Connecticut**

### **Julie Garay**

(Sociology, Anthropology, Criminology, and Social Work)

*Faculty Mentor(s):* Nicolas Simon

While many discussions focus on food insecurity and the consequences of it, fewer people discuss a relatively new concept: food security. Food security is the ability to access and afford healthy, locally grown, nutritious and culturally appropriate foods in one's community. This presentation will discuss what food security looks like, how an organization can promote food security, what the consequences are of food security, and most importantly, how it can help the community to heal. By volunteering at FRESH, a food justice organization in a Latino community of New London (Connecticut) for eight years, I observed how individuals and the community feel about food. Not only the food that people are constantly exposed to, but most importantly the food that is important to their culture. Unfortunately, it is not rare for the members of the community to drive hours to get food. To analyze what I observed, I used autoethnography and participant observation. In this presentation, I will explain how food security does not only provide healthy nourishment for the physical body, economic relief for marginalized and underserved groups, but it also nurtures the soul by promoting solidarity within members of the community. I will conclude by raising an

important question: How could we promote food security to fight against food Apartheids and help communities to heal?

### **Communities Unite: An Autoethnography of the Resistance to Gentrification in Chinatown, Boston**

**Tara Nguyen**

(Sociology, Anthropology, Criminology, and Social Work)

*Faculty Mentor(s):* Nicolas Simon

Gentrification, or the displacement of working-class families and communities to make room for middle- and upper-class amenities, impacts neighborhoods throughout the nation. With an influx of higher-income residents, crime and poverty rates decrease in areas that were once riddled with such issues, and more amenities are put into place for the new residents to enjoy. However, such amenities exclusively benefit a select few, namely the richer and whiter newcomers, and push lower-income, typically minority families out. This inequality has not come without pushback, though, as original residents and other advocates have come together to organize against gentrification. In examining Boston's Chinatown through autoethnography and participant observation, I found that although gentrification poses a major threat to the existence of Chinatown, the residents and their allies have resisted being gentrified out of existence through organizations such as Chinese Progressive Association and the Asian Community Development Corporation. Such organizations have advocated for mixed-income and affordable housing, tenant rights, and policy changes in Boston, and such advocacy has advanced the fight against gentrification and united communities against injustice.

### **Connection Between Funding And Success Of Students Receiving A Special Education In The State Of Connecticut**

**Jamie Perry**

(Sociology, Anthropology, Criminology, and Social Work)

*Faculty Mentor(s):* Nicolas Simon

In recent years, the strength of Special Education programs in schools has dramatically increased, but still is not where it needs to be. Many factors contributed to improve the strength of Special Education programs, and one of them was the amount of funding received. In the State of Connecticut, the Special Education expenditure per pupil varies according to the school district. Is this variation in term of expenditure per pupil impact the outcome of these special education programs? To answer this question, data from each school district was collected from EdSight, the Connecticut Department of Education website. Using the statistical analysis software SPSS, the success of students in Special Education programs, measured by their SAT scores and graduation rates, was compared and contrasted to the dropout rate, special education expenditures, number of special education students, expenditures per special education pupil, town budget, and expenditures per regular education students. I will present my findings to describe the current situation in the State of Connecticut and will suggest ways to extend this research to support and help students who receive the services of Special Education Programs throughout the districts in Connecticut.

### **New England Sport Management Case Competition**

**Alexa Spalla, Mckenzie Maneggia, Ryan Coppinger, Brighton Leonard**

(Sports & Leisure Management)

*Faculty Mentor(s):* Brianna Halladay

On February 28th, 2019, a group of Sport and Leisure Management Majors attended the New England Sport Management Case Competition held at Nichols College in Dudley, Massachusetts. The purpose of this competition was to analyze a case study and present a solution to the study in front of a panel of experienced judges where they critique our presentations and provide feedback on both our cases and presentation skills.

The study was given to all teams two weeks prior to the competition date and we were to defend our case, which consisted of a theoretical professional football team, the Portland Stump Grinders, and their search for a new naming rights sponsor. Using what we learned in the fields of Sport Management, Business, and Economics, we analyzed four propositions to be the new naming rights sponsor, and backed up our final decision with important information and reasoning. This important competition gave us the opportunity to utilize our skills in analysis, critical thinking, and most importantly public speaking in order to convey our final decision and research, which could be a highly possible situation that may occur in the professional field of Sport and Leisure Management. This presentation has helped each of us grow as individuals and as leaders. Because of this experience, we would like to present our discussion at the CREATE Conference as well to expand our horizons in the near future.

### **"One Day At A Time": Representations of Latinx Families**

**Eve Jimenez-Sagastegui**

(Women's and Gender Studies)

*Faculty Mentor(s):* Maureen McDonnell

One Day At A Time, or One Day for short, is a show created in 2017 at a time where the public opinions of the Latinx community and immigration weren't all positive. One Day's goal is to bring the viewer into the life of a Cuban American working class family and present all the challenges they face during 2017. It is not meant to be a political show but it does show the way politics has affected their lives. This show was approved for a third season due to an impassioned social media campaign where it had encouraged groups like National Hispanic Media Coalition, UnidosUS, and other civil rights activist groups to speak up and take action against the termination of the show. Unidos went as far as to compose an open letter to Netflix providing support on why to save the series. This united response to One Day, a show that addresses topics of mental health, sexualities, genders, lack of veteran aid, economic hardships, immigration, sexist work environment, and many more topics, shows the extent of want for these issues to be addressed and spoken about. "Latinx communities are 72% more likely to stream video more than any other group," the letter addresses. Yet with this high percentage of Latinx communities being more likely to stream and "44% of the nation's most avid theatregoers" (Schmidt), there is a limited amount of representation of Latinx communities in the media. UCLA Hollywood Diversity Report reports that there are only 2.7% of Latinx individuals that are given speaking roles in films in 2016. One Day's social campaign shows the enthusiasm of viewers wanting this positive and relatable representation. It is a story about a family, not a story about gang members or a Latinx lover which is new for American shows with hispanic leads.

In this presentation I hope to address how media is used as a tool that advocates for representation; how media has given a voice to minorities, who even when they are the majority of consumers still don't have a strong enough voice to be acknowledged. Examining the correlations with public reception and desire for representation, the realities of Latinx families and the topics One Day addresses. I will use scholarly context to support how addressing these issues and bringing attention to them may benefit the Latinx community and those who are not exposed to the Latinx community as frequently.

## **ORAL PRESENTATIONS: COM 260 INTRO TO PUBLIC RELATIONS**

### **Public Relations plan for Shawn's Cupboard**

**Steven Post, Seth Rohrberg, Matt Robidoux, Spencer Pratt, Harrison Proch**

(Communication)

*Faculty Mentor(s):* Chris Ayeni

Public Relations plan for Shawn's Cupboard

### **Examining PR for Frog Bridge Gymnastics**

**Claudia Daley, Brooke Cleary, Mark Billingsley, Courtney Downer, Griffin Archambawll**  
(Communications)

*Faculty Mentor(s):* Chris Ayeni

We will examine how public relations will aid in helping improve the business of Frog Bridge gymnastics which is located in Windham, Connecticut. We will examine problems of the organization and see how implementing PR strategies can help the business.

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### **H&M company**

**Nena Davey, Jenna Delacruz, Madeleine Dalberg, Matt Curtis**  
(Communication)

*Faculty Mentor(s):* Chris Ayeni

Class presentation for a Campaign on the H&M company

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### **PR Plan for Sal's Pizzeria**

**Joyce Figueroa, Kay Kagabo, Taylor Garger, Will Lindquist, Stephanie Kula**  
(Communication)

*Faculty Mentor(s):* Chris Ayeni

Discussing our PR plan for Sal's Pizzeria, which is located in South Windsor, CT.

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### **Wallingford YMCA**

**Fatima Landeros, John Oliveira, Christian Lathrope, Jack Matheson**  
(Communication)

*Faculty Mentor(s):* Chris Ayeni

Spread awareness on children's health.

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### **TimTam Marketing Case**

**Courtney Regan, Taylor Danielczuk**  
(Communication)

*Faculty Mentor(s):* Chris Ayeni

Since 1964, Tim Tam cookies have thrived in their proud homeland- Australia. The Arnott Company launched the treat, and has since developed the cookie to a four flavor variety. Locals claim a package of Tim Tams does not last in their homes longer than a couple of days. Who could resist the “smoothest creamy center...sandwiched between two layers of crunchy deliciousness and smothered in the sweet embrace of signature Tim Tam chocolate coating?” (Pepperidge Farm, 2019). With such achievements in Australia, Pepperidge Farm, Arnott’s sister company, made the decision to introduce the Tim Tam cookie to the United States for a limited time each year in Target chain stores, starting in 2008. Even doing so, the Tim Tam cookie does not hold a reputation in America that compares to its popularity in Australia, or even New Zealand. Our mission is to develop a promotional campaign to enhance brand awareness of the notorious Australian cookie throughout the United States. We will integrate several media vehicles, including television and magazines. We intend to raise American sales of the Tim Tam cookie by 20%. Our advertisements will be primarily targeted at young children (ages 3-6), young adults (ages 12-17), and the parents of both these age groups. The campaign will run from October 2019 - September 2020, in hopes that the Tim Tam will soon be viewed as a satisfying family cookie in American households.

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### **The Power Of Yoga**

**Sienna Roper, Marlon Ribeiro, Jarrett Soltis, Courtney Wright, Adrian PizarroSlevins, Alexander Ramos**

(Communication)

*Faculty Mentor(s):* Chris Ayeni

Statement of opportunity: The Yoga Farm is a new studio. They offer a wide range of classes that are available to people of all ages. The opportunities with this studio is unlimited. Yoga benefits a human body immensely.

Research: Yoga is important for people to partake in because it offers the body a relaxed mindset to move through their daily lives better

Target audience: All ages and all genders

Objective: To improve The Yoga Farms studio by using effective media to promote the business

Strategy: Use effective research findings about the studio and how yoga benefits a person. Mind and body.

Planning/Actions:

Interview with owner

Tour guide around the studio/ classes

A well done presentation with all the information about the studio, yoga, target audiences and how we can promote the business correctly

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### **Public Relations Presentation**

**Mark Dunning, Aidan Gagnon, Samson Herbert, Justin Izzarelli, Antonio Jho-Baptiste**

(Communications)

*Faculty Mentor(s):* Chris Ayeni

Our group will be doing a presentation on a company that helps for the community and how its impact will make the community better.

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### **PR Promotion for business**

**Hason Peart, Jessica Merluzzi, Lakur Mitchell, Moriya Phillips, Joseph Merheb**

(Communications)

*Faculty Mentor(s):* Chris Ayeni

PR ideas on how to promote a local business.

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### **Information Campaign for Willimantic Brewing Company**

**Ryan Tarko, Andrew Syphers, Andrew Zaino, Maura Stickley, Kendra Walz, Sone Sourignamath**

(Communications)

*Faculty Mentor(s):* Chris Ayeni

We will be presenting our Public Relations campaign for Willimantic Brewing Company through a class project in intro to public relations. We will be presenting our opinion on how we can strengthen and evolve this local company's public relations efforts.

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### **Camp Horizon PR Project**



**Kayla Thomas, Macey Vidal, Jake Verboven, Holden White, Javier Cabrera**

(Communications)

*Faculty Mentor(s):* Chris Ayeni

Camp Horizon is a Camp for people with disabilities located in South Windham Connecticut. Our project/goal is find a small business company in state and find ways that any public relation activities could help do more for them as a company. Since we are aware that the organization as of now is in need of getting the word out about what they do in Connecticut, this project seemed best fit to help and further the company to the next level.

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### **Freedom Service Dogs of America**

**Aiden Gagno, Antonio Jno-Baptiste, Justin Izzarelli, Samson Herbert, Mark Dunning**

(Communications)

*Faculty Mentor(s):* Chris Ayeni

We will develop a PR campaign for a client- Freedom Service Dogs of America

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## **PANEL DISCUSSIONS**

### **Production Design for "The Wolves"**

**Aubrie Curcio, Emma Kellermann, Lisa Wilson**

(Theatre)

*Faculty Mentor(s):* Kristen Morgan, Tim Golebiewski, Travis Houldcroft, Anya Sokolovskaya

We will present our process for script analysis, research, and design for the set, sound, and costume design for the recent Theatre main stage production of "The Wolves" in the DelMonte Studio Theatre. Working with our faculty mentors and director, Professor Kristen Morgan, we re-created and re-imagined a corner of an indoor soccer facility where the story of an all-girls high school soccer team came to life. The culmination of our creative work was a series of public performances of the play.

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**Exploring Memory, Family, and Identity in Memoir:** *Panel discussion encompassing the three presentations below:*

### **"Anything"**

**Mia D'Amico**

(English)

*Faculty Mentor(s):* Susan DeRosa

"Anything" is a 12-page memoir, narrated in disjointed snippets and suddenly-recalled memories, about the consequences of insidiously abusive parenting. The narrator explores the ways in which her mother emotionally manipulated, abused, and controlled through the poignant, resurfacing memories she has been left with. She identifies these patterns of abuse as symptoms of her mother's narcissistic tendencies. The narrator eventually, after studying painful childhood episodes, reveals the reasons why her mother grew into the person she was as a parent. In doing so, she develops an understanding of her mother's personality and the factors which shaped her, and forgives her mother.

However, she also gives children of abusive parents another option besides forgiving, forgetting, and moving on, simply because "family is family." She insists that forgiveness must not always lead to reconciliation, and that giving oneself permission to forgive and detach from her abuser is, in fact, justified, no matter the relationship. The behaviors born out of her mother's own painful past, continue the cycle of abuse and,

subsequently, the cycle of estrangement in the narrative.

Within this nonlinear tracing of different periods in her life, intertwined with her musings and digressions, the narrator utilizes episodic narrative organizational patterns to mirror the inner workings of the brain of an abused individual who, up until recently, did not understand that their parents were in fact abusive. In doing so, she illustrates the damage to memory, self-confidence, decision-making, and social skills that narcissistic parenting can cause. I plan to present on a panel with 2-3 other creative nonfiction writers.

### **Letters to Abbey**

**Emily Deloge**

(English)

*Faculty Mentor(s):* Susan DeRosa

This memoir, “Letters to Abbey,” will include a series of interconnected vignettes which explore family-dynamics, gender roles, as well as relationships. Some of the vignettes will be written in epistolary form, letters to the narrator’s sister Abbey, about the importance of self love. Because this is a family-based memoir, the writer must negotiate the ethical lines of how to tell the stories of family and friends that are intertwined with her own. In writing this memoir the author strives to be honest with her readers as well as honest with herself while working in the constraints of memory which can often be fragmented. These short memoirs will span throughout the writer’s childhood through early adulthood as the writer embarks on a journey of self-discovery through story telling. To move the narrative forward chronologically, the writer also focuses on the role that nature has played in helping her to understand the complexity of herself and how others in her life have influenced her identity.

I plan to present on a panel with 2-3 other creative nonfiction writers.

### **“The Hero’s Journey of Self Discovery: A Queer Individual’s Expedition of Identity and Love”**

**Samantha Price,**

(English)

*Faculty Mentor(s):* Susan DeRosa

On a panel with at least two other writers, the author will read excerpts from her memoir titled “The Hero’s Journey of Self Discovery”, while also discussing the challenges of writing a piece of creative nonfiction. This memoir tells the story of the author discovering and coming to terms with her sexuality and the trials she encountered along the way.

The journey of self-discovery queer individuals embark on about their sexual orientation and identity can be compared to the Hero’s Journey found throughout different stories in fiction. The author’s memoir chronicles the difficult and long expedition she took in order to come to terms with her sexuality, specifically asexuality. In addition, the author weaves in snippets of famous Hero’s Journeys from pop culture, including Harry Potter, Star Wars, and Lord of the Rings, comparing the main characters’ struggles and challenges with her own. Along with reading from her memoir, for this presentation, the author will discuss her writing and self-reflection process. She will also discuss the challenges she still faces today as a member of the LGBT community.

## POSTER PRESENTATIONS

### **<sup>1</sup>Discovery of Potential Antibiotic Producing Bacteria From Eastern's Field Research Center At Church Farm**

**Azalia Martinez-Gonzalez**

(Biology)

*Faculty Mentor(s):* hulveyj@easternct.edu

During fall semester of 2018, students in Biology 334 (General Microbiology) set out to collect soil samples from Church Farm in Ashford, CT in order to culture bacteria that may be producing antibiotics. This effort was part of the Tiny Earth network, a global collective of science educators and students with the aim of student-sourcing antibiotic discovery. Eight soil samples were collected, and the bacteria cultured from the soil were screened for activity against relatives of the ESKAPE pathogens, a group of bacterial pathogens known to exhibit resistance to major classes of antibiotics. Activity was assessed by co-culturing the unknown bacterial isolates with safe ESKAPE relatives and looking for zones of inhibition, which might indicate the production of antibiotics that could be useful in combatting antibiotic resistance. In addition, biochemical tests and DNA sequencing were performed in order to characterize the unknown soil bacteria. In total, 14 bacterial isolates were characterized over the course of the semester, which will be contributed to the Tiny Earth pipeline for antibiotic discovery.

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### **<sup>2</sup>Characterization Of White And Black Seed Mutants In The Model Legume Plant Medicago Truncatula**

**Roshani Budhathoki**

(Biology)

*Faculty Mentor(s):* Vijaykumar Veerappan

Anthocyanin and proanthocyanidin (PA) are flavonoid compounds produced by plants that provide tolerance to biotic and abiotic stresses. These compounds when consumed by humans as fruits, vegetables and seeds are known to prevent many diseases. To identify new regulators of anthocyanin and PA accumulation, we are using a forward genetic approach in the model legume plant *Medicago truncatula*. *M. truncatula* wild-type leaves show reddish purple anthocyanin pigmentation whereas seeds are light brown in color due to the accumulation of PA. By screening *M. truncatula* Tnt1 retrotransposon mutant population, we identified two mutants with white and black seed phenotypes caused by deregulated PA accumulation. White seed mutant also shows complete loss of anthocyanin pigmentation in vegetative organs such as leaves, petiole and stem. I will present detailed phenotypic characterization of mutants. Previously, it was shown that mutations in *Mttt8* and *MtMYB5* genes result in white and black seed phenotypes, respectively. I will test whether white and black seed mutants are novel by using a PCR genotyping assay to detect Tnt1 insertions in *Mttt8* and *MtMYB5* genes. To recover additional mutations from mutants towards identifying the genes underlying defective phenotypes, I purified genomic DNA from mutants to perform whole genome sequencing. Discovery of novel transcriptional regulators of anthocyanin and PA will help us to modify crops for improved nutritional value and metabolic engineering to produce these compounds in large quantities for pharmaceutical and industrial applications to improve human life.

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### **<sup>3</sup>Current Understanding Of The Etiology And Treatment Of Pediatric Hydrocephalus**

**Shenley Cadet**

(Biology)

*Faculty Mentor(s):* Ross E. Koning

Hydrocephalus is an illness in which cerebrospinal fluid (CSF) collects in the cerebral ventricles, which then leads to their inflammation. Without treatment, increased cranial pressure can lead to neurological damage and death. The main causal mechanisms of hydrocephalus are post-hemorrhagic hydrocephalus, congenital aqueduct stenosis, myelomeningocele, and brain tumors. Approximately one child is born with hydrocephalus for every 1000 births per year. In some non-developing countries, the birth rate with hydrocephalus is greater than 200,000 per year. Surgical treatment can relieve cranial pressure in diagnosed children. Patient brains are imaged with CT scans or NMR prior to treatment to determine the best course of action. In most cases, a ventriculoperitoneal shunt (VPS) placed into the ventricle redirects CSF buildup to the body cavity. According to recent research on pediatric hydrocephalus patients, the cause of VPS failure is primarily due to mechanical blockage, regardless of the type of shunt used. In the other cases, endoscopic third ventricle ventriculostomy (ETV) is performed to relieve pressure by creating incisions with an endoscope. Unfortunately, 80% of ETV treatments still require the placement of a VPS after initial surgery. In both approaches, shunt alteration rates were greater than 50%. Most children develop normally after treatment, but about 20% of children face developmental, learning performance, or behavioral challenges. The aim of this project is to provide a comprehensive and current understanding about hydrocephalus, its diagnosis, its causes, and its treatments. The prospects for children, in regard to both physiological and mental, condition will be presented.

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### **<sup>4</sup>Does the Odd-2 Transcription Factor Regulate the Wnt Signaling Pathway in Caenorhabditis Elegans?**

**Gregory Carlson**

(Biology)

*Faculty Mentor(s):* Amy C. Groth

The odd-skipped genes and the Wingless/Integrated (Wnt) signaling pathway both play roles in development across various taxa. Odd-skipped genes encode zinc finger transcription factors. The Wnt pathway is a cell signaling pathway associated with cell proliferation in embryonic development, and with some human cancers. Binding of the ligand, Wnt, to the frizzled receptor results in destruction of GSK-3 $\beta$  and the stabilization of  $\beta$ -catenin. Studies in human cancer have shown that an odd-skipped gene represses cell proliferation and regulates levels of GSK-3 $\beta$  and  $\beta$ -catenin, but effects on the expression of Wnt itself have not been tested. We are investigating the effects of odd-skipped on the Wnt pathway in the model organism *Caenorhabditis elegans*, a nematode species. We are utilizing green fluorescent reporter strains for *gsk-3* and *egl-20* (GSK-3 $\beta$  and a WNT ligand). Cells that express each gene can be visualized by fluorescence microscopy. We plan to knock-down *odd-2* expression via RNA interference (RNAi). Because *odd-2* feeding RNAi is ineffective in normal worms, we will use the NL2099 (*rrf-3* mutant) strain, which shows a much stronger RNAi response due to the *rrf-3* mutation. We are crossing NL2099 worms to the reporter strains to create strains that are homozygous for the *rrf-3* mutation and the fluorescent reporter. Once these worms are created, we will remove *odd-2* function by RNAi and look for changes in fluorescence. Expression changes will indicate an effect of *odd-2* on the worm Wnt pathway, and may help us better understand the regulation of the human pathway.

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### **<sup>5</sup>Evidence For Horizontal Gene Transfer Of Xenobiotic Detoxification Genes In A Plant Pathogenic Fungus**

**Brianna Fuentes**

(Biology)

*Faculty Mentor(s):* Jonathan Hulvey

Fungicide resistance in crop pathogens is a threat to agricultural productivity, and understanding the mechanisms and evolution of resistance is important for basic and applied science. Horizontal gene transfer of antibiotic resistance genes is well documented, though in fungal microbes this phenomenon is not well understood. In this study, the genome of *Sclerotinia homoeocarpa* was examined to determine if horizontal gene transfer served as a mechanism for the acquisition of xenobiotic detoxification genes. A previous RNA-seq experiment identified genes that were overexpressed in fungal isolates with resistance to multiple fungicides. A parallel analysis of the genome identified 380 genes that displayed evidence of being acquired through horizontal gene transfer. These genes were sorted into sixty-one gene clusters based on their proximity to other genes. Comparison of genes identified from both analyses identified a total of 28 that met criteria for potentially being involved in fungicide resistance and having been acquired through horizontal gene transfer. These gene candidates are ideal for future investigations into the mechanisms and evolution of fungicide resistance.

### **<sup>6</sup>The Effects Of Turbidity On Respiration Rate Of The Bridle Shiner, *Notropis Bifrenatus***

**David Junga**

(Biology)

*Faculty Mentor(s):* Kristen Epp

Turbidity is a measure of suspended particulates in water and causes murkiness by scattering light. From an ecological standpoint, the clarity of an aquatic organism's environment can affect its survival and reproduction. Changes in turbidity have been linked to changes in metabolism and behavior in fish. Changes in turbidity may be a contributing factor to the decline of an imperiled fish species, the Bridle Shiner (Gray et al. 2011). By simulating low levels of turbidity, this study aims to investigate the short-term effects of changes in turbidity on Bridle Shiner metabolism. Using an aquatic respirometry system, respiration rate of subjects will be measured when placed in water with 0, 10, and 25 NTU. If Bridle Shiner respiration rate increases in higher turbidity treatments (10 & 25 NTU) as compared to the clear water control (0 NTU), changes in turbidity may have metabolic consequences in the natural habitat. Perpetual increases in metabolic rate due to turbidity may create an imbalance in Bridle Shiner energy budgeting. An inefficient management of energy budgeting could negatively affect this imperiled species.

### **<sup>7</sup>Do Odd-Skipped Genes Regulate *Elt-2* Expression In *C. Elegans*?**

**Rebecca Laguerre**

(Biology)

*Faculty Mentor(s):* Amy C. Groth

In humans, there are two odd-skipped related (*Osr*) transcription factors that are important for the development of many tissues, such as the kidney. They are also involved in pancreatic, gastric and lung cancer. Two homologous genes (*odd-1* and *odd-2*) are found in the microscopic nematode, *Caenorhabditis elegans*. When *odd-2* expression is knocked down with RNA interference (RNAi), worms die as larvae. Both odd genes are expressed in the intestine. We hypothesized that genes that are expressed in the intestine might be transcriptional targets for the odd genes. *Elt-2* is expressed throughout the intestine, and its promoter contains a binding site related to known odd-skipped binding sites from mice and flies. We have obtained a reporter strain that has GFP fused to the end of *elt-2*. We have crossed this reporter strain to a strain that has an increased RNAi response. To determine if the odd genes regulate *elt-2*, we will perform RNAi in this strain and visualize GFP expression with confocal microscopy. A decrease in *ELT-2* expression would

indicate that the odd gene normally activates its expression. An increase in ELT-2 expression would indicate that the odd gene normally represses its expression. The results of these experiments will provide insight into the transcriptional network that contributes to intestinal development in worms, and potentially human developmental and disease pathways.

### **<sup>8</sup>The Effects of Reduced Astrocyte Beclin 1 on Retromer Trafficking and Receptor-Mediated Phagocytosis in Alzheimer's Disease**

**Evelyn Lemus**

(Biology)

*Faculty Mentor(s):* Kurt Lucin

Phagocytosis helps maintain central nervous system homeostasis by removing unwanted cellular debris which can exacerbate inflammation and neurodegeneration. Consequently, a hallmark of Alzheimer's disease is the accumulation of amyloid beta plaques in the brain accompanied by reduced levels of the autophagy protein Beclin 1. It is currently unclear which cells experience reduced Beclin 1 and how it might affect disease progression. Here we studied astrocytes due to their high abundance in the brain and ability to phagocytose and clear amyloid plaques. We show that reducing Beclin 1 in C6 astrocytes impairs the phagocytosis of latex beads via confocal imaging. Furthermore, we show that reducing Beclin 1 is associated with diminished levels of retromer, a protein involved in receptor trafficking, and the phagocytic receptor SR-B1, as measured by western blot. These findings show a role for Beclin 1 in astrocyte phagocytosis and suggest a mechanism by which phagocytosis may become impaired in Alzheimer's disease.

### **<sup>9</sup>The Effect Of Simulated Microgravity On The Ability Of Primary Cortical Cells To Produce Neurons**

**John Meade**

(Biology)

*Faculty Mentor(s):* Barbara Murdoch

Since the 1960s, spaceflight has been a tactic for exploring our solar system. However, it is no mystery that prolonged spaceflight can also be accompanied by cognitive deficit, which can pose long term issues for astronauts. These symptoms may be due to changes in neuron numbers or differentiation. We hypothesized that exposure to simulated microgravity would result in a decrease in neuron production. To test our hypothesis, we isolated primary cortical cells from embryonic mice (E13.5) and used them to produce neurospheres in vitro. Single cells dissociated from the resulting neurospheres were placed under either simulated microgravity or normal gravity conditions for 4 days. After 4 days, the cells were retrieved and tested for their ability to form neurons. Neurons were detected using antibody staining during immunocytochemistry and detected using fluorescent confocal microscopy. Confocal images and Image J were used to quantitate the number of neurons produced. Simulated microgravity resulted in altered neuron numbers. We are continuing with more experiments to test our results.

### **<sup>10</sup>Next Generation Sequencing Reveals the Scorpion Telson and Tail Microbiomes**

**Maxime Parent, Lauren Atkinson, Christopher Shimwell**

(Biology)

*Faculty Mentor(s):* Barbara Murdoch, Matthew Graham

Animal venoms are complex mixtures of molecules including proteins. Several studies have investigated their therapeutic potential for treating conditions such as diabetes, high blood pressure, and chronic pain. Venom research is restricted in part by the difficulty in obtaining the venom and in chemically recreating the venom's bioactive molecules. Past research in cone snails showed that bacteria live in their venom ducts, suggesting that bacteria may contribute to the manufacture of cone snail venom. To date, no studies have tested for the presence of microbes in scorpion venom. It is known that scorpion venom contains

antimicrobial peptides that are capable of fighting off multi-drug resistant bacteria and that scorpion stings can lead to infection. We hypothesized that the scorpion telson, which produces the venom, contains microbes. We used bacterial and archaeal primers to amplify the 16S rRNA gene from the telson of two different species of scorpions, *Smeringurus mesaensis* and *Hadrurus arizonensis*, and compared this to their tail tissue. Next generation sequencing, bioinformatics and statistical analyses, were used to confirm the presence, quantity and identity of the bacteria and archaea in the scorpion tissues. Here we show a comprehensive report with unprecedented detail of the bacteria and archaea in the telson and tail tissues of two scorpion species. Our results may change the way we view scorpion biology and provide clues for the synthesis of novel, potentially therapeutic molecules.

### **<sup>11</sup>Characterization Of Deregulated Anthocyanin Accumulation Mutants In The Model Legume Plant *Medicago Truncatula***

**Kaila Robinson**

(Biology)

*Faculty Mentor(s):* Vijaykumar Veerappan

Anthocyanins are flavonoid compounds produced from plants that give blue, red, and purple colors seen in fruits and vegetables. Anthocyanins are beneficial to human health as they act as antioxidants. Research has shown that foods rich in anthocyanin are linked to enhanced memory and preventing age-related neurological diseases such as Alzheimer's. Anthocyanin accumulation in the leaves, stems, and roots are used as a protective mechanism against environmental stresses such as cold and drought. The goal of my research project is to identify novel transcriptional regulator genes that control anthocyanin accumulation in the model legume plant *Medicago truncatula* by forward genetics. Dr. Veerappan screened Tnt1 retrotransposon mutant population and isolated seven mutants with different anthocyanin pigmentation phenotypes. These phenotypes include: (a) increased number of anthocyanin spots in leaves, (b) enlarged anthocyanin spots in leaves, and (c) excessive accumulation of anthocyanin pigments in vegetative organs. Secondary screening was performed to confirm the defective phenotype in one of the mutants. My goal is to perform secondary screening of the other six newly identified mutants to confirm their defective phenotypes in anthocyanin expression. Wild-type plants will be grown as the control. I will examine phenotypic characteristics of anthocyanin accumulation in the leaves, petiole, stem, and flowers. I will also characterize the seed phenotype and analyze the abnormal pigmentation caused by proanthocyanidin (also a flavonoid compound). My long-term goal of this project is to identify the genes responsible for the deregulated anthocyanin accumulation in mutants and to discover new genes that regulate anthocyanin expression.

### **<sup>12</sup>Screening Bacterial Isolates From Church Farm For Antibiotic Production**

**Karen Sanchez**

(Biology)

*Faculty Mentor(s):* Jonathan Hulvey

The rise of antibiotic resistant bacteria is an urgent concern for health care and justifies the need to find new sources of antibiotics. Many important antibiotics have been discovered from bacteria isolated from soil. Church Farm is a field research center used by Eastern biology students and faculty, and here we seek to characterize bacteria cultured from soil samples collected during Fall semester of 2018. In this study we will perform biochemical tests and DNA sequencing to characterize 20 unknown bacterial isolates that from preliminary data appear to be producing antibiotic compounds. Replica plating will be used to screen the bacteria in activity assays against nine safe ESKAPE relatives. The ESKAPE pathogens are bacteria known to exhibit resistance to many of the widely prescribed antibiotics however, we will use safe relatives in place of them since they do not pose a health threat to work with in the lab. We will also sequence a portion of the ribosomal 16S rRNA gene in the bacteria to identify the bacterial isolates to taxonomic groups. Results from this study can be contributed to the Tiny Earth network, a global alliance of educators and students seeking to student-source antibiotic discovery.

### **13Identifying a Microbiome in the Brain**

**Liam Stolpe, Evelyn Lemus, Natalie Cummins**

(Biology)

*Faculty Mentor(s):* Kurt Lucin

The community of microorganisms living within and on us is collectively called the microbiome. These microbes participate in various aspects of our metabolic, physiological, and immunological processes. While the composition of the microbiome at most body sites has been extensively studied, little is known about the brain. This is likely due to the tenet that the brain is a privileged sterile organ protected from the body via the blood brain barrier. Interestingly, two recent studies suggest the presence of brain microbial populations. While these studies presented several classes of bacterial populations in extracted brain tissue, the function of these bacteria remained unclear. Here we look to confirm and expand upon those previously reported studies. To do this, we used polymerase chain reaction (PCR) with primers designed to detect bacterial DNA (i.e., the 16S ribosomal RNA gene). To verify our PCR technique could detect bacterial DNA, we isolated DNA from *Escherichia coli* bacteria and were able to visualize 16S via PCR. We next isolated DNA from mouse skin, which is known to contain bacteria, and mouse brain. PCR analysis confirmed that both mouse skin and brain contained bacterial DNA, although mouse brain appeared to contain less bacterial DNA. These studies suggest the presence of a brain microbiome which could have significance for various neurological diseases or conditions. Future studies will look to ensure that the source of bacterial DNA in the brain was not due to sample contamination and will identify which bacterial populations exist within the different mouse tissues.

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### **14Work System Method Analysis of a Publishing Collective**

**Janeidy Villar**

(Business Administration)

*Faculty Mentor(s):* D. Petkov

The goal of the project is to apply the work system method for analysis of the company Kaitaia Publishing. The operations of the publishing collective have many issues including inefficient, time-consuming tasks, no documentation of certain procedures and making decisions based on subjective feelings. Our analysis provides the following conclusions about the current work system and about possibilities for its improvement. Some issues this company experiences are related to the fact that the appraisal of manuscripts is not following uniform criteria and that a decision on the number of books to be printed is made without market analysis or consideration of past sales of similar books. Sometimes staff lose track of requests that have been received for copies of books. Other issues include mistakes in payments to authors or noticing mistakes only after printing has already started which is costly to fix. The company would like to monitor better its contracts with authors. Some constraints the company has include a fear of costs escalating dramatically and a budget limit of \$50,000 for a new system. There are several opportunities to change and improve the work ethic of this system, such as define a clear business process and implement a workflow system to support it, including better training of staff to use it for improved service to authors and the readers buying their books.

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### **15Understanding Customer Reviews Credibility**

**Itzel Aguilar, Melinda Zekiri, Alyssa Syren, Alyssa Oesting**

(Business Administration)

*Faculty Mentor(s):* Stefania Farace

Online customer reviews are a relatively new way to engage with other consumers and gain information about products before making a purchase decision. According to Spiegel Research Center (2017), 95% of shoppers read customer reviews before making a purchase and the purchase likelihood of a product with five reviews is 270% greater than the purchase likelihood of a product without reviews. Product reviews are a way to increase sales by establishing credibility. According to Spiegel Research Center, however shoppers



perceive a five-star rating as being not credible. The products most likely to be purchased are the ones rated between 4.2-4.7. The presence of negative reviews helps build credibility for the product given that 82% of shoppers specifically look for these. When consumers investigate these negative reviews, they spend more time on the website and increase the conversion rate by 67% as a result.

This research aims to study customer reviews and categorize the feedback that is given to companies in order to fully understand this phenomenon of receiving reviews and how credibility can be generated through customer reviews. Our research will help managers in better understanding customer reviews. The reviews that are posted online concern the relationships between business' and society. Customer reviews found on a website, whether it is for a local business or a large corporation, will improve not only individual consumers but also society at large.

### **16User Experience of Mid-Air 3D Touchless Gesture Technology: A Systematic Literature Review Protocol and Preliminary Findings**

**Melat Assefa**

(Business Administration)

*Faculty Mentor(s):* Sukeshini Grandhi

In designing mid-air 3D touchless gesture interactions with technology, it is important to understand the user perspectives of naturalness and intuitiveness within their real-life contexts of use such as home, cars, and public spaces. To understand what characteristics of gestures (e.g. hand shapes, movement styles) can provide insights on user experience, this research proposes a systematic literature review (SLR) of extant research on implementation and user evaluation of gestural-based technology in the field of Human Computer Interaction. One of the challenges is conducting a SLR of studies on “mid-air 3D touchless gestures” is the lack of standard terminology in describing such gestures in HCI literature. Several terms such as touchless, 3-D, free form, free hand, in air and mid-air are used to describe these gestures. Thus, an important step in performing a SLR for this topic requires the development of a protocol that details how library databases are searched, how inclusion and exclusion criteria for research studies are applied and how data extraction from the research papers will be conducted. This poster will present the SLR protocol developed and the preliminary findings.

### **17Current Issues in Document Management and Ways for its Automation**

**Rebekah Brancato**

(Business Administration)

*Faculty Mentor(s):* Dr D. Petkov

Corporate document management is a field that has been growing since its inception in the 1990's. This paper aims to review research on it from the 1990's and 2000's up to the present day. The paper then investigates the present state of this area by analyzing document management systems in use today, as well as case studies on their implementation. The paper provides an overview of current issues, trends, and future considerations for the theory and practice of document management. By understanding the history of past research, the context for how the field has evolved and where it may be going can be better understood. This paper concludes that corporate document management is an essential area for businesses and Information Technology. Further technological developments, affected by the growth of the importance of Artificial Intelligence, will increase the utility of such systems in the near future.

### **18FEASIBILITY OF IMPLEMENTING ECT IN EASTERN CONNECTICUT**

**Megan Cole, Jacqueline Scanlon**

(Business Administration)

*Faculty Mentor(s):* Fatma Pakdil

This undergraduate student research project was conducted by Megan Cole, Jacqueline Scanlon, Deborah Weidner M.D., and Fatma Pakdil Ph.D. in Fall 2019 semester at Eastern Connecticut State University. The main research question analyzed in this project was to find out if Electroconvulsive Therapy (ECT) would be feasible in Eastern Connecticut region. Despite ECT being a treatment option for decades, little research had gone into the economic feasibility of implementing such a treatment in hospital settings in the United States. As there are currently no available ECT treatment centers servicing the population of Eastern Connecticut, those in need of these services must travel significantly long distances for the necessary treatment. The project team collaborated with one of the main healthcare organizations in Eastern Connecticut for this particular project. In light of this gap, the project explored not only the potential of ECT but also comprehensively analyzed the feasibility and profitability of ECT in Eastern Connecticut, using the break-even analysis method. The results of the project revealed that creating a potential ECT treatment center would be profitable in Eastern Connecticut region.

### **19Systems Analysis of Kaitaia Publishing Utilizing the Work System Method**

**Velicity DeAndrade, Shannon Fagan**

(Business Administration)

*Faculty Mentor(s):* D. Petkov

We analyzed a company's business process with the use of Steven Alter's work system method. The work system method is applied to understand, analyze, and improve a system in an organization, whether or not IT is used. The company we are analyzing, Kaitaia Publishing, lacks a clear business process. For starters, we analyze the current as-is system and derive any problems that seem to arise. We reviewed interviews of different employees of the business. After we thoroughly investigated the as-is-system and detected any issues in the business, we analyzed the possibilities for the company. For example, what they can do to improve the quality of running their business successfully. Once this stage was complete, we then created a list of recommendations and justifications to improve the business process and reduce the unnecessary errors being made. Working on this project helped us become more experienced with analyzing a situation and being able to understand that the work system method is a relevant approach for analyzing any organization. Also, we hope that the recommendations from this analysis will assist the publishing company to be more organized and effective.

### **20Bridging the Tacit Knowledge Gap: Insights for Knowledge Management in an Educator Preparation Program**

**Madison Flattery**

(Business Administration)

*Faculty Mentor(s):* Sukeshini Grandhi

Knowledge management is a process of identifying, locating, capturing, organizing and sharing information assets of an organization. While some types of organizational information are explicit and can be easily documented, other types of organizational information tend to be tacit leading to knowledge gaps amongst stakeholders. This study aims to investigate how to capture and organize tacit knowledge in an administrative unit of an Educator Preparation program at a liberal arts university in the Northeast. Specifically, it focuses on the clinical experience segment of the program. This context presents unique challenges for knowledge management as several stakeholders, including student-candidates, faculty-advisors, and supervising teachers are involved in the process. Using surveys and semi-structured interviews, rich qualitative data will be collected from incoming and graduating student-candidates to understand the current practices and challenges in coordinating and completing the clinical experience requirements. Findings and their implications for designing effective communication and coordination strategies for the clinical experience program will be presented.

### **21 Kaitaia Publishing Company: A Work System Method Analysis**

**Madi Flattery, Mike Zisk**

(Business Administration)

*Faculty Mentor(s):* Dr D.Petkov

The Work System Method has been applied in order to analyze the Kaitaia Publishing Collective, a company that publishes books for New Zealand authors. The collective is looking to grow and make money; however, their current work plan does not necessarily match with their new goals. In using this method, we were able to identify and remove any errors that the company experiences as a result of undefined and inefficient work processes. We began by looking at the current system and the inefficiencies that the collective was facing. After identifying the most important areas of operation and their challenges, recommendations have been made. These recommendations will improve the processing time, quality, costs, and overall business relationships with clients and customers. The major areas of improvement for the collective would be to define the business process, formulate work flow, and analyze data. In doing so, the company should implement an integrated work flow system that includes contract and inventory management. Kaitaia Publishing Collective is in a position where there is potential to improve and define their current work system to meet their new goals. In doing this, the company will experience a significant improvement in the success and efficiency of their business functions, reduce errors, and improve overall relationships with customers and clients. This, in turn, will allow the collective to grow and increase its revenue.

### **22 Analyzing College Student Motivations For Caffeinated Drinks Consumption**

**Amanda Heffernan, Megyn Asselin, Lauren Mondak, Adam Hayes**

(Business Administration)

*Faculty Mentor(s):* Stefania Farace

On average 77% of students drink caffeinated drinks. The university of New Hampshire found that 77% of their students drink caffeinated drinks (Olsen, 2013), and the University of Kentucky found that 78% of their students drink caffeinated drinks (Friedmann, 2017). Our main marketing objective is to understand why consumers consume caffeinated beverages even though they are aware of its harmful implications. Our research investigates the motivations that drive college students' consumption of caffeinated drinks. We hope to provide managers with ideas on how to reduce caffeine consumption, especially for students. Therefore, we aim to understand how sales of caffeinated beverages can be decreased. Right now, the caffeine industry has a large stake in the overall economy of most countries. The Special Coffee Association of America (SCAA, 2014) estimated the total economic impact of coffee at \$225.2 billion dollars in the United States. In researching the motivations that drive college students' consumption of caffeinated drinks we aim at providing meaningful insights into marketing strategies that persuade students to reduce their intake of caffeinated drinks.

### **23 To Use or Not Use: An Exploration of Cognitive Biases in Social Media Non-Use and Reversion**

**Anastasios Kilimos**

(Business Administration)

*Faculty Mentor(s):* Dr.Sukeshini Grandhi

People commonly give up using social media and also revert back to using social media. A rational model of decision making would expect people to weigh the pros and cons of using social media, where a net benefit would keep users on social media, while a net cost will make users quit social media. However, a behavioral model of decision making suggests that people make biased decisions due to cognitive limitations when processing complex information. Previous literature on social media use and non-use has shown that the social and emotional pros and cons of quitting or reverting back to social media are numerous and nuanced. Thus, people are less likely to be rational and more likely to show cognitive bias in decisions to quit or revert

to social media. This study explores social media non-use and reversion through the lens of cognitive biases. Qualitative data obtained from 680 respondents to a survey (N=1276) will be analyzed based on three theories of cognitive biases: Peak-end rule, Fading affect bias, and Hyperbolic discounting. Findings will be used to draw implications for design of social media to attract and retain users.

#### **24 EEG LABORATORY PERFORMANCE ANALYSIS USING DMAIC PROCESS**

**Jenna Moreira, Daniel Huacho**

(Business Administration)

*Faculty Mentor(s):* Fatma Pakdil

The students, Jenna Moreira and Daniel Huacho, worked on analyzing an EEG (electroencephalogram) Laboratory at a university-affiliated hospital in CT in BUS 363 Introduction to Six Sigma course. This unit was fairly new to the hospital leading to uncertainty of the potential waste times in the system. The goal of the project was to identify where the potential wastes might have occurred and to minimize the amount of time an outpatient would spend in the EEG process. Through Six Sigma approach using DMAIC process, the team was able to identify the problems, analyze the EEG process, and develop improvement ideas for minimizing average wait time for an outpatient in the system. Current state Value Stream Map was created and used as a base to analyze the system. The data collected from the system were analyzed using several statistical analysis tools such as descriptive statistics, graphical analysis tools, distribution fitting, and control charts. The results of the project are expected to be implemented in decision making processes in the hospital.

#### **25 Work System Method Analysis of Kaitaia Publishing Collective**

**Elizabeth Tucker, Emily Graham**

(Business Administration)

*Faculty Mentor(s):* D.Petkov

This project is analyzing a publishing collective using the Work System Method by Alter. The work system used by Kaitaia Publishing Collective to publish books by New Zealand authors has several identified problems and opportunities. Manuscripts are often misplaced and contract terms are broken by KPC resulting in poor feedback from the authors and investigative action from PEN - an authors' organization - as another consequence. Contracts are written from scratch for each book which takes a significant time to process and comprehend. Quarterly statements are composed with potentially inaccurate data due to the amount of research it takes to obtain the needed metrics. Data is not collected in regards to sales trends therefore it is impossible to know when to order more copies until they are directly requested. All of these problems have been accounted for and analyzed in order to come up with new solutions to KPC's daily challenges. Our recommendations include: storing and organizing critical data in an information system such as the ISBN number and sales history therefore it is easier for the Accounts Clerk to prepare reports and for the Inward Goods and Dispatch Clerk to order more copies. A basic log can be used to track when manuscripts are received and returned as well as where the contract or other materials such as illustrations are located. Such recommendations are planned to be attainable in a reasonable budget.

#### **26 PROCESS MAPPING IN RADIOLOGY SERVICES USING DMAIC PROCESS**

**Emily Vieten, Kaitlin Hohman**

(Business Administration)

*Faculty Mentor(s):* Fatma Pakdil

The students, Emily Vieten and Kaitlin Hohman, focused on process mapping of the services provided in the radiology department at a university-affiliated hospital. Within the radiology department, there are different

modalities: Breast MRI, CT/Cat Scan, CEXA Bone Density Scan, Mammogram, Magnetic Resonance Imaging (MRI), Nuclear Medicine, PET-CT Scan, Ultra Sound, and X-Ray. All of these modalities are imaging techniques that are used to diagnose and/or treat the diseases. Using Six Sigma approach in DMAIC process, the team analyzed those modalities and mapped the processes in swim lanes. The main problem analyzed in the project was the pre-authorization numbers that was not matching within the system that causing a delay in the patients care. The team analyzed the system using swim lanes and developed improvement alternatives to minimize the effects of nonmatching pre-authorization numbers.

### **27 Analysis and Comparison of Three Hospital Information Systems**

**Andrea Ferrigno**

(Business Administrator)

*Faculty Mentor(s):* D. Petkov

This project focused on the exploration of the role that hospital information systems (HIS) play in supporting and improving hospital operations. These systems are of great value to hospitals as they increase overall efficiency and patient safety. This work consisted of investigating many companies that make HIS products, and ultimately finding two companies to compare with SoftClinic, a leading organization in the field. In my project I compared SoftClinic (by JVS Group) with HospiLogix (by NextGen eSolutions), and GeniPulse (by GeniPulse Technologies). While all three companies provide quality software, further analysis shows detailed areas of strengths and weakness for each of the products. These are extremely significant to the hospitals that will be selecting and purchasing a hospital information system. From my comparison, SoftClinic and GeniPulse prove to be far superior choices for a HIS, as they include many features that are absent in HospiLogix. Through this project, I have gained insights into the selection process of HIS, an important activity for any healthcare organization which is relevant for my future career in healthcare.

### **28 A Network Analysis of Disney's Mulan**

**Allison Gagliano, Robert Johnson, Stefanos Stravoravdis**

(Computer Science & Mathematical Sciences)

*Faculty Mentor(s):* Garrett Dancik, Megan Heenehan

We conducted a network analysis of Disney's Mulan to determine the most important characters, the character communities, and the sentiment of key characters. We used R programming to extract data from the script and perform a sentiment analysis of five main characters: Mulan, Mushu, Shang, Shan-Yu, and Yao. The latter yielded counts of positive, negative, and neutral phrases for each character and found the degree of the sentiment for each individual. We used Gephi to create graphical representations of the networks in Mulan, and identify important characters using various centrality measures. From viewing the movie, we expected Mulan to be the most important character. We also hypothesized that we would find three main communities when analyzing character dialogue interactions: heroes, villains, and neutral characters. Depending on the centrality measure used, we found that either Mulan or Mushu was the most important character. Our network determined that there were five major communities in the film, including a community of the main characters, comprised of both heroes and villains, and communities of close-knit characters based on the scenes in which they appear.

### **29 How Social Media Influencer Marketing Compares to Traditional Form of Marketing in terms of Consumer Engagement**

**Syed Ramish Ali**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

The paper would compare the effectiveness of social media influencer marketing compared to traditional forms of marketing. The paper would analyze data about consumer engagement on sponsored posts on social media platforms like Instagram and YouTube and compare them to consumer engagement on newspaper, radio and tv adverts. The paper aims to measure the value-added effect of the influencers personal brand to the product he or she is endorsing. The paper would also compare trends across different industries like fashion and apparel vs technology and how the increase in the number of micro influencers with their small, niche and often loyal audience is helping small businesses who target a particular audience for your products.

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### **<sup>30</sup>Gender Bias In Media Coverage Of Politicians During Campaign Seasons**

**Catherine Falvey**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Gender bias in media coverage of politicians during campaign seasons

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### **<sup>31</sup>Is Ignorance Bliss?: A Study Of The Availability Of News And Female Representation In Government On Citizen Satisfaction**

**Catherine Falvey**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

This poster will explore how the availability of news and female representation in government could have impacts on citizens satisfaction with their government. Using data from The World Bank and OECD studies, these variables will be examined across a sample of countries around the world. This study aims to understand whether informed citizens are more satisfied with their government and how an equal representation of females in leadership positions may play a role in this. Through a multivariate regression analysis, the effects will be estimated while holding variables constant like poverty rate, government services, and the Gini coefficient. It is predicted that a quadratic relationship exists. That is, the availability of news will have a positive impact on satisfaction with the government to a certain level and then it will have a negative relationship.

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### **<sup>32</sup>The Impact of Online Dating on Relationships**

**Josh Favret**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

My presentation will be on how online dating affects relationships. I will explore the data of divorce rates along with the creation of online dating. I will also look into Tinder and how that has affected relationships, whether people are still entering relationships, if it has increased or decreased the amount of relationships in todays society. Next I will look into if these formats have changed the quality of relationships. I will also look into if online dating apps have increased or decreased the amount of marriages. I will look into this data in America and compare it to other countries to see how things have changed since the creation of these dating formats.

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### **33Deceptive Advertising in Fyre Festival**

**Nicholas Joren**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Deceptive Advertising in Fyre Festival

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### **34The Economics of European Sports Broadcasting Rights**

**Bradly Mitchel**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

In the US and Europe, the cost of sports broadcasting rights have drastically increased with the popularity of them around the world. Since the introduction of the Premier League to England in 1992, it has quickly become one of the most popular soccer leagues. With this growth in popularity, the way most people in England watch games from the league is through Sky Sports. The leagues broadcasting rights have been monopolized by Sky who broadcasts a majority of the games and by a few smaller companies that only broadcast a few games per year. Sky has sincethen grown into broadcasting other European match to English customers such as Champions League. Ofcom has recognized that Sky has monopolized the market with their broadcasting rights and have since looked at ways to loosen their grip on the market. Even though Sky has a grip on league games, nation team games (World Cup Semi-finals and finals) or cup finals (FA Cup) still get broadcasted for free even though it is costly to maintain these rights. Today Sky's monopoly must be investigated and the rights to watch other important games for free must be upheld.

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### **33The Cost of European Sports Broadcast Rights**

**Bradley Mitchell**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

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### **34Investigation of Energy Efficiency Strategies and Key Input Parameters for Multifamily Housing**

**Bradley Mitchel**

(Environmental Earth Science)

*Faculty Mentor(s):* Paul Torcellini

Multifamily housing is one of the fastest building sectors in the United States. Larger and larger multifamily buildings are being constructed with more units in each one. In 1999, buildings with 20 units and above consisted of 50% of the market share of multifamily buildings. However today, that market share has grown

in encapsulate 85%. This increase also resembles who are the people that are buying such units. Many of these tenants are below the age of 25 or above the age of 75 due to the costs of the units and different features the building would have. In these buildings, the energy consumption can vary depending on the number of bedrooms in each apartment and the overall energy efficiency of the building. The wide range of multi-family buildings and the type on individual apartments can drastically change the amount of energy that is being consumed in the building. Depending on different amenities in the building it results in a wide variety of energy usage in the building. Two of the main contributors to this increase would be how a unit gets its hot water and the number of refrigerators in the building. Case studies were pulled together from across different states to examine input parameters and energy efficiency features that will inform future analysis for creating zero energy multifamily housing.

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### **35The Political Role of Late Night Comedy**

**Cassidy Neri**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

The Political Role of Late Night Comedy

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### **36Video Streaming and the Disruption of Traditional Media**

**Brian Schwager**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Video Streaming and the Disruption of Traditional Media

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### **37Video Streaming and the Disruption of Traditional Media**

**Brian Schwager**

(Economics)

*Faculty Mentor(s):* Brendan Cunningham

Over the course of the last decade the rise of video streaming services has shaped the cultural landscape and has had a great impact on traditional broadcasters as well as cable and internet service providers. To analyze this impact, I will be looking at various data sources such as subscription numbers to the various streaming services and whether they have a solely subscription-based model, an advertisement model, or a hybrid model. I will also be examining data from traditional media such as broadcast ratings, as well as cable subscription numbers. Looking at this data will surely show an inverse relationship between the rise of video streaming and traditional broadcasts as more people abandon the classic model for one that offers more freedom of choice of what and when they watch

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### **38How has Humanity Combated Disease in the Past, and Will it Change in the Future?**

**Matthew Bessette, Rebecca Arrigoni, Mackenzie Brower, Jason Zevallos**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

Since the beginning of history, mankind has suffered from the detrimental effects of diseases. We have not always been able to go to the pharmacy and pick up medicine to cure common illnesses. Large numbers of people used to die from these diseases. Over the years, mankind has eradicated many diseases or developed



ways for people to survive them, but even though society has come far in fighting illness, many of these ‘eradicated’ diseases re-emerge, or new diseases appear. How do we prepare for these diseases? How do eradicated diseases reappear? How did we treat diseases in the past, how has disease prevention changed over time, and how will disease prevention change in the future? This presentation will outline an interdisciplinary unit of instruction for eighth grade students to answer these questions. In social studies, students will explore the origins of diseases and their devastating effects on the populations and economies of countries through an investigation of the Black Plague in order to help establish the importance of disease prevention. In science, students will learn about the discovery of vaccinations and how they help prevent disease. Students will conduct research on different diseases, including their prevention and cure. In English Language Arts, students will read *A Long Walk to Water* by Linda Sue Pak, which examines peoples’ experiences with drinking water that can also be a source of illness. Finally, students will apply their understandings about past and contemporary disease prevention to argue for or against mandatory vaccination.

### **39How did American Society Express Itself Through The Music Of The 1960s?**

**Kay Daniels, Matthew Sandage, Derek Hoss, Arianna Biales**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

Music directly impacts listeners in powerful ways and has a way of bringing individuals together for myriad reasons. Music as an art form carries with it an embedded social component which can unite people to achieve common goals, from simply relaxing together, gaining perspective of a new music genre, or even protesting a war. To that end, this presentation illustrates an interdisciplinary teaching unit designed for 8th grade students which focuses on music of the 1960s, an era in which music reflects tumultuous societal changes. Music of the 1960s is easily studied from a historical standpoint, due to the changing political and societal climate. Eighth grade students can comprehend these complex topics, as well as being socially aware enough to relate overarching themes to their own lives. Math standards can be addressed in the format of word problems, statistics and probability, and geometry. In English class, students will analyze music lyrics to determine theme and its development within a song, analyze how lyrics provoke discussion and foment change, and ultimately investigate the way music both reflects and shapes the contemporary political and social landscapes. Music is a widely popular medium with the ability to bring together diverse groups of learners. Examining the way music can peacefully protest government action is as timely in today’s politically-charged environment as it was during the 1960s and can help inspire critical thinking, spark creativity, and allow students to express themselves in a safe and inclusive environment.

### **40How Has Human Development Affected The Environment?**

**Tara Prochorena, Jessica Dontigney, Aaron Stover, Griffin Michalek**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

The focus of this interdisciplinary unit of instruction, designed for 7th grade students, is the impact of humans on the environment. This contemporary world issue is relevant to students because the rapid growth of human development continues to gain momentum and causes environmental damages which in turn impacts humanity. Students will learn not only the major issues of human impact on the environment but also ways that they can reduce their own environmental harm in their everyday lives, making this topic all the more relevant and applicable for students today. The social studies, unit will chronologically trace how humans have impacted the environment and how they continue to do so, from the unprecedented growth of the Industrial Revolution through the regulations and environmental policies of the mid-twentieth century and into the present day. In English, students will read and analyze ecofiction and the way authors frame environmental issues in literature to use it as a vehicle for social change. Students will also learn how to find, evaluate, and synthesize information in a research paper about human impact on the environment. In science class, students will address environmental issues such as pollution, destruction of natural habitats, fossil fuels, and deforestation caused by human activity. Through an examination of the human impact on our

environment, students will develop critical thinking skills they can apply in the real world.

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#### **41What Are The Consequences Of Illicit Drug Use?**

**Sharainia Foster, Catherine Hatch, Jacob Avery, Courtney Lusk**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

A heroin epidemic is sweeping the nation, and since children are experimenting with drugs earlier and earlier, students must understand the consequences of such risky behavior. Within an interdisciplinary unit of instruction, eighth grade students will address the personal and interpersonal consequences of illicit drug use and addiction, the policies that our government has created in response to illicit drug use, and an understanding of the overall impact of different people and demographics through statistics and numbers. Students will explore the impact of illicit drug use on the individual and on public policy. In English class, students will read *Looking for Alaska* by John Green which explores teen alcohol and drug use and how illicit drug use can impacts teens. Drawing from their studies in other disciplines, students will construct a compelling narrative and write a series of journal responses about this controversial and complicated topic. In history class, students will examine laws surrounding illicit drug use from the declaration of drugs as “public enemy number one” by President Nixon to the present day. Students will consider what led to their creation and judge their efficacy through reading primary and secondary sources. In mathematics, students will focus on real data from the Monitoring the Future study, an ongoing study since 1975 which monitors the values, behaviors, and beliefs of high school students across the United States. Students will consider a number of both quantitative and categorical variables to explore the impact of drug use on society.

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#### **42Curbing Racism in Education System**

**Faith Kioko**

(Education)

*Faculty Mentor(s):* Tanya Moorehead

Although race is a socially constructed category, our race affects our access to opportunities, how we experience the world, and whether our identity is accepted or decided. Built in the DNA of the American Public Schools is the presumption that students from a culture outside this “norm “come to school with deficits in their intelligence, families, culture or communities. This is inaccurate and morally wrong; and it’s high time something is done about it.

Most Educators value fairness and equality and want the best for all their students. However, we cannot underestimate the power of the unconscious to lead us to take actions, both at individual and institutional levels that undermine a student’s sense of belonging and unintentionally contribute to educational inequities. Most people think of racism as an intentional and overt acts between individuals. But the most profound forms of racism are institutional rather than interpersonal. (Keleher & Johnson, 2001).

Research has shown that “a student’s sense of belonging in schools has a direct impact on academic performance” (Stephanie, 2018). Belonging defines who benefits from caring relationships and who has access to rigorous content and engaging instructions

As educators committed to equity, we must be aware of the impact of social threats on our students of color and other stigmatized groups. Out of this awareness, we must actively work to mitigate the effects of institutionalized bias in our schools. (Stephanie, 2018). In conclusion, educators should develop, implement training as well as support plans to give the nation's teachers the skills they need to better work with students of all racial and ethnic backgrounds. Also, educators should teach with materials and practices that fully recognize the contribution of all cultures and races in the United States.

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### **43How Does Social Media Influence Someone’s Identity?**

**Stephen Hatch, Kelsey McCarthy, Kenneth Pulk, Raquel Romano**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

Social media has grown rapidly within the past decade, consuming our everyday lives more than we realize. Today’s adolescents rely on it for many things such as making connections, networking, news, and more. Though they were born into this social media frenzy, it is important they understand its positive and negative effects and how they can use this to benefit their lives. The presentation illustrates an interdisciplinary unit of instruction for eighth grade students that explores the impact of social media on identity. In English Language Arts, students will write an argumentative essay on whether or not bullying has increased because of social media after they read and analyze a variety of informational texts. In mathematics class, students will examine this topic from a statistical stance by analyzing graphs of data trends and by performing statistical analyses of quantitative data. They will then collect a sample of data garnered from a social media platform of their choice to answer the essential question of the unit. In the history discipline, students will examine how social media usage by teens has changed over time. They will analyze contemporary primary sources to uncover changes in social media use over time. Using these sources, students will examine how social media shapes identity. This unit will ultimately tie historical, mathematical, and social/psychological aspects together to offer the students a broader, clearer view of an incredibly relevant topic.

### **44How Might Society Develop Or Change On Another Planet?**

**John Morrissey, Reilly McKnerney, Alexa Potter, Amy Smith**

(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

How do you imagine society developing on another planet? In the past several decades, humans have begun to seriously question the feasibility of inhabiting another planet. Many recent films, television shows, and novels have explored the possibility of living in space, which has created a greater curiosity in students. With all of the advancements in technology, there is a possibility that this could be achieved in the lifetime of these students. This interdisciplinary teaching unit targets students in grades 11-12 and is designed to promote critical thinking, source evaluation, and source integration skills in history, mathematics and English. The Modern World History course will examine the science, technology, and society of the Cold War Era and compare this information to present day conflicts in the United States. Students will gather and evaluate relevant primary and secondary sources to construct a persuasive argument on developing a society in space. In mathematics, students will explore the possibility of survival in space by learning about conversion factors that are required to adjust materials on Earth to that of another planet. They will also begin to cover the geometry that is involved in space travel such as conic sections. In English, students will read *Red Rising* by Pierce Brown, which addresses racism and classism as humans prepare for life on Mars. Over the course of this interdisciplinary instruction, students will be able to explore their own thoughts and ideas regarding how they imagine society might develop in space.

### **45The Education Preparation Program Standard 4**

**Ian Stygar, Sayantani Nandy**

(Education)

*Faculty Mentor(s):* Tanya Moorehead

The Education Preparation Program (EPP) at ECSU is currently in the process of preparing for re-accreditation by the Council of Accreditation for Educator Preparation (CAEP). In order to be re-accredited, we must demonstrate that our programs meet all criteria of CAEP’s Standard 4, namely positive impact of our graduates on P-12 student learning and development, indicators of teaching effectiveness, satisfaction of graduates’ employers, and satisfaction of program completers. The Holmes Masters Scholars at ECSU are

currently helping Eastern's EPP program collect data on Standard 4 through multiple instruments. These instruments consist of a structured classroom observation evaluation and a two series interview with select Eastern EPP completers who are currently active members of the teaching workforce. The questions asked in the interview are centered around the four Candidate Learning Outcomes (CLO) of Eastern's EPP-- Intentional Teaching, Data Literacy, Cultural Competence, and Professional Practice and Leadership. Our responsibility as Holmes Masters Scholars is to conduct the interviews and classroom observations, analyze the data from each interview and classroom observation and identify thematic connections among Eastern EPP completers. We would like to present our findings at the poster session to promote awareness among the education community and researchers of key components of Eastern's evidence-based teacher education program as well as areas that the program would need to improve to ensure that Eastern's EPP meets all accreditation standards.

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#### **46Examining Immigration through an American Studies Lens**

**Devon Thomas, Jordan Brayman, Mary Wilterdink**  
(Education)

*Faculty Mentor(s):* Mark Fabrizi, Victoria Fox

Immigration is one of the most controversial political issues of our time. Students are constantly bombarded with conflicting information about immigration—how will they know the truth? This presentation describes an interdisciplinary instructional unit for eleventh grade students who will examine how attitudes towards immigration have changed over the course of our country's history. They will examine literature, media, and historical documents to gain a deeper understanding of how and why attitudes towards immigration have changed. In their history class, students will analyze how media has become increasingly politically biased, examining media coverage of immigration from both sides of the political spectrum to gain deeper insight into how the same events can be covered in drastically different ways and how these biases shape people's opinions on immigration. The American literary canon offers students a richly diverse collection of immigrant literature, from the earliest slave writings to contemporary accounts, which will promote greater understanding of both the immigrant experience, and subsequent societal response. Historical documents are a portal to another time that can show what people thought about immigration and how they felt about specific groups of people that came to the United States. Students will take a look at opinion pieces of the time, as well as personal correspondence, that will allow them to understand how people felt, and then be able to draw connections to the debate on immigration going on today.

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#### **47The Importance of Male Educators in Elementary Education**

**Ian Stygar**

(Education)

*Faculty Mentor(s):* Tanya Moorehead

Unlike most professions that were traditionally predominantly male, the teaching profession remains and continues to be dominantly female. A large majority of female teachers are not from an underrepresented background. Society has instilled a subconscious belief teaching primary education is solely for woman. Male teachers and teacher candidates are stigmatized and looked down upon for their decision to pursue in the “non-traditional” profession. A profession that is responsible for molding the minds of forthcoming leaders and inventors. According to the U.S. Bureau of Labor, “male educators constitute just 2.3% of pre-k and kindergarten teachers and 18.3% of the elementary and middle school teacher population” (bls.gov). Although colleges are trying to wash away the stigma and misperception that the teaching profession is for females, there are not enough programs that have been implemented at the collegiate level to guide and motivate male candidates from underrepresented backgrounds in their pursuit for teaching certification. I will present verbally, and in the form of a poster, the ideology behind the program as well as the actions being made to increase the presence of male and female members from underrepresented backgrounds considering the teaching profession. Holmes Graduate Scholars are supporting undergraduate students from underrepresented backgrounds through mentorship and advocacy. Throughout the semester, Holmes Scholars have hosting meetings with students addressing topics such as social life, academics, community resources, and minority teacher advocacy. Holmes Graduate Scholars also hosted and have partaken in schoolwide events that promote and spread awareness of diversifying the teaching workforce.

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#### **48Examination of Progress towards a Energy Reduction Goal and Creation of a Pathway to Exceeding the Original Energy Goal**

**Daniel Simpson**

(Environmental Earth Science)

*Faculty Mentor(s):* Paul Torcellini

With the dual objectives of saving money and being environmentally conscious, the Town of Eastford, Connecticut adopted the goal of reducing their total municipal energy consumption 20% by the year 2020. Eastford Elementary School constitutes over 80% of the town’s total energy consumption making it the primary target for energy reduction. Extensive data related to energy and thermal comfort has been collected to better understand the energy use patterns of the school which are used to make recommendations for change. Substantial upgrades have been made to the lighting systems and the current data is logging this progress as well as informing decisions to upgrade the heating system. Better data means better future design to meet the thermal comfort needs while minimizing energy. As of January 2019 the School’s energy consumption has been reduced by more than 17%. From the current data set recommendations will be made to fine tune the school’s environmental control systems and implement further energy-saving technologies including a new heating system to exceed the Town’s 20% reduction goal while building an economic strategy guide for other towns to follow. Once complete, this project will be a proven example of how small municipal investments in sustainability can create long-term financial benefits for small communities.

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#### **49Bathymetric Model And Flood-Tidal Delta Sedimentation Of The Napatree Point Lagoon, Westerly, Rhode Island**

**Alyson Augenstein**

(Environmental Earth Science)

*Faculty Mentor(s):* Bryan A. Oakley

The 9.9 acre Napatree Lagoon, located within the Napatree Point Conservation Area (NPCA), (Watch Hill, Rhode Island), is an important habitat for shorebirds and various finfish and shellfish. A bathymetric survey of the lagoon was originally conducted in 2014; this project updated the bathymetric model of the lagoon and analyzed sedimentation of the flood-tidal delta and inlet. Elevation measurements were recorded for all wadable areas of the lagoon using a Trimble R10 Real-Time Kinematic Global Positioning System (RTK-GPS) mounted on a modified SECO All-Terrain Rover Rod 'Big Wheel'. The deeper areas of the lagoon were measured through lead line soundings deployed via kayak. Surveys of the flood-tidal delta, located on the eastern end of the lagoon, were conducted approximately monthly from May-July of 2018 with an additional survey in January 2019. Overall the lagoon is shallow (generally < 0.5 m); the eastern portion of the lagoon is the deepest area with a maximum depth of 0.93 m relative to MLLW. The lagoon has shoaled and decreased in area since 2014 through a combination of tidal delta deposition and spit migration. The overall sediment volume of the flood-tidal delta did not change significantly between May and January. Channel migration redistributed sediment onto the flood-tidal delta and adjacent barrier spit. Apparent sediment volumes in the summer months may be skewed higher due to the presence of macroalgae on the lagoon floor, masking the true volume of sediment deposited. Understanding and monitoring the changing morphology of the Napatree Lagoon provides insight into how the lagoon may continue to change in response to future storms, aiding in science-based management of the NPCA.

#### **50 Measuring Coastal Change at Napatree Point, Rhode Island using Digital Photogrammetry**

**Katrisha Bell**

(Environmental Earth Science)

*Faculty Mentor(s):* Drew Hyatt, Bryan Oakley

This study utilizes digital photogrammetry (DP) imaging and GPS-mapping to create, replicate and analyze detailed 3D topographic models for two sites that are subject to erosion at Napatree Point, Watch Hill, RI. This includes a low-relief beach and coastal dune complex, which proved difficult to model, and a till-cored bluff that has experienced some localized shoreline retreat. Field work in June 2018 consisted of placing twelve photogrammetric targets at each site, measuring targets locations using Trimble RTK GPS and collecting DP images. In total 256 images were captured using a Nikon D600 full frame camera along a two-step lateral spacing parallel to the shoreline. This ensured that images had ≈60% overlap. Camera settings made use of low ISO (≈250), small aperture (≈F/16) and brief exposure (<1/250S) on a tripod to maintain sharp focus, good exposure, and a large depth of field. Images were cleaned in Adobe Lightroom and imported into Agisoft Photoscan to build a detailed x-y-z point clouds, mesh, and textured models. This involved establishing tie points between images based on DP targets and GPS data. Models were further analyzed in Cloud Compare software and manipulated in Blender to print a 3D replica for the bluff site. Ongoing analysis in Cloud Compare will quantify topographic change for the bluff site by comparing the new (2018-19) models with previous 2017 data sets.

#### **51 Reinterpretation of the Sedimentology and Stratigraphy of the Jurassic East Berlin Formation at Dinosaur State Park, Rocky Hill, CT**

**Erick T. Bora**

(Environmental Earth Science)

*Faculty Mentor(s):* Peter A. Drzewiecki

The Jurassic East Berlin Fm exposed at Dinosaur State Park (DSP) in Rocky Hill, CT preserves six sedimentary rock layers containing Eubrontes trackways interpreted to be made by a dinosaur like Dilophosaurus. Current interpretations suggest the trackways formed on the margin of a perennial lake along which the dinosaurs moved. A reexamination of the facies and stratigraphy challenges some long held interpretations about dinosaur behavior at DSP. Laminated black shale beds representing perennial lakes occur in distinct intervals within the East Berlin Fm that can be correlated over distances of >90 km. They are remarkably uniform in thickness (about 0.5m thick) and rock type over these distances, but may thicken

gradually toward the Eastern Border Fault. On a basin scale, they display aggradational stacking patterns with minimal lateral facies variations. This is predicted for under-filled lake basins, where relatively low sedimentation rates and rapid base level shifts result in rapid vertical, rather than lateral, facies shifts. Laminated black shale beds extend to the border fault, and do not show a lateral transition into lake margin facies. Track-bearing strata occur in playa mudstone and sandstone between laminated black shale beds. Mudcracks, raindrop imprints, current ripples, trough cross-bedding, pedogenic structures, and adhesion structures support the interpretation that the dinosaurs walked on playas that were deposited during flood events. The surfaces of a few flood layers are covered with symmetric ripples indicating occasional periods of temporary, very shallow standing water after the flood events. There is no evidence that a perennial lake existed contemporaneously with any of the preserved track layers. These data challenge two current interpretations regarding dinosaur behavior at DSP that requires a perennial lake: (1) dinosaurs visited the lake margin to fish, and (2) some tracks were made by swimming dinosaurs.

### **52Lithological and Structural Evolution of the Soapstone Mtn Metagabbro Complex, Somers, CT**

**Madison Knox, Dominic Livoti, James Wargo**

(Environmental Earth Science)

*Faculty Mentor(s):* Dickson Cunningham

Following a 2013 preliminary study of the bedrock geology of Soapstone Mountain in Somers, Connecticut, we returned to the state park in 2018 to create a more detailed geological map of the metagabbro complex that is famous for its pre-colonial Native American soapstone quarries. Soapstone Mountain consists of metagabbro that contrasts with the surrounding felsic orthogneisses of the Bronson Hill Terrane. Detailed structural mapping was carried out during summer, 2018 to assess the nature of the metagabbro contacts with the surrounding Glastonbury Gneiss and document internal petrological variations and bedrock structures. We present an updated structural and lithological map and cross-section of Soapstone Mountain using a 1m LiDAR DEM basemap. The LiDAR basemap allowed very precise identification of outcrops in the study area and we collected structural and lithological data from more than 100 locations. Thirteen bedrock samples were also collected for petrographic analysis. We demonstrate that the metagabbro occurrences are variably amphibolitized and tectonized. Massive less foliated zones comprise summits and ridge-lines, whereas strongly tectonized amphibolites typically crop out on steep S, SE and E-facing hillslopes. The base of the metagabbro is a mixed zone of metagabbro intruded by granitic orthogneiss (Glastonbury Gneiss). Where observed, the contact is everywhere intrusive with the felsic orthogneiss protolith intrusive into the metagabbro protolith. There is no evidence that the metagabbro occurrences comprise a separate allochthonous sheet. Rather, they appear to represent a mafic intrusive complex intruded by a granitic complex with associated pegmatite dikes and thin leucocratic sheets and apophyses. A major top-to-the-SE thrust-sense shear zone which is talc-tremolite-chlorite and serpentine-altered occurs within steep metagabbro outcrops on the SE flank of the mountain. The major soapstone occurrences are thus structurally controlled. In addition, the main amphibolite fabric is locally deformed into SE-vergent asymmetric minor folds. SE-directed contractional displacement of the metagabbro bodies is consistent with documented overthrusting of the Glastonbury Complex over the Bolton Schist further south, most likely during the Alleghenian orogeny.

### **53Water Quality Trends Associated with the Bedrock Geology of the Deep River Quadrangle**

**Bryce Mase**

(Environmental Earth Science)

*Faculty Mentor(s):* Meredith Metcalf

Many studies conducted across New England have associated high concentrations of arsenic and uranium in domestic bedrock wells with the underlying geology. However, observed exceedances of these contaminants may not necessarily be due to natural processes. The Hebron Gneiss, Monson Gneiss, Middletown Formation, and the Brimfield Schist are known to be lithologic units of concern for public health officials

across the state of Connecticut as many wells intersecting these formations have experienced exceedances of arsenic and uranium. In cooperation with Connecticut's DEEP and DPH, one-hundred randomly distributed, private domestic wells within the Deep River Quadrangle were analyzed to further examine this relationship. The Deep River Quadrangle intersects several of the aforementioned rock units known to be a concern for arsenic and uranium. Results and distributions associated with the comprehensive water quality analyses suggest a correlation may not exist. Arsenic was present in 7% of the wells sampled across the study area yet only 4% of the samples exceeded the EPA drinking water standard. Although the Hebron Gneiss has the greatest extent across the Quadrangle and most samples with arsenic present were in this formation, the average arsenic concentration for wells within this formation was less than  $< 10 \mu\text{g/L}$ . The unit with the greatest average arsenic concentration exceeding the EPA drinking water standard was the Canterbury Gneiss but only 1 well intersected this formation. The many wells with uranium were randomly distributed but some of the highest average uranium concentrations were observed in the upper member of the Middletown Formation and the Monson Gneiss which corresponds to previous studies. The small percentage of wells contaminated by arsenic and the lack of a correlation with rock type or other water quality parameters indicative of groundwater source characteristics demonstrates the complexity of fractured rock aquifers and the need for detailed well characteristics to better understand fracture flow conditions.

#### **54 Petrographic Evidence for a Cryptic Ophiolitic Suture in Western Connecticut**

**Benjamin VanDine**

(Environmental Earth Science)

*Faculty Mentor(s):* Dickson Cunningham

This project concerns an unusual suite of talc-, tremolite- serpentine- and kyanite-rich schists from the New Hartford-Harwinton region of western CT. The rocks occur as highly deformed isolated lenses at the southern end of a belt of altered mafic and ultramafic rocks that continues through the northern Appalachians into Quebec, where they comprise the famous Thetford Mines ophiolitic suture. Thus, we suspect that the suite in western Connecticut may also represent the southern, highly deformed continuation of this cryptic suture. Accordingly, samples were collected from previously mapped serpentinite localities to test the hypothesis that the talc-tremolite-serpentine-rich rocks represent highly altered and deformed scraps of oceanic lithosphere. Thin-section analysis from 3 new locations yield important insights into the petrological evolution of the talc and serpentine-rich rocks. Highly serpentinized relict olivine is present in 3 of the lenses strongly suggesting a peridotitic protolith. Up to 100% talc-tremolite-chlorite and serpentine alteration of the original lithology is indicated in some samples and impressive 1-5 cm stellate clusters of secondary tremolite locally overprint all primary minerals and mineral textures. Bordering the talc-tremolite-serpentinite bodies in New Hartford are kyanite-phengite-rich rocks with blue-grey kyanite blades up to 10 cm-long locally comprising at least 50% of the rock mass. These bordering kyanite-rich schists suggest high pressure metamorphic conditions adjacent to the serpentinized ophiolitic rocks consistent with a paleo-subduction environment. Collectively, the field and petrographic data suggest that the cryptic Taconic suture identified in the northern Appalachians can now be traced southwards into western Connecticut.

#### **55 Digital Photogrammetry and 3D Modeling of Eroding Coastlines on Block Island**

**Tom Zimmerman**

(Environmental Earth Science)

*Faculty Mentor(s):* Drew Hyatt, Bryan Oakley

Digital photogrammetric practices were applied to coastal locations on Block Island to further our understanding of both the application and method of photogrammetry, and how erosion is impacting the shoreline. Imaging was performed in early June of 2018 with a full frame DSLR camera with settings to ensure sharp focus and a wide depth of field. Sixteen scaled photogrammetric targets were placed at Clay Head and thirteen at West Beach; of these, seven at each site were surveyed using a Real-Time Kinematic GPS. Two rows totaling 120 images were captured at Clay Head, a set of bluffs facing North-East, and another 120 images were captured in two rows at West Beach, the site of an eroding municipal landfill. The



images were then adjusted in Lightroom and imported into Agisoft software. Agisoft was used to align images and calculate a fine cloud of tie points. These were positioned in real space and scaled accurately using the GPS measurements. The scaled fine tie-point cloud was used to construct dense 3D point clouds and a corresponding mesh. Blender software was used to give the imported surfaces from Agisoft depth, a base, and labels, allowing printing of physical 3D models for portions of the sites. The dense point clouds from 2018 were compared with 2017 models to detect topographic change. Ongoing efforts seek to determine the volume of sediment loss and/or deposition, and to better understand both in the context of natural geomorphic processes which act on the shoreline of Block Island.

### **<sup>56</sup>Weather Duck: A Chrome Extension for Displaying the Weather**

**Sawyer Marchand**

(Computer Science)

*Faculty Mentor(s):* Garrett Dancik

This project describes the Weather Duck chrome extension that allows a user to easily view the current weather. Though a straightforward idea, the project required implementing several technical concepts in order to display the weather in a chrome extension. First, the extension allows users to enter a location of interest by zip code or by specifying the city and state. This information is passed to the Google Maps API which returns the latitude and longitude of the requested location. The location data is then passed to the Dark Sky weather API which returns the current weather. The weather forecast is analyzed and displayed, along with an appropriate dynamically generated image (such as clouds or a sun). The chrome extension is written using HTML, CSS, Javascript, and jQuery. Here I demonstrate the extension and discuss some of the technical challenges involved in completing this project.

### **<sup>57</sup>Development and Implementation of a Strength and Flexibility Assessment for NCAA Div. III Women Swimmers**

**Lindsey Perugini, Brittany Whitmeyer**

(Health Sciences)

*Faculty Mentor(s):* Paul K. Canavan PhD, PT, DPT, ATC, CSCS

**Introduction:** Collegiate swimmers can swim over 9,000 meters or more a day for five to six days a week. Fifty percent of collegiate swimmer's experience shoulder pain lasting 3 weeks or more. This pain can affect their sport performance as well as their activities of daily living. Decreased strength and imbalances of the shoulder internal and external rotators and hip adductors as well as decreased shoulder and hip flexibility have been attributed to pain in the competitive swimmer. **Objective:** The purpose of the research was to develop and implement a standardized shoulder and hip strength and flexibility assessment for a NCAA Division III women's swimming team. **Data collection:** 12 varsity women (18-22 years) participated and underwent testing of shoulder and hip internal and external rotation strength and flexibility and hip abduction and adduction strength testing. A microfet 2® hand held dynamometer and a standard goniometer were utilized for testing. **Results:** Preliminary results demonstrated that four of the participants had at least 15% difference in flexibility or strength between left and right extremities in one or more of the testing procedures. **Conclusion:** A standardized assessment for strength and flexibility can provide information to the individual athlete related to their specific weakness and imbalance. The results of this research could result in modifications of an individual's strength and conditioning program to address their specific needs and potentially reduce the risk of future pain and injury.

**Key Words:** swimming, pain, assessment, injury prevention

### **58 Inclusion in Physical Education**

#### **Dillon Byrd**

(Kinesiology and Physical Education)

*Faculty Mentor(s): Michelle Ferrer*

Physical education is a guaranteed service for all students with disabilities under the Individual with Disabilities' Education Act. This legislation states that all students must receive physical education, adapted if necessary, in the least restrictive environment. According to NASPE physical education is the main source for students to be physically active and facilitates the development of their physical skill and abilities. Through physical education students also gain benefits such as increasing blood to the brain, mental alertness, maintaining positive attitudes, increasing self-esteem, preventing illness, as well as many social benefits leading to more success through their school years. Unfortunately, students with disabilities may not be receiving these benefits. Research shows that students with disabilities receive less physical education due to physical educator's lack of exposure, knowledge and experience with inclusion. While inclusion is not specifically stated in legislation it has been one of the most impactful education movements in the recent past. Therefore, the purpose of this poster is it investigate the benefits that inclusive physical education provides for students with disabilities.

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### **59 Physical Activity for Children and Youth with Disabilities**

#### **Savannah Johnson**

(Kinesiology and Physical Education)

*Faculty Mentor(s): Michelle Ferrer*

There has been countless research done proving that physical activity is beneficial for youth and children. Physical activity has proven to show benefits to children's skeletal health, psychological health, improves cognitive and emotional functioning, and more (Loprinzi 2012; Bidzan-Bluma 2018). There is a population that is often overlooked when it comes to sports and recreation outside of school. Children with disabilities are often limited in terms of being able to participate in extracurricular sports, clubs, and other recreational activities because the facilities may lack proper equipment and individuals may lack proper training. Recent research has shown that physical activity can be equally as beneficial, or even more beneficial, to children and youth with disabilities (Murphy 2008). However, students with disabilities represent 18% of the U.S. population yet they have been proven to have significantly lower participation rates in sports and extracurricular activities than those without disabilities (Solish 2010). In order for individuals with disabilities to have more opportunities, there needs to be more programs with specified training and education in adaptive activities. CrossFit, for example, has created adaptive classes where trainers get certified to make CrossFit classes accessible to people with disabilities. The purpose of the proposed poster is to investigate the benefits and importance of getting children and youth with disabilities involved in physical activity and provide examples of programs available.

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### **60 Using Visual Supports for Students with Autism in Physical Education**

#### **Haley Kolesnik**

(Kinesiology and Physical Education)

*Faculty Mentor(s): Michelle Ferrer*

According to The Individuals with Disabilities Act (IDEA), physical education must be provided to all students with and without disabilities from ages three to twenty-one. IDEA also states that students must receive free and appropriate public education in the least restrictive environment. This means that students with disabilities must be with their peers without disabilities to the maximum extent appropriate. However, research demonstrates that in general, physical educators feel that they lack information and guidance in regard to integrating students with disabilities in a general physical education setting. One strategy to include students with disabilities, particularly students with autism, in physical education is through the use of visual

supports. A substantial amount of evidence exists in support of using tools, such as visuals, to communicate and assist students with autism in physical education. Various investigations that focus on utilizing this technique have found that visual supports provide students with clear expectations, create predictability, and promote independent transitions. Furthermore, studies claim that visual information is processed more effectively than auditory information for students with autism (Fittipaldi-Wert & Mowling, 2009). Therefore, learning can be enhanced for students with autism through the use of visual supports in physical education. The purpose of this poster is to report on strategies for including students with Autism Spectrum Disorder in general physical education.

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### **61Inclusion in Physical Education**

**Jacqueline Lewis**

(Kinesiology and Physical Education)

*Faculty Mentor(s):* Michelle Ferrer

The purpose of this poster is to perform a meta-analysis of ten different research articles which all touch upon the subject of inclusion within a physical education setting. The Individuals with Disabilities with Education Act C(IDEA) is a federal law that requires schools to serve the educational needs of eligible students with disabilities. IDEA states that physical education, specially designed if necessary, must be made available to all students with a disability. Further, the guidelines of IDEA indicate that students with and without disabilities must receive the same amount of physical education class time. Inclusion is frequently the medium used to deliver these physical education services. The ten articles I will be analyzing explore topics such as teacher stigma on inclusion, student-based biases, parent opinion, as well as quantitative research on class participation by students with and without disability. The purpose of this meta-analysis is to gain insight into the twenty-first century opinion on inclusion within the physical education setting.

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### **62Improving the Fitness of Persons with Disabilities: What is Being Done**

**Matthew Pinney**

(Kinesiology and Physical Education)

*Faculty Mentor(s):* Michelle Ferrer

Fitness is extremely important to a person's wellbeing especially if that person has a physical or mental disability. According to the Office of Disease Prevention and Health Promotion, people with disabilities having a lower level of fitness are also at a greater risk for health complications. These health complications include cardiovascular health, obesity, poor mood, and obesity (Health, 2019). Working with people with disabilities creates opportunities to adapt conventional fitness and wellness plans to fit the needs of an individual with disabilities. For example, organizations such as the Spaulding Rehabilitation Network and National Center on Health, Physical Activity and Disability create workout recommendations and programs for people with disabilities (Rimmer, 2015; Exercise, 2019). There are multiple reasons why people with disabilities are often overlooked. One person asked, "how can people with disabilities be healthy when they inherently have a disability?" (Brikenbach, 2013). Fortunately, there are people who are advocating for people with disabilities and their right to be healthy and active. This poster seeks to investigate what options an individual with a disability has when it comes to fitness regarding programming and equipment through an analysis of published research.

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### **63Yoga for Young Children with Down Syndrome**

**Chelsea Samperi**

(Kinesiology and Physical Education)

*Faculty Mentor(s):* Michelle Ferrer

Yoga is a physical, mental and spiritual practice that originated in ancient India. It is the practice that aims to

join the mind, body and spirit. Benefits of yoga include lower stress levels, lower blood pressure, improved cardiovascular health, and increased positive behavior. Additionally, researchers reported improvements in gross motor skills, balance, posture, eye contact, imitation skills, attention, time spent on task, sleep, play habits with peers, anxiety, and breathing (Young, Silliman-French, & Crawford, 2017). Yoga can be introduced into many settings to enhance motor development as a physical activity warm up or cool down, a behavior management technique, and/or an innovative way to get all children, especially those with Down Syndrome (DS) active. According to Hodge, Lieberman, & Murata (2012), children with DS frequently demonstrate delays in motor development therefore warranting the continual need for additional practices promoting increased participation and meaningful engagement in physical activity. Yoga can be easily implemented in adapted physical education classes, preschool settings, home based settings through the use of yoga stories, yoga songs and yoga games. Engaging in yoga exercises can make the students aware that everyone is built differently and give them a better understanding of their own bodies. Yoga does not promote competition among students. Instead it encourages self-awareness and motivation to improve themselves. Therefore, the purpose of this study is to describe the benefits of yoga and provide practitioners with multiple ways to implement yoga into various settings for young children with Down Syndrome.

#### **64What is a Baseball Athlete’s Prime Age for Game Play?**

**Zoe Czerenda**

(Mathematical Sciences)

*Faculty Mentor(s):* Chantal D. Larose

What is the prime age for a baseball player in Major League Baseball (MLB)? We can find an athlete’s prime playing age by analyzing their performance using predictive analytics and data science techniques. Data visualization helps us to understand how variables are related and affect players’ performances. Principal component analysis combines the strongly correlated variables together to make uncorrelated components, so that information in strongly correlated variables is not counted twice. Regression modeling will clarify the correlations seen between a player’s age and their statistical performance. This project takes MLB players’ statistics to predict which age is ideal for their career.

#### **65Multivariate Statistical Models And Their Application To Adolescent Alcohol Use**

**Allison Gagliano**

(Mathematical Sciences)

*Faculty Mentor(s):* Pete Johnson

Adolescent alcohol use is an increasingly pressing issue that requires extensive research. In order to expand on previous research, I used binary logistic regression - a multivariate statistical analysis technique - to construct a model to predict the impact of several variables on the probability of an adolescent using alcohol. This methodology allows for the relaxation of assumptions which restrict other techniques. Due to this increased flexibility, using this technique will improve upon the previous results found using other techniques. Furthermore, while some studies have conducted similar multivariate analyses, the results across several studies are inconsistent, thus require replication using more recent data. I sought to answer the following question: which variables among region, urbanicity/rurality, number of parents in a household, mother and father education level, religiosity, adolescent marijuana use, and gender predict adolescent alcohol use? I used the 2015 12th Grade Monitoring the Future dataset to construct a model which predicts the probability of membership in the group of adolescent alcohol users or nonusers. I concluded that the resulting model including gender, marijuana use, urbanicity/rurality, mother education level, and religiosity statistically significantly predicts adolescent alcohol use. The model indicated that adolescent marijuana use is the most significant predictor of adolescent alcohol use. This research may suggest particular adolescent groups who have an increased likelihood of alcohol use, which future research may target in order to evaluate potential prevention and intervention methods.

### **66Is Anxiety Based on Youth Experiences?**

**Rebecca Szruba**

(Mathematical Sciences)

*Faculty Mentor(s):* Chantal D. Larose

According to the National Institute of Mental Health, anxiety disorders affect 18.1 percent of adults in the United States. This disorder causes sudden fear or panic which triggers both mental and physical reactions in the body. Anxiety causes people to avoid certain situations and lose interest in activities that were once enjoyable. Treatments of anxiety include hospitalization and medication. Our research will model the impact of youth experiences such as TV limitations, after-school activities, grades, and parent reassurance on the onset severity of adult anxiety. We will also take into account factors such as age, military status, sex, and health on anxiety severity. Predictive analytics, including multivariate data visualization and logistic regression, will reveal correlations between anxiety and potential severity factors. All results are validated to ensure the findings are legitimate and not accidents of sampling error. All data is retrieved from the Substance Abuse and Mental Health Data Archive.

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### **67Designing Costumes for Pluto**

**Katrina Kirby**

(Performing Arts)

*Faculty Mentor(s):* Anya Sokolovskaya

Being the costume designer for Pluto was a challenging yet stimulating experience. Through coordination with the director as well as the crew, I saw my visions as a designer come to life. Starting with research, I saw my drawing plates become costumes that were worn on stage by all the characters. Each character having certain features about their costumes that made them stand out and reflect who they were, many hours were put into altering pre-existing costumes as well as building them from scratch. Overall, it was a very stressful and difficult situation, but I enjoyed it and I would like to use my experience to further my career as a costumer.

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### **68Identify Potential Biological Legal High Using Public Database PubChem**

**Ivonne Barcenas Garcia, Kevin Solis Aparicio**

(Physical Sciences)

*Faculty Mentor(s):* Kedan He

The goal of this project is to identify potential “legal highs” that has not been regulated by the authority, such as U.S. Drug Enforcement Agency, using a fast and automated algorithm implemented using programming language Python. Also, provide an overview of biology underlying controlled substances, and review what legislative/administrative actions are being considered for the identified legal highs. The chemical similar property principle states that structurally similar molecules have similar biological activities. Computational tools to search chemical structure databases are essential to finding leads early in a drug discovery project. Similarity methods are among the most diverse and most useful. Various similarity methods exist that return a score indicating the level of similarity between molecules under comparison. With the emergence of the ‘big data’ era, the biomedical research community has a great interest in exploiting publicly available chemical information for drug discovery. PubChem is an example of public databases that provide a large amount of chemical information free of charge. PubChem offers comprehensive chemical information useful for drug discovery, it also provides multiple programmatic access routes, which are essential to build automated virtual screening pipelines that exploit PubChem data. Data collected from the similarity search will be further used in developing the predictive model (Quantitative structure-property relationships or Quantitative structure-activity relationships) for identifying active potential illegal molecules.

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### **69The Impact of “Acting Out” an Action Potential on Learning and Classroom Engagement**

**Jane Bodinger**

(Psychological Science)

*Faculty Mentor(s):* Jenna Scisco

A challenging topic in a Physiological Psychology course is the ionic basis of the action potential. An in-class activity had students model the action potential using construction paper ions, ion channels, and neuron components, complete a fill-in-the-blank worksheet, and act out the action potential for the class. The purpose of this research was to examine the effectiveness of the activity for improving learning and classroom engagement. Twenty-four participants from a Physiological Psychology class at Eastern Connecticut State University completed a pre-test, post-test, Classroom Engagement Measure (Fuller et al., 2018), and Learning Perception Scale (Wallace, 2015). Action potential knowledge significantly improved from pre-test ( $M = 2.42$ ,  $SD = 1.28$ ) to post-test ( $M = 4.21$ ,  $SD = 0.78$ ),  $t(23) = -7.02$ ,  $p = 0.00$ ,  $d = -1.43$ . Students reported that the activity helped their learning ( $M = 4.29$  out of 5,  $SD = 0.81$ ) and that they were actively engaged during the activity ( $M = 4.54$  out of 5,  $SD = 0.93$ ). However, students did not perform significantly better on an activity-based exam question (100% correct) than a control exam question (79% correct),  $p = 0.063$ . These results suggest that active learning strategies can be effective ways to engage students in challenging topics.

### **70The Interplay of Culture, Education, and Parenting on Latina Adolescent Female Development**

**Ladylanis Grullon**

(Psychological Science)

*Faculty Mentor(s):* Letterman

Previous research has found that teachers and parental involvement in Latinas' education are important to support and help them build self-motivation to achieve their academic goals. Also, cultural beliefs and negative expectations are negatively influencing Latinas' perspective towards their capacity to seek higher education (Kim & Hill, 2015). The purpose of this study is to investigate factors that can influence Latinas' academic outcomes. A focus group of Latina students will be utilized to assess these factors: a) maternal versus paternal or other role model influence in the Latina students' lives, b) cultural beliefs concerning education, and c) parental support. Findings of this study can benefit the Hispanic population and raise awareness of Latinas pursuing higher education and the contributors to their academic's outcomes. Thirty participants will be recruited, all Latina students from Eastern Connecticut State University. In this study, three rating scales are going to be used to measure parental involvement, self-motivation, and academic satisfaction. There are two hypotheses in this study (a) maternal involvement will be positively correlated to Latinas' academic outcomes, (b) teacher's involvement and connection to Latina students will be positively correlated with their satisfaction and motivation to pursue higher education.

### **71Love Contracts in the Workplace**

**Jessica Henowitz**

(Psychological Science)

*Faculty Mentor(s):* Peter Bachiochi

Romantic relationships in the workplace are increasing as employees are working more hours and more females have joined the workforce (“‘Love contract’ needed in workplace”, 2005). As most workplace relationships are short-term (Vault Careers, 2016), organizations are at risk for employees filing sexual harassment or retaliation lawsuits against them (Flynn, 1999; Laura, 2008; Reuters, 2018). To prevent this, organizations are creating love contracts for employees involved in a relationship (Mainiero & Jones, 2013). This study aimed to determine how willing employees are to disclose personal information with human resource departments and to find correlations between willingness with gender, personality traits, and age. A national online sample of workers was utilized ( $n=169$ ). A multiple regression analysis revealed that

neuroticism and age were significant predictors of willingness to disclose information. The findings have implications for relationships in the workplace.

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### **72It's Lonely at the Top: An Analysis of Social Exclusion of Workplace Leaders**

**Melissa Henowitz**

(Psychological Science)

*Faculty Mentor(s):* Peter Bachiochi

Social affiliation is a basic human need that extends into the workplace. However, sometimes individuals experience the opposite of social affiliation—social exclusion. The goal of this study was to test whether management level would significantly predict levels of experienced social exclusion in the workplace and whether management level would still be a significant predictor of experienced social exclusion after controlling for gender and levels of agreeableness. A national online sample of workers (N=263) completed a workplace social exclusion and personality scale. A hierarchical regression was used to analyze how management level, gender, and level of agreeableness predict social exclusion. The results showed that management level was a significant predictor of workplace social exclusion even after controlling for gender and agreeableness levels. These results have implications for diversity training programs.

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### **73Early Indicators, Risk Factors, And Intervention Strategies For Reading Disabilities In Early Childhood.**

**Jenna Mazza**

(Psychological Science)

*Faculty Mentor(s):* Melanie Evans Keyes

Reading is an essential skill that children need in order to be successful throughout school and in life. Over the past few decades, more and more children are falling further behind their peers with regards to their reading abilities. This literature review discusses the many factors that can act as early indicators of reading disabilities (e.g., poor phonological awareness, reading fluency, reduced speaking rate) which can assist educators in early identification. Risk factors such as family history, socioeconomic status, and home environment are also reviewed as they have been found to increase the likelihood of children developing reading disabilities. By being aware of these early indicators and risk factors, educators and parents are able to identify students with reading disabilities or those at risk and implement intervention strategies. These intervention strategies (e.g., parent involvement, summer programs, peer-assisted learning) will be assessed throughout the literature review. Finally, implications for teachers and parents are provided as well as recommendations for future research.

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### **74Parental Impacts On Adolescent Sexual Behaviors.**

**Danielle Romanelli**

(Psychological Science)

*Faculty Mentor(s):* Melanie Evans Keyes

Parents have been found to impact their adolescents' sexual behaviors (e.g., engaging or abstaining from sexual activity, contraception use, consequences of sexual activity) in a variety of ways. The approach in which parents communicate with their children and the timing of these conversations are two important factors in the current literature. Specifically, positive sexual communication between parents and their children during middle childhood has been found to lead to positive sexual experiences during adolescence and early adulthood. Other factors (e.g., parental monitoring, parental education level) that have been found to impact adolescents' sexual behaviors will also be reviewed. For example, parental monitoring has been found to reduce the amount of sexual experiences that their adolescents engage in. Parental education has been linked with sexual risk taking in that higher levels of parental education were correlated with their

adolescents taking less sexual risks. Lastly, future research recommendations and implications for parents will also be discussed.

### **75 THE COMPARISON OF MILITARY DYAD AND NON-MILITARY DYAD RELATIONSHIP SATISFACTION**

**Mikayla Oken**

(Psychological Science)

*Faculty Mentor(s):* Madeleine Fugere

This is an examination of the current research published on relationship satisfaction amongst military couples and the relationship satisfaction of non-military (civilian) couples. The purpose of this intensive literature review is to analyze the common daily stressors including financial stressors, family stressors, and career stressors of civilian couples that impacts the self-indicated relationship satisfaction from individuals dating to long term marriages. In addition, evaluating the relationship satisfaction of military dyads through stressors common to these individuals including career stressors, deployment stressors, and trauma in dating dyads to long term marriages. Concluding with a comparison of the outcomes of the two types of dyads calculated relationship satisfaction.

### **76 The Impact of Emotional Abuse on College Students' Self-Esteem**

**Briney Acevedo-Corona**

(Social Work)

*Faculty Mentor(s):* Pamela Chiang

There has been extensive research on physical abuse and sexual abuse in intimate relationships, but fewer studies have looked at psychological abuse (Karakurt, & Silver, 2013) and how it affects college students' mental health (Assari & Lankarani, 2018).

The purpose of the study is to examine the association between emotional abuse and college students' self-esteem. We utilized available sampling to collect data in a self-administered survey over a period of three weeks in the spring of 2019 on Eastern Connecticut State University's campus. The study results enhance our understanding of the prevalence of emotional abuse among college students in their intimate relationships as well as inform campus programs on the prevention of dating violence.

### **79 Paying for Your Own Tuition? College Tuition and Academic Performance**

**Haley Krol, Lily Smith**

(Social Work)

*Faculty Mentor(s):* Pamela Chiang

Nearly half of all first time undergraduates take out at least one loan to pay for their college education (Baker, Andrews, & McDaniel, 2011). Studies have shown that college tuition cost affected students' educational attainment and professional achievement (Pascarella, Smart, & Stoecker, 1989). The purpose of the study is to find out if college students' academic performance is affected by the share of their college tuition. We collected data through convenience sampling at a public liberal arts school in the Northeast for three weeks in the spring of 2018 and used Chi-Square statistics to analyze our data.

Results showed that students who paid for their own college tuition had no significant impact on their attendance and their grade point average (GPA). However, those who participated in work-study programs were more likely to have a higher GPA and those who received scholarships also reported a better GPA. The study research has important implications for policy, research and practice as to provide more supports to college students in bearing their financial burden as well as meeting their academic achievement.



### **78Gender Differences on Sexting and the Effect of Sexting on College Students' Self-Image**

**Ania Martin**

(Social Work)

*Faculty Mentor(s):* Pamela Chiang

Many college students have heard of or engaged in sexting behaviors. Studies have found that 80% of college students engaging in sexting are female (Renfrow & Rollo, 2014). The proposed study seeks to explore the differences of sexting between male and female college students as well as the impact of sexting on their self-image. This study utilized convenient sampling to recruit more than 100 students to participate in self-administered surveys online and in the Eastern Connecticut State University over a period of three weeks in February, 2019. The results of this study will enhance our understanding of the prevalence of sending and receiving sexting among college students and the influence on college students' self-image.

### **79Barriers to Child Maltreatment Reporting: Results from A Pilot Study in a Financially-Disadvantaged Town**

**Jimarie Morales, Marangely Diaz-Ortiz**

(Social Work)

*Faculty Mentor(s):* Pamela Chiang

Child Protection Services (CPS) rely on community members and mandated reporters to report child maltreatment, however, reports come from community members have been found lower than those from professionals. The purpose of this pilot study is to understand reasons that contribute to the community for not reporting child maltreatment incidents.

Using both online and self-administered surveys, the study utilized available sampling in a community of high poverty rate (31.8%) in the Northeastern part of Connecticut in February, 2018. Findings have important implications for reducing barriers and concerns in the local community in reporting to the Department of Children and Families (DCF) as well as for future education in raising awareness of identifying child maltreatment occurrence.

### **80Literacy Warriors: Identifying Inequalities and Maximizing Literacies Comprehension in a Mixed-Income Community**

**Patrice Eugene**

(Sociology, Anthropology, Criminology, and Social Work)

*Faculty Mentor(s):* Cara Bergstrom-Lynch

Language is critical in all institutional and professional functions in society. Meanwhile, literacy is the heart of language and determines one's ability to read and write. Without literacy, it is nearly impossible to probe and synthesize the universe we live in and to understand ourselves within it. While it is imperative to understand the importance of, say, parts of speech, tenses or any fundamental components of a sentence in English literacy; it is just as crucial to understand the significance of these components or language in math literacy—both of which are apparent on most standardized exams. This research aims to understand how race and class inequalities lead to literacy disparities among high school students in an economically diverse county in the Northeast. The researcher has chosen a mixed methods approach, in which these two literacies (English and math) will be the primary focus by assessing the aggregated SAT exam scores across school districts in the county. The researcher will use existing information from EDSight, the public portal for Connecticut State Department of Education, to evaluate the academic (i.e. standardized exams), race and class factors. In addition, this study will include three in-depth interviews from teachers and administrators to identify inequalities that cultivate such achievement gaps in the county. The research will conclude with a discussion on how college students can help reduce these disparities by contributing to the community.

## MUSICAL PERFORMANCES

### Eastern Opera Workshop

Faculty Mentor: Dr. Emily Riggs

#### **"Crudel! Perchè finora" from *Le Nozze di Figaro***

This duet is from Act III of Mozart's opera buffa, *Le Nozze di Figaro*. Prior to this scene, Susanna and the Countess, with the help of Figaro, have woven an intricate deception to catch the Count in his philandering. The Countess and Susanna sent a letter to the Count, supposedly from Susanna, offering to meet him in the castle garden later that evening. In this duet, the Count, who has lusted after Susanna for years, feels he is finally about to win Susanna's affection.

Susanna: Sara Vega, soprano

Count Almaviva: Ryan Michaud, baritone

#### **"Dies Bildnes ist bezaubernd schön" from *Die Zauberflöte***

The aria "Dies Bildnes" is from the opening scene of Mozart's comic singspiel, *Die Zauberflöte*. In this aria, the young prince, Tamino, reflects on the beauty of a mysterious woman whose image he has just received in a locket and vows to travel throughout the strange land to find her.

Tamino: Austin Stone, tenor

#### **"On A Tree by the River" and "Beauty in the Bellow of the Blast" from *The Mikado***

This scene is from Act II of Gilbert and Sullivan's operetta *The Mikado*. The operetta is packed with Gilbert and Sullivan's trademark political and cultural satire of the British upper-class. After a series of misadventures, the "Lord-High Executioner" finds himself in the unenviable position of having to either marrying the elderly (and somewhat bloodthirsty) Katisha or face the wrath of the execution-starved ruler. He sets out to woo her and convince her to accept his hand in marriage.

Katisha: Christiana Montalbano, mezzo-soprano

Lord-High Executioner: Christian Fronckowiak, tenor

### Samul Ensemble: "Eyes of the Storm"

Faculty Mentor: Dr. Okon Hwang

Samulnori is a genre of percussion music from Korea. The word "samul" means "four objects" and "nori" means "play." Samul nori utilizes not just any random 4 objects but 4 very specific Korean percussion instruments: 2 gongs and 2 drums. In Korean traditional symbolism, these 4 instruments are meant to represent 4 different weather conditions: the large gong represents thunder, the smaller gong the sounds of the wind, the large barrel drum clouds, and the hourglass shaped drum rain. The origin of the samulnori stems from folk music performed during various types of celebrations throughout the Korean history. Samulnori in the 21<sup>st</sup> century, however, is a highly sophisticated art form that layers both traditional as well as newly created rhythms. It is quite common to see samulnori performances on prestigious concert stages around the world nowadays, and samulnori classes and clubs can be easily found in many universities in the United States and the world. Eastern's samul ensemble members go through a collective compositional process by layering various traditional rhythms, appropriated rhythms, and newly created rhythms. This semester's composition "Eyes of the Storm" merges two completely different entities: traditional Korean rhythmic cycles and rhythmic motives appearing in a K-pop song called "Idol" by BTS.

David Anecchiarico  
 Katherine Harris  
 Emily Kennedy  
 Ryan Michaud  
 Venlo Odom  
 Lanitza Padilla  
 Safiya Palmer  
 Emma Peltier  
 Antonia Reynolds  
 Izzy Russo  
 Skyla Serra

**Eastern Chamber Singers**  
**Faculty Mentor: Dr. David Belles**

Eastern Chamber Singers will perform selections from their recent Spring Tour program, “Sing to the Heavens.” Chamber Singers is the Music Program’s auditioned vocal ensemble. Participation in the ensemble requires dual enrollment in the university’s large non-auditioned ensemble, Eastern Concert Chorale. In addition to giving concerts on campus, Chamber Singers has had the distinct pleasure of singing with internationally known artist Josh Groban and with the Game of Thrones Live Experience. The ensemble would like to recognize the ten seniors who will be graduating this year. Chamber Singers’ Spring 2020 Tour will be to Lima, Peru.

**Soprano**

Emily Anderson  
 Tiara Lussier  
 Fallon Michalski  
 Emma Peltier  
 Sarah Potter  
 Emily Riggs  
 Sara Vega

**Alto**

Holly Decker  
 Lauren Foster  
 Jenny Lindquist  
 Christiana Montalbano  
 Samantha Price  
 Antonia Reynolds  
 Samantha Warshauer  
 Kaylee West

**Tenor**

Christian Fronckowiak  
 Andrew Hofmann  
 Jordan Pollard  
 Ryan Riggs  
 Austin Stone

**Bass**

Tony Castagnaro  
 Cody Goodwin  
 Harry Gagne  
 Eric Hofmann

Ryan Michaud  
Aaron Wilson

### **'ECSU Steel'**

#### **Faculty Mentor: Prof. Matt Bronson**

'ECSU Steel' is comprised of members from Eastern's World Percussion Ensemble. This ensemble focuses on learning traditional music from the Americas, Middle East, Asia, Trinidad & Tobago, and beyond. With the help of student fund raising, generous grants, and alumni support, the instruments for this ensemble recently became a reality, and students are learning them for the first time this semester. Today's performance includes standard selections from the traditional repertoire for Pan.

Erick Smith  
Antonia Reynolds  
Ryan Michaud  
Gabi Mikunda  
Dallas Dorman  
Amy Bergman  
David Galvez  
Lorenzo Hotchkiss  
Amanda Jovanovich  
Emily Miclon  
Venlo Odom  
Lily Pollard  
Izzy Russo

## **PHOTOGRAPHY EXHIBITORS**

### **Student Participants**

#### **Fall 2018**

#### **Com210 Photography 1**

Allard, Joshua J.  
Ayeni, Dapo  
Beiter, John M.  
Brown, Ta'quann  
Cordeira, Jason J.  
Demarkey, Abby  
Friedrich, Alyssa B.  
Hammack, Griffin S.  
Jalal, Nadia  
Johnson, Leaja T.  
Mansfield, Griffen  
McCarthy, Michaela Anne  
McDermott, Jillian S.  
McKay, Jordan  
Mckenzie, Davantie H.  
Mercado, Rene A.  
Michalski, Fallon P.  
Ofiara, Alexandra  
Ribeiro, Marlon S.

Ruffin, Kavon  
Salters, Charliece H.  
Szogas, Sara  
Tigeleiro, Julianna J.  
Tinajero-Fuentes, Abraham  
Vaccariello, Alli P.  
Wabo, Emma Linnea  
Zamudio Pardo, Jenny A.

**Spring 2019**  
**Com210 Photography 1**

Almquist, Joseph M.  
Avery, Erin  
Blackmar, Sean R.  
Bolduc, Jake M.  
Bucca, Italo E.  
DeCosta, Tyler R.  
Feliciano, Andres A.  
Frey, Lindsay C.  
Frommelt, Stephanie A.  
Galletti, Alexandra K.  
Gessner, Brianna D.  
Grzywinski, Jakob  
Holmes, Alyssa  
Hotchkiss, Lorenzo T.  
Krueger, Kevin A.  
Lopez Pineda, Yessica  
Lukasiewicz, Justin  
Mateo, Tina A.  
Muniz, Rachel M.  
Ramirez, Veronica M.  
Rhett, Joy  
Tacelli-Olmo, Danielle E.  
Velez, Michael A.  
Wu, Harry  
Zaidi, Amen

**Spring 2019**  
**Com310 Advanced Photography**

Allard, Joshua J.  
Archambault, Isaac D.  
Gagliardi, James S.  
Hinton, Logan M.  
McKenna, Brian P.  
Petrus, Lidija  
Williams, Domonique S.  
Winsor, Erin E.