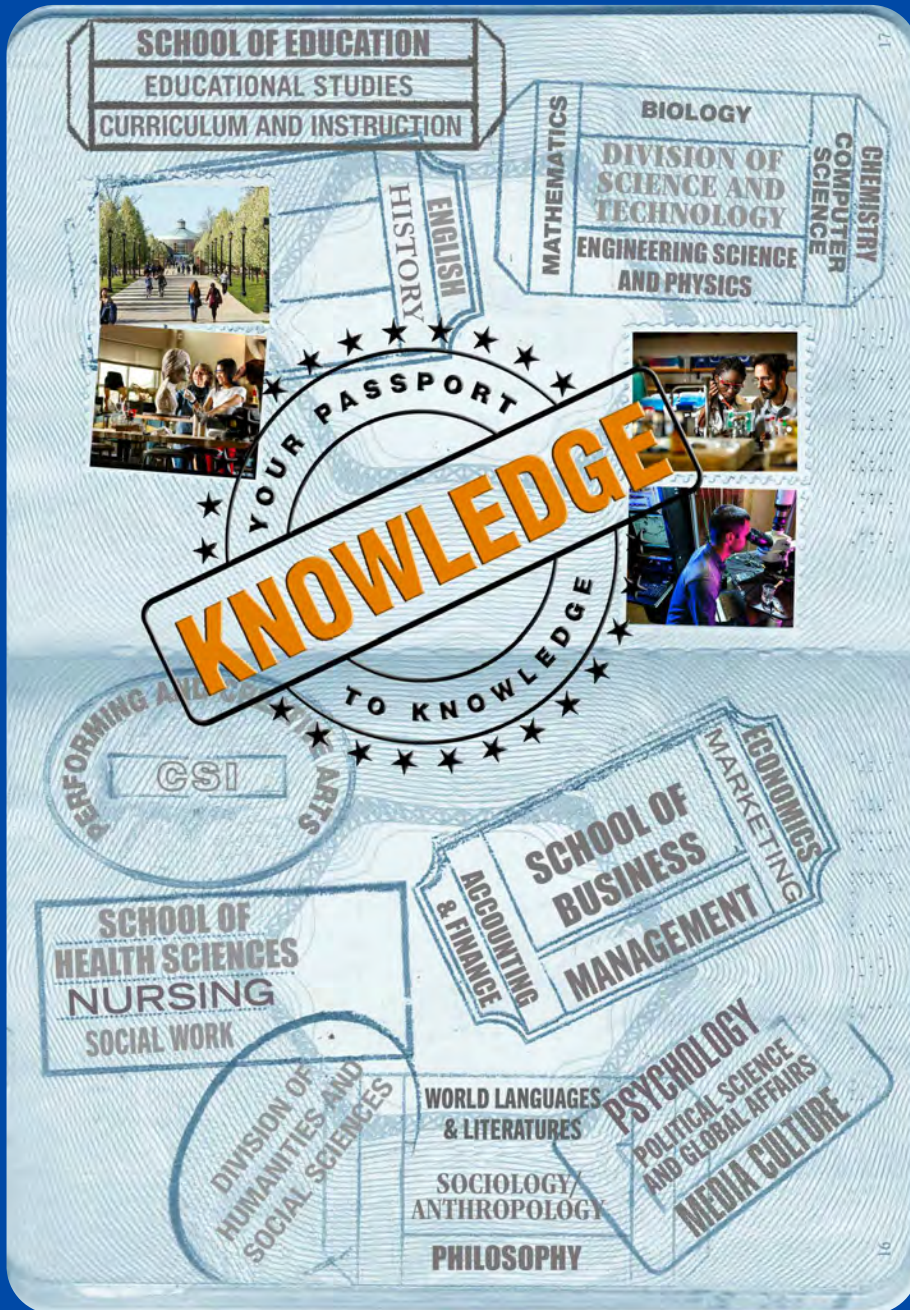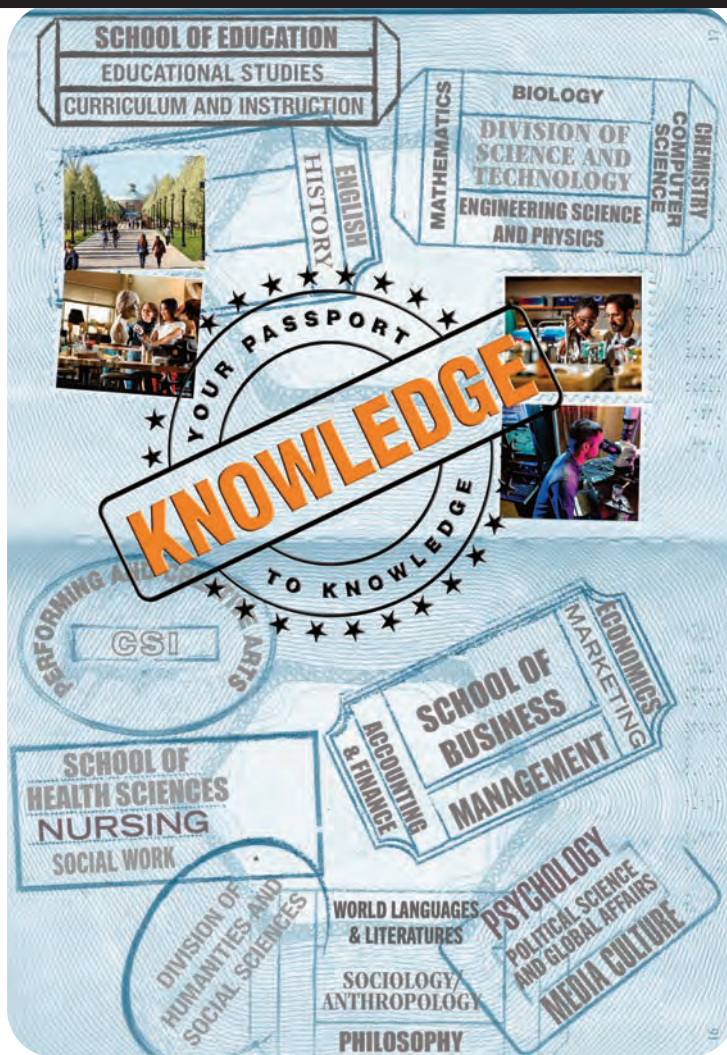# CSI UNDERGRADUATE CONFERENCE ON RESEARCH, SCHOLARSHIP, AND PERFORMANCE
THURSDAY, MAY 4, 2017

THE CITY UNIVERSITY OF NEW YORK
College of Staten Island

CSI UNDERGRADUATE CONFERENCE ON RESEARCH, SCHOLARSHIP, AND PERFORMANCE*

Thursday, May 4, 2017
Center for the Arts, 1P-Atrium
11:00am – 4:30pm

*Sponsored by the Division of Academic Affairs with funding from
the CSI Student Government, the Office of Alumni Relations, and the CSI Foundation

CSI Undergraduate Conference on Research, Scholarship, and Performance 2016

Conference Schedule — Thursday, May 4, 2017

11:15am-12:05pm	CSI Chamber Music Recital Recital Hall 1P-120
12:00pm-4:30pm	The Gallery of the College of Staten Island 1P-112
12:15pm	Lunch available for participating students and mentors 1P-116 (pick up)

1:15pm-2:15pm   Plenary Session - Williamson Theatre, 1P-111
- Opening remarks from Gary Reichard, PhD, Provost/Senior Vice President for Academic Affairs, College of Staten Island
- Keynote Address: Vivian Incera, PhD, Dean of the Division of Science and Technology, College of Staten Island "Undergraduate Research: A Great Pathway to Discovering your Passions, Realizing your Strengths, and Sharpening your Skills"

- Ma rendi pur contentoVincenzo Bellini (1801-1835)
- Seligkei.Franz Schubert (1797-1828)
  Melissa Casertano, soprano   William R. Bauer, piano
- Ballade No. 1 in G minor, Op. 23
  Frédéric Chopin (1810-1849)
  Xingru Duan, piano

2:15pm-4:15pm	Poster Presentations 1P Atrium, East and West Lounges
2:30pm-3:30pm	Panel Discussion 1P Lecture Hall
3:00pm-4:00pm	Paper Presentations 1P-202
3:00pm-4:00pm	Paper Presentations 1P-218
3:00pm-4:15pm	Paper Presentations 1P-222
2:30pm-4:30pm	CSI Student Art Exhibitions Art Gallery 1P-118B
3:00pm-3:45pm	Dance Program Dance Studio 1P-220

CSI Undergraduate Conference on Research, Scholarship, and Performance

Message from the President

It is my pleasure to welcome you to the 16th Annual Undergraduate Conference on Research, Scholarship, and Performance.

The conference theme, "Your Passport to Knowledge," reflects the breadth and depth of knowledge and talent of our undergraduate students. This annual event showcases the intellect and talent of CSI students, as well as the commitment of our faculty to provide a world-class education for our students. It is through guidance from and collaboration with CSI faculty that our students are able to produce research, scholarship, and performances of the outstanding caliber that you will enjoy today.

This year, we have more than 400 participants in the conference, representing an extensive range of disciplines. This year's presentations include abstracts presented by individual students and groups of students, musical and dance performances, and student exhibitions of works of art. You will have the opportunity to immerse yourself in creative musical and dance performances, rigorous analyses of social scientific and literary ideas and theories, and meticulous mathematical and scientific investigations and inquiries.

Undergraduate Research Awards, sponsored by the CSI Foundation, have supported eight of our students' research projects. This year, we received additional funding from the CUNY Coordinated Undergraduate Education (CUE) program that supported an additional 86 research projects. We are also extremely grateful to the Office of Academic Affairs for additional financial support of the conference.

I would like to acknowledge Philip Halsey, who has provided assistance to our student participants that enabled them to enhance the visual aspects of their presentations; and Jessica Stein, Delia Rios, Celeste Faiella, and Barbara Verteramo, Office of the Provost, who handled a myriad of tasks and details making the conference possible. Finally, I would like to thank Dr. Margaret Ellen (Mel) Pipe, Associate Provost for Graduate Studies, Research, and Institutional Effectiveness; and Jonna DeSantis, Assistant to the Associate Provost, for coordinating the conference.

I would also like to thank and extend my sincere appreciation to the CSI Alumni Association for donating t-shirts for the volunteers, Design Services for the creation of all signage and the organization of the conference booklet, the Center for the Arts and Media Services for technical support, members of the conference planning committee, and the Verrazano School and Macaulay Honors College volunteers who gave time to assist with the organization of this event.

I am proud that this conference represents true collaboration across the College community, and I appreciate the roles played by all in presenting today's events.

Congratulations to each and every one of today's participants!

Sincerely,

William J. Fritz
President

THE DEPARTMENT OF
PERFORMING AND CREATIVE ARTS

PRESENTS

AN ART, DANCE, AND MUSIC EXPOSITION

at

The 16th Annual CSI Undergraduate Conference on Research, Scholarship, and Performance

The Recital Hall, the Williamson Theatre,
the Dance Studio, the Student Art Gallery, and
The Art Gallery at the College of Staten Island

Center for the Arts
Thursday, May 4, 2017

CSI CHAMBER MUSIC RECITAL
11:15am –12:05pm

A showcase of chamber music featuring students of the CSI Music Program
Prof. William Bauer, Performance Coordinator

Program

Lungi da te, ben mio ....Giuseppe Sarti (1729-1802)
Trinita Goonatillake, soprano   William R. Bauer, piano

O del mio dolce ardor ....Christoph Willibald Gluck (1714-1787)
Matthew Weitzman, tenor   William R. Bauer, piano

Vergin, tutto amor ....Francesco Durante (1684-1755)
My One and Only Love ....Guy Wood (1911-2001) and Robert Mellin (1902-1994)
That Old Black Magic ....Harold Arlen (1905-1986) and Johnny Mercer (1909-1976)
Sophia Sparnroft, soprano   William R. Bauer, piano

Ma rendi pur contento ....Vincenzo Bellini (1801-1835)
Seligkeit ....Franz Schubert (1797-1828)
Melissa Casertano, soprano   William R. Bauer, piano

Sonata in A Major, Op. 120, D. 664 ....Franz Schubert (1797-1828)
    Allegro moderato
    Andante
    Allegro

Xingru Duan, piano

Branches of a Trio ....Johnny Reinhard (b. 1956)
Jonathon Greenlinger, violin I   Jialing Deng, violin II   Dan Auerbach, violin

Deux Interludes ....Jacques Ibert (1890-1962)
Jialing Deng, violin I   Dan Auerbach, violin II   Xingru Duan, piano

THE WILLIAMSON THEATRE 1P-111

PLENARY SESSION
1:15pm – 2:15pm

Performance section

Prof. William Bauer, Performance Coordinator

Ma rendi pur contento . . . . Vincenzo Bellini (1801-1835)

Seligkeit. . . . . Franz Schubert (1797-1828)

<div align="center">Melissa Casertano, soprano William R. Bauer, piano</div>

Ballade No. 1 in G minor, Op. 23. . . . . Frédéric Chopin (1810-1849)

<div align="center">Xingru Duan, piano</div>

CSI DANCE PROGRAM
3:00pm–3:45pm

Dance to Freedom
Prof. Charles Thomas, dance coordinator for URC
Choreography by students supervised by Professor Walter Rutledge, dance instructor

DAN 101 – Contemporary Dance Technique

Felicia Adesina, Jacqueline Asubonteng, Ashley K Berrio, Jarrius C. Bethea, Marie Elaina Causi, Elaine Cortes, Ahmad M Demes, Nackeitha E Forbes-white, Shaw-Na C. Gates, Shahzoda Gazarova, Demetrius Guirand, Janan Halim, Renalle L. Julien, Whitney Longmore, George Mattocks III, Imanie Myrie, Christina Napoli, Keyana T. Newman, Savannah Nunez, Oluwabusayo Olujobi, Jessica Pinto, Khalia Steadman, Rassetta R. Stills, Aaliyah Telford, Michelle Vasquez, Cemmone Williams, Diandre Wong

DAN 112 – Choreography II

Shemanda Abraham, Rasheed Afolabi, Chioma Agu, Rafiat Banwo, Damaris D'Amico, Shannon DeStefano, Dialikatou Diallo, Sareena Faucher, Nicolette Goss, Aurelius Anthony Irving, Kyla Iton, Billie Love, Nicole Manirampa, Nia-Shana A. Mayers, Brittany J. Mcgarvey, Lofatou Paye, Cayla Pellegrino

Professor Charles Thomas, dance instructor

DAN 122 – Black Dance Workshop

Nkiruka M. Agu, Asma Akram, Agossi Amoussou, Nekoela Bishop, Modesta Boafo, Kholette A. Borneo, Maria A. Boshnack, Keair E. Brown, Marie Elaina Causi, Pin Desilva, Chineyenwa C. Duru, Nicolette Esposito, Rojell V. Hayman, Alissa Mangiacapre, Ashley Martin, Raquel Moran, Olapeju Oladitan, Adaze Orjiugo,Oluwabusola Oyenuga, Jessica Pinto, Rajief Raglan, Alejandra Romero, Nisaa Salley-Thomas, Alaaldeen Shehadeh, Lua Stutzer, Mariama Tekanyi, Essence Thomas, Brianna Traverso, Siyda Williams

UNDERGRADUATE RESEARCH CONFERENCE EXHIBITION
2:30pm–4:30pm

The Spring Art Program Exhibition is a student-curated group exhibition representing the wide range of talent in the CSI Art Program. This year's exhibition includes work in drawing, painting, sculpture, printmaking, and photography.

Co-curators: Matthew Hogan, Angel Ocampo, and Melanie Rodriguez

Faculty advisor: Professor Miguel A. Aragon

Katherine Acevedo	Joseph Marron
Shianne Archer	Phil Mcguire
Faith Ann Baird	Alisha Monsalvo
Vera Cadwell	Summer Naanaa
Liana Capuana	Jackson Neil
Jian Wen Chen	Gary Pizzolo
Vanessa Cristino	David Rubin
Rohini Dewanarayana	Tanya Rodriguez
Stephanie DiAngelo	Cameron Rodriguez
Crystal Frias	Igor Safronov
Eileen Frydberg	Suting Tu
Phillip Jarell	Bertha Villa
Jitha Jayawickrema	Paloma Zacarias
Edyta Kostka-Makowska	

CO-CURATORS OF THE UNDERGRADUATE RESEARCH CONFERENCE ART EXHIBITION
2:30pm - 4:30pm

Professor Miguel A. Aragon, *Assistant Professor in Printmaking*

Artwork made by the co-curators of the 2017 Undergraduate Research Conference Art Exhibition will be on display. Medium ranges from digital drawing, collage, and painting to traditional printmaking techniques such as drypoint, etching, aquatint, and linocut.

Matthew Hogan   Angel Ocampo   Melanie Rodriguez

THE GALLERY OF THE COLLEGE OF STATEN ISLAND, 1P-112

Don't Grab my Papaya!
Noon – 4:30pm

Kira Nam Greene's (http://kiranamgreene.com) work explores female sexuality, desire and control through lush still-life paintings of food, surrounded by complex patterns and abstract designs. Imbuing the feminist legacies of Pattern and Decoration Movement with transnational/multicultural patterns, Greene creates colorful paintings that are unique combinations of realism and abstraction, employing diverse media such as oil, acrylic, gouache, watercolor, and colored pencil.

Katrina Majkut (http://katrinamajkut.format.com) is dedicated to understanding and exploring feminine narratives and civil rights in aesthetics and social practices within mediums such as embroidery, painting, and writing. Historically, cross-stitch often denoted ideas of womanhood, wifedom and motherhood but excluded bodily functions, autonomy and diverse lifestyles, which are essential for any of those roles. Her artwork *In Control* seeks to directly challenge this concept by attempting to stitch all modern products related to women's health/needs with bipartisan, medically honest approaches. It also seeks to respond to contemporary issues surrounding reproductive rights and women's bodies.

Kiyan Williams (kiyanwilliams.com)
Kiyan Williams (gender pronouns they/them/theirs) is a multidisciplinary artist who explores black queer subjectivity. They create performances, texts, objects, videos, sounds, and installations informed by autoethnography, archival research, and social practice.

Kiyan was born in Newark, NJ and currently lives and works in the Bay Area. They have performed/exhibited work across the country and internationally at venues including: Dixon Place (NYC), JACK Theater (NYC), La Mama Experimental Theater Club (NYC), SOMArts (San Francisco), SFMOMA (San Francisco), Bing Concert Hall (Stanford), Orpheum Theater (Graz, Austria), and more.

Kiyan was an EMERGENYC fellow at the Hemispheric Institute for Performance and Politics at NYU, fellow in the Create Dangerously: Writing for Performance intensive at the Obie-winning JACK Theater (Brooklyn, NY), and artist-in-residence at Destiny Arts Center (Oakland, CA). Kiyan has received additional awards from the Trans Justice Funding Project, Stanford University, and the Bill and Melinda Gates Foundation. They earned a BA with honors in Comparative Studies in Race and Ethnicity from Stanford University.

RESEARCH PAPER PRESENTATIONS AND PANEL DISCUSSIONS

CENTER FOR THE ARTS
2:30PM–4:30PM

1P-222
3:00pm – 4:15pm

P A P E R # 3

One-Punch Man: Undefining the Hero and Villain

Robert Cherrick

Faculty Mentor: Professor Lara Saguisag
Department of English

The modern trend for superhero stories is to introduce dialogues and avenues for a series to explore that attempt to make it have deeper meaning and be more attractive to the average reader. More often than not, this trend accomplishes in diluting the core text and muting more minor characters and

villains in contrast to the protagonist.This is where the series One-Punch Man comes in and harkens back to the golden age of comics. A time where heroism was portrayed through simpler actions and the meanings were just as important and powerful. It proves that by reeling back on the complicated exposition, other aspects such as the stunning art, visual metaphors and character arcs are given even greater opportunity to shine. One-Punch Man is important to this culture of heroism that permeates our society, and it is

this avenue I wish to pursue in my research. I wish to do a character study of the protagonist and antagonist, Saitama and Garou respectively, with comparisons to other large works which feature a clear (or muddled, in some cases) hero/villain dichotomy. Later in the series a villain is introduced with a similar story to Saitama, they are heroes just because they want to be. They both wind up becoming incredible characters that carry the story whenever they are in the panel. This led me to realize that the simpler a character's motivation, the more effective their character/arc can be. This rings true for the protagonists and the antagonists, look only to such other examples as Beowulf from his titular Beowulf, the Joker from multiple iterations of Batman, Iago from Othello, Goku from Dragon Ball, Darth Vader from Star Wars, or the Tyrannosaurus Rex from Jurassic Park. All of these characters are memorable because their entire character can be boiled down to single words, Heroism, Chaos, Jealousy, Childish, Angry, or Predator respectively. How these characters can deliver a clear message and carry a meaningful story in a way that has been lost on the popular stories of today

P A P E R # 1 4 8

Saviors, Demons, and Gods: the Influence of Faith and Mythology in the Lion, the Witch, and the Wardrobe

Marissa Garzetta (Macaulay Honors College)

Faculty Mentor: Professor Suha Kudsieh
Department of English

Most people who have read C.S. Lewis's The Lion, the Witch, and the Wardrobe recognize the Christian themes it contains. However, many readers fail to notice the influence of Greek mythology in this savior story. Lewis did indeed write his novel with a distinctly Christian message in mind: he desired to bring about a revival of faith in post-war England. Because of the horrors of World War II, a large portion of the population rejected religion, questioning how a virtuous god could allow the suffering that almost every British citizen experienced. Yet Lewis also knew that preaching at his target audience would not be effective. Thus, he drew on his background in classical myth, softening the story's evangelical bent without masking the connection to the gospels. In this conjunction between Greek mythology and Christian religion, Lewis created the world of Narnia, filled with the characters and situations known so well today. This research paper explores The Lion, the Witch, and

the Wardrobe's connection to Euripides' Iphigenia at Aulis in several ways, all culminating in discussing the motif of human sacrifice. The discussion includes comparisons between the White Witch and Artemis, the identity of the human sacrifices, the ritual of sacrifice, the causes for the sacrifices, and the voluntary nature of each sacrifice. The research paper also references the gospel account of Jesus' sacrificial death, demonstrating where Lewis's allegory resonates with the Bible. The Lion, the Witch, and the Wardrobe synthesizes secular and religious imagery to create a beautiful allegory of sacrifice. When writing this novel, Lewis strongly identified as both a competent scholar and a devoted Christian. To analyze his work as solely the product of scholarship or religion does both the man and the novel a great disservice

PAPER #218

LGBTQ Representation in Disney

Lauren McKenna, Brian Spagnoli (The Verrazano School)

Faculty Mentor: Professor David Gerstner
Department of Media Culture

Background & Purpose

This research looks at the queer characters in the animated works of Disney from the Disney renaissance, beginning in 1989 with The Little Mermaid and ending in present day. We have examined how LGBTQ traits and characters are represented historically and analyzed the evolution of that representation in Disney films. In conjunction with previous research, we highlight that when production and cast members identify as LGBTQ, themes and characters also under the LGBTQ umbrella can be recognized. Comparing past studies with ours, we also highlight what LGBTQ traits stereotypically are, as theorized by film historians Vito Russo and Sean Griffin, and how they are changing.

There are clear changes with LGBTQ representation over time, and the response from the American populace is varied with conservative critics and progressive critics both offering negative evaluations of the changes. This research also showcases why those critiques are brought up at all and why these character tropes exist at all for LGBTQ people. The animated films of Disney have had a change in representation of queer characters, that now encompasses more diversity in contemporary Disney films of individuals that identify under the LGBTQ banner. Our desire it to call attention to the impact of representation because of its importance in its ability to lead people to a greater awareness of the social and political issues of the LGBTQ community.

PAPER #9

Modern Heroism in the Face of Archaic Adversity: The Life and Works of Abdelrahman Munif
Beren Sabuncu

Faculty Mentor: Professor Ashley Dawson
Department of English

The project will focus on a scarcely known literary pioneer, Abdelrahman Munif. The foreman of "petrofiction", Munif was exiled from his country, even called a heretic. Ideologies are explained and created through literature, then transferred from mind to mind. This is the precise reason why there have been many banned books all over the globe. The many book burnings of oppressive entities over the years were meant to stop the snowball effect of literature, as the oppressive entity tends to have a fragile ego and a fearsome interior beneath all its bravado. These oppressive entities know that

all it takes is one idea sparking another, and just like that its power declines. Hence, the writer is a warrior, accepting the probable consequences. Excerpts of Munif's work will be read, and explained with quotes from Karl Marx. How does the petroleum commerce cause cultural and societal decay? How to intellectually combat this decay? How is Karl Marx relevant to petrofiction? "Modern Heroism in the Face of Archaic Adversity: The Life and Works of Abdelrahman Munif" zooms in on the common enemy, societal and political greed, and one of the heroes that fights it.

1P-202
3:00pm – 4:00pm

PAPER #129

Community Connection versus Curriculum: Evaluating CSI'S MSW Program

Trystan Gangi

Faculty Mentor: Professor Mayra Humphreys
Department of Social Work

The Council of Social Work Education requires all accredited social work programs to engage in multidimensional assessment, which often includes the surveying of alumni. Similarly, the MSW Program at The College of Staten Island (CSI) has included the CSI MSW Program Alumni in its program assessment. Drawing on personal experiences and peer responses, this paper examines alum's attainment of social work licensure and its relationship to alum's assessment of the program's community and curriculum. This study aims to explore the importance of the MSW program's social environment as well as the influential aspects of the program curriculum that assist in preparing the next generation of licensed Social Workers. Study outcomes will provide insights that can inform future program changes to the MSW program that assist future students to achieve their professional goals.

PAPER #184

Credible Messengers

Virgil Hayes

Faculty Mentor: Professor Mayra Humphreys
Department of Social Work

The presentation will examine a peer mentoring training model, developed by the researcher and community stakeholders, that supports secondary desistance changes for formally incarcerated adults who are mentoring justice-involved youth. The research study was designed using a mixed methods approach that included secondary analysis of existing de-identified survey data and primary data garnered through focus groups, to answer the following research questions: (1) To what extent do participants self-esteem, assessed personal growth, self-compassion, and self-awareness change from before to after participation in the CM training program?; (2) What are participants secondary desistance related changes experiences after participation in the CM training program?; and (3) What are participants intentions for secondary desistance related behavioral change after participation in the CM training program? The de-identified survey data was provided by Community Connections for Youth (CCFY), an organization that provides peer-mentor training to returning citizens who are seeking to become Credible Messengers (CM). Following the reports of the research study, the presentation will conclude will be followed up by data extracted from various scholarly peer-reviewed articles that examines the implications for the social work profession.

Justice Waiting: A Study on Public Perception of Police

Krystal Raiford-Sanchez

Faculty Mentor: Professor Esther Son
Department of Social Work

Background & Purpose

With black lives lost like Eric Garner, Tamir Rice, & Aiyanna Jones, policing methods in America have been facing great criticism. However, there is a lack of research on public perceptions of the police, which is necessary to create policy reforms that would strengthen positive police & community relations. The purpose of this study is to examine how the public perceives the police, & to determine if race/ethnicity affects perceptions of police misconduct, perceived police prejudice, personal/vicarious experience with police misconduct, &personal/vicarious experience with racially biased police conduct. Methods A quantitative research study using an anonymous survey was conducted at various locations in New York City, including CUNY College of Staten Island, HeartShare St. Vincent's, as well as through a private Google Form link. The sample included a diverse array of participants, including Hispanics (n=41), Black (n=41), & White (n=50). Participants' age varied between the ages of 18 & 75. More than half of the participants (60%) were women & the majority of the participants had college education (or higher). Descriptive & bivariate analyses (i.e., ANOVA & Chi-Square tests) were performed using SPSS software package. Results Racial/ethnic differences in perceptions of the police & reported personal & vicarious experiences of the police are found. First, with regard to perceptions of police misconduct & perceived police prejudice, we found that Blacks & Hispanics do differ significantly; Hispanics were significantly less likely to perceive problems than are Blacks. Second, Blacks &Hispanics were significantly more likely than White to report that they had personal & vicarious experiences with racially biased police conduct. Lastly, there were no statistically significant differences in reported personal & vicarious experience with police misconduct among three racial/ethnic groups of the participants. Conclusion & Implications The results provide substantial evidence that race/ethnicity highly affects perceptions of police misconduct, perceived police prejudice, & the likelihood of experiencing racial discrimination by police. The development of policy reforms to improve police & community relations are urgently needed.

The Experiences of Parent-professional Interactions and the Use of Professional Interpreters among Korean Immigrant Mothers of Children with Developmental Disabilities

Hye Seung Yoo

Faculty Mentor: Professor Esther Son
Department of Social Work

This study examined the 10 Korean immigrant mothers who are residing in New York City that have children with developmental disabilities. Previous studies have shown that many Korean immigrant mothers go through emotional pain, misconception that their children's disabilities could be cured, and lack of support from hospitals and schools while living in the United States. It is especially difficult when the Korean immigrant mothers have children with developmental disabilities. An exploratory qualitative study was conducted, using convenience and snowball sampling methods. Individual in-depth interviews using a semi-structured interview guide were conducted to understand the personal experiences of Korean immigrant mothers in-depth. The interviews were transcribed and translated verbatim and analyzed using thematic analysis. This research has identified

miscommunication between mothers and interpreters, educators or health care workers, and cultural barriers. The findings have indicated that these mothers need high quality and compassionate interpreters and professional workers to receive effective early health care and special education services and achieve successful outcomes for their children. It is also important for these mothers to gain effective advocacy skills and receive culturally competent services in order to improve parent-professional interactions. Implications for health care and education professionals will be discussed to reduce barriers and challenges to effective communication with professionals and foster positive parent-professional interactions.

1P-218
3:00 – 4:00pm

P A P E R   # 1 7

Nostalgia and Nobility in Sicilian Perspectives on the Risorgimento

Anastasia Hayes

Faculty Mentor: Professor Peter Kabachnik
Department of Political Science and Global Affairs

Edward Said's "Invention, Memory, and Place" (2000) discusses our inability to conceive of places objectively. The narratives we create for them are not "false," but "perceived" and so the imagined geographies of different communities can vary widely. I propose to investigate this concept in a Sicilian setting, examining the imagined geographies of Sicily as constructed in Il Gattopardo (1958). Giuseppe Tomasi di Lampedusa, a member of the expired Sicilian nobility, inhabits the life of his grandfather during the Risorgimento as it unfolds in Sicily. He envisions the reforms of the period as a failure not only due to their heavy-handedness but because of the very nature of Sicily. It is a place totally adverse to change. His protagonist, the Prince of Salina, embodies this adversity; he mourns the eclipse of the nobility who have provided the island with structure since the 13th century. Though he grasps with astounding clarity that all is not well in Sicily, he insists that it cannot change. The novel was a global smash hit and inspired a more critical assessment of the Risorgimento within Italy. Despite Lampedusa's contrarian attitudes in that respect, he reaffirmed a discourse concerning Sicily that has circulated since before Risorgimento: Sicily is an end, not a beginning. This sense is heightened by tying the island's history to his own family's fortunes. I propose to flesh out the imagined geography Lampedusa creates and to examine what kind of reach his vision of Sicily has had in modern discourse surrounding the island. I will also put The Leopard into conversation with Vincenzo Consolo's Il sorriso dell'ignoto marinaio (1976). Set during the Risorgimento and featuring Sicilian nobility, it presents a much different picture of the island: Consolo prizes its multicultural heritage and combines his Baron protagonist's voices with those of Sicilians of various social backgrounds. It is interesting that this vision of the island is provided by a writer who left Sicily. The considerations of imagined geographies will expand as I examine Consolo's nostalgia for a time gone by compounded by his physical distance from his homeland.

Solitary Confinement: The Prison within a Prison

Kenneth Morella (The Verrazano School)

Faculty Mentor: Professor Peter Costa
Department of Psychology

Since its creation in the early 1800's, solitary confinement has been a mainstay in correctional facilities across the United States. The current practice of solitary confinement requires the inmate to spend 23 hours per day alone in their cell and provides sparse opportunities for social interaction, education and entertainment. By subjecting inmates to conditions that promote sensory deprivation and isolation, correctional facilities are putting these inmates at risk for mental and physical harm. This research project will seek to examine the recent literature connecting solitary confinement to symptoms of mental illness. In addition, other aspects of solitary confinement will be investigated including the selection process used by facilities, the conditions found within supermaximum units and the recidivism rates of individuals formerly held in solitary confinement. By reviewing current research, this project hopes to expose the dangers of solitary confinement and promote a change in current policy.

Robert Kennicott Suicide or Accidental Death

Winston Richardson

Faculty Mentor: Professor Susan Smith-Peter
Department of History

Alaska has not always been a part of America. Before it was considered an American territory it instead belonged to the Russians. American interest in Russian America, as it was initially called, did not begin until there was interest in placing a telegraph through the area to connect the united states to the European side of the world. A telegraph line through the Bering Strait was believed to be an easier alternative to the deep underwater route through the Atlantic. Although the focus would be on the telegraph line there were other things that the Americans wanted to get done while they were in Russian America. One of the men tasked with exploring it was a young Robert Kennicott. A well-known member of the Smithsonian Institute long before he took part in the expedition, Kennicott was the only American on the expedition to die during his travels through Russian America. There has been a long debate on whether or Kennicott died or committed Suicide on May 13th 1866. Research however shows that Robert Kennicott from his youth onward was a very sickly man. The lack of medicinal advancements at the time led to his illnesses getting worse. His ongoing illnesses long with the harsh change in climate led to his accidental death from overdose.

Haitian Women's Pathways in Education

Pharlande Saint Juste Gaspard

Faculty Mentor: Professor Fatoumata Seck
Department of World Languages and Literatures

The number of minorities in Higher Education has increased over the years. However, students' success in college has not. Is it due to the lack of support or a lack of financial assistance? One

minority group that comes in large numbers in the US to obtain advanced and college degrees are the Haitians. My research explores gendered patterns of migration in Haiti. The combinations of factors that contribute to migration over the last three decades of many Haitians who seek a new life elsewhere are violence, repression and economic collapse. Although both Haitian men and women migrate to the US; my research focuses on factors that contribute to the educational success of Haitian-American women. According to statistics, results from Haitian women who are born in the United States differ from those who are born in Haiti. This suggests that perhaps they faced different challenges as students. This study will highlight the accomplishments and challenges of Haitian women born in Haiti who migrated to the US. Using a comparative approach, I will show how Haitian women transformed the face of the Haitian diaspora for the past decades.

P A P E R # 7 7

Disease in Colonial America

Zahra Syed (The Verrazano School)

Faculty Mentor: Professor John Wing
Department of History

The Atlantic World is a term that refers to the "interactions and exchanges" between the continents that border the Atlantic Ocean, especially the importation and exportation of products that were hitherto only found in their respective regions. Oftentimes, an importation of a very deadly substance was brought into the New World, unbeknownst to both the carrier and the receivers until this very thing grew into a full-fledged epidemic. Today, the typical education an average student is provided with includes the magnification of the (undeniably important) role of the colonial European medical approach to the "Old World" diseases that were brought over from the trade. While disease in the Atlantic World have been studied extensively, the ways in which the three colonial groups responded to and treated disease as a whole has received less attention. The depiction of the collective colonial responses where the Natives, Africans, and Europeans treated disease, and how these responses can be approached from an Atlantic perspective as the interaction of these three groups led to an exchange of practices and ideas pertaining to the treatment of disease has been neglected. Though I may not be performing a thorough comparative history of disease treatment in colonial America, I will be looking into the contexts in which, I argue, serious crises related to disease outbreaks led to an acculturation of disease responses. For example, I will look at cases in which one population group borrowed medicinal plants traditional to another group or adapted medical practices from a different culture when their own traditional responses did not hold up in the face of disease. The acculturation of responses and cures to disease include the usage of plants and herbs hitherto used solely by the Natives, the forced use of quarantine in the Indigenous population, the introduction of inoculation into the Euro-American society, and the use of African religious rituals by the Europeans.

PANEL DISCUSSION – 1P LECTURE HALL
2:30 – 3:30pm

"ebay American Marketing Association Collegiate Case Competition: ebay Brand New"

ebay Brand New: Cash Budget Analysis

Jacqueline Barbarino

Faculty Mentor: Professor Dan Zhang
Department of Marketing

Final important decisions will be made collectively as a team. For my part of the eBay Case

Competition, I will focus on budget analysis. This part of the case will account towards twenty percent of the points. We were allotted five million dollars to spend on any marketing efforts we suggested. I plan on utilizing my knowledge developed in previous business related courses and other research sources to strategize a budget. First the group will need to decide what promotions we will want to implement. I will be in charge of analyzing each campaign and the mediums we wish to market them on. From there we will implement a proposed timeline. Depending on which mediums are chosen, I will have to do some media buying research. It is an important factor to know how much it costs to advertise on each platform. Research will introduce me to what costs are involved in producing television commercials, social media content, metro advertisements, and other possible outlets decided. After doing extensive media buying research

I will then look at our proposed campaign timeline to find out how long we plan to run each one.

Then I will a lot a marketing budget for each month, which will be consistent according to how many campaigns are running that month. As a team, we will collectively decide on how to manage the budget and use resources to make executive decisions based on our primary research.

Managing the budget throughout the process of creating campaigns is crucial so we don't overspend. Budgeting is important to this case particularly because it allows to see whether or not the strategies and ideas we produce are feasible or not.

ebay Brand New: Marketing Tactics – Promotion in Specific

Joseph Curcio

Faculty Mentor: Professor Dan Zhang
Department of Marketing

In creating the case for eBay we are going to create a time-line that will show our future plans. We will start our time-line with the month of July and run in until June 2018. We intend to start July with a big campaign that will grab attention and make a new statement for eBay. Since we plan on starting in July we must create something that will focus on the "cool" summer feel and develop an advertisement that will enhance the image of eBay. After this campaign is displayed, eBay will focus on advertising during the back to school season so we will be developing creative ideas to ensure we put out an advertisement that will assist in raising awareness of the company for the upcoming August-September. From there we will progress according to season. Next month up will be October which will include an idea that will promote the Halloween holiday with a special eBay promotion.

The following month will include a promotion or advertisement that will display eBay's deals for black Friday and cyber Monday. December brings us into a new holiday season where we can an advertisement or donation promotion that will allow us to tug the heart of customers/consumers of eBay. January marks a new year which will be a perfect time to create a template for a new kind of eBay. The New Year leads into February which will focus on Valentine's Day. The next big focus would be on the spring break season. This campaign/promotion can run from March into April. This leads us to the month of May where we will be able to focus on Mother's day promotions. Following Mother's day we will finish the year rotation with Father's day promotions.

P A P E R   # 1 9 0

ebay Brand New: Key Findings

Toufic Eid

Faculty Mentor: Professor Dan Zhang
Department of Marketing

Processing primary research is a vital aspect to formulating a proposed marketing plan for eBay's target audience. My main focus is to analyze the data collected and devise key findings in order to observe common patterns among millennials. This in return will allow me to make final decisions when building the marketing plan. The key findings are essential in that they will summarize and demonstrate areas that need adjustments. When completing key findings, I will look across all primary research methods completed. I will review the data conducted during the focus groups, the primary survey distributed, the social listening data, and the recorded observational research. Each section provides a particular aspect of eBay.

It is important to summarize the results in key findings in order to have a better understanding of what needs to be adjusted. Within the focus groups, I will be looking for participant's thoughts regarding eBay and any recommendations, or ideas to take into consideration. Within the primary survey, I will be looking for millennials attitudes and thoughts towards eBay. I will also be looking at demographics in order to identify a target market. As an example, if I want to know if more males or females viewed eBay positively, I would be able to deduce that from the primary research. Furthermore, knowing there, age, income level, education, and daily hobbies are all important for creating a plan. The primary survey will also provide me with information regarding individual's main priority when making purchases online. This is necessary to know, as it will help me pinpoint the strengths and weaknesses of eBay.

Additionally, I will be conducting key findings for observational research. For observational research, I want to identify if eBay's mobile and web content is portrayed in an attractive way towards millennials. I will be looking at the necessary adjustments that need to be made when analyzing the heat maps formed. Additionally, the key findings from the heat maps will help determine if it will be necessary to remodel the website. The key findings from the VALS Survey will help me identify common personality traits among individuals who view eBay positively. From this information I will be able to outline key findings from the primary survey and the VALS Survey, in order to identify a target market for eBay and to eventually increase their sales forecast. Lastly, the key findings will help my team and I to think creatively and devise a brilliant and unique plan to increase the use of eBay among millennials and Generation-Z.

ebay Brand New: Marketing Strategy and Objectives

Caitlin Fontana

Faculty Mentor: Professor Dan Zhang
Department of Marketing

eBay lacks a clear positioning since its mission is very general and most users are unaware of all that it offers. It has expanded from its original purpose as an auction and vintage ecommerce site to an online retailer that sells brand new items as well. Due to this lack of clarity, a majority of millennials do not consider eBay as their first choice when shopping online. Thus, eBay must work to properly address these issues as well as find solutions to them.

The fourth section of the eBay Case Competition will offer proposals in understanding and dealing with eBay's position in the market. In order to approach these problems, the first step is to determine a strategy. eBay must reposition itself in order to compete against Amazon and other e-commerce sites. In order to do this it must provide a more aesthetically appealing user experience. The site should highlight its wide range of offerings from brand new to used as well as its Money Back Guarantee. By modifying eBay's homepage to include these options, misconceptions about eBay's offerings as a whole could be alleviated. Once a strategy is put into place, the positioning of eBay will be explored and expanded upon.

Because eBay's current position is that of an online auction-site in the eyes of millennials, it will need to establish a new position as a "one-stop-shop" for anything vintage or brand new. Unlike its competitors, eBay is now more equally weighted in brand new and used items and provides numerous options for what to do with a product. Therefore, correcting the misperception that eBay is auction only will be a major asset to the company.

Proposal options for eBay's future will be further explored with an in-depth analysis of the target market. This will be done using the VALS Personality Survey that will be distributed amongst millennials. This will determine primary and secondary personality traits and will determine what categories they belong in.

Lastly, there will be a formation and examination of eBay's marketing objectives. This will work to emphasize the need for eBay to approach the misperception that it is an auction only based site. Enhancing eBay's overall social media presence as well as monitoring its engagement will be discussed. In addition, a more thorough analysis of previously overlooked demographics, will be studied in order to potentially increase eBay's online sales of new products and online sales as well. Once the team officially devises up these proposals, we will use these ideas to carry out the proper marketing tactics for eBay's success.

ebay Brand New: Situational Analysis

Kimberly Hayes

Faculty Mentor: Professor Dan Zhang
Department of Marketin

The eBay company was founded in 1995 by Pierre Omidyar as solely an auction-based retail website. In the present day, eBay has expanded greatly by not only offering auction sales but brand new items and 'Buy It Now' options. Currently this e-commerce site is available in 180 different countries and also allows for individuals to set up their own digital storefronts. eBay has also expanded its scope by starting up new business and partners. Some of these partners include Close5, StubHub, Shyp, and eBay Valet.

For my part of the eBay Case Competition, I will focus on the situational analysis. The first step to be taken is analyzing the e-commerce industry which eBay has been a part of for more than twenty years. The industry itself has grown exceptionally since its beginning and is only continuing its growth which has led to increased competition in the marketplace. This rise in e-commerce competitors has led to eBay losing a large portion of their market share, so the focus for the company is figuring out an approach to regain a larger portion.

The situational analysis of eBay will be further explored with a research on the distribution of the e-commerce platform, as well as and the different shipping options available to sellers. Euromonitor will be adopted to determine the dominate market of e-commerce users and the expected growth rate for Internet retailers. An analyzation of how Social media has changed standard Marketing will also be addressed.

The next portion of situational analysis will include how eBay is currently implementing their Marketing efforts. An in-depth research will be needed in order to determine what is being implemented and how it is affecting the company. Strategies like their newly designed logo and endorsement from fashion model Karlie Kloss will be discussed. A S.W.O.T analysis will also be performed for this section of the case. There will be a full analyzation of eBay's strengths, weaknesses, opportunities, and threats which will allow for other students of the team to better understand eBay. Once there is concrete understanding of the company, students will be able to conduct further primary research and brainstorm on campaign ideas.

Once the situational analysis is completed, my teammates will move forward and complete the challenge which was of creating a Marketing Plan that will allow eBay to appeal to Millennials and Generation-Z non-users. Primary Research, Strategic Proposals, Marketing Tactics, Cash Budget, Timeline Implementation, Sales Forecast, and Measurement metrics will all be addressed in the full eBay Collegiate Case Competition.

PAPER #191

ebay Brand New: Marketing Tactics – 4Ps in General

Sydney Mojica

Faculty Mentor: Professor Dan Zhang
Department of Marketing

In my portion of the case, I will be concentrating on eBay's Marketing Tactics. The marketing tactics will involve the marketing 4Ps which include product, promotion, place, and price. These aspects are crucial for the execution of this case. For the first section, product, we will be conducting primary research in order to determine what the major issues consumers have with eBay as a website. After gathering data, we will brainstorm ideas and come up with suggestions we can offer eBay to improve their website. Moving on to the second section, promotion, using our research we will create a years' worth of promotional campaigns in order to reach the millennial and generation Z target market. To implement these campaigns, we will inquire the use of social media outlets such as Instagram, Facebook, Twitter, Snapchat, and etc., in order to develop a strong strategy to attract our desired target market. Each campaign will follow with the trends of the season it will be released in. eBay is known to have a huge global reach for their ecommerce market. Including the place portion of the case, we will continue to utilize our research in order to decipher where we will place our advertisements and strategic marketing ideas. We will not only consider using social media as our only source but we will have deliberation on the different type's media outlets. Price will be discussed while deciding what media outlets will be implemented in the marketing strategy. Collectively, we will make decisions based on other competitors in the ecommerce market. Using the budget as a reference, we will decide whether or not it is feasible to execute our marketing strategy.

Implementation of marketing tactics will be beneficial to the case in order to justify our reasoning and strategies that we will present in the future of the case. The marketing tactics four P's, product, promotion, place, and price, will contribute to the overall case and will benefit the use of creating our strategic marketing plan for eBay.

P A P E R   # 1 9 2

ebay Brand New: Sales Forecasting

Margot Noyloa

Faculty Mentor: Professor Dan Zhang
Department of Marketing

The section I am focusing on for the eBay Case Competition is sales forecasting. To calculate our sales forecasting we plan to estimate the revenue made for both one year, as well as five years. Through research we can see that eBay's fiscal year runs from January through December. Being that our campaigns will start in July 2017 and run through June 2018, it is assumed that when calculating our one-year forecasting we would use a portion of 2017's fiscal year and a portion of 2018's fiscal year.

Each of our campaigns is going to be implemented throughout a variety of months, and some will be associated with certain holidays. To determine the sales forecasting we will look at each month individually. Once our team determines which advertisements will be associated with which month we will be able to forecast monthly revenue. The use of different advertisements through multiply platforms will increase the company's impressions.

With an increase in impressions our goal is for an increase customer base. Therefore it is expected that our campaigns will have an impact in the sales forecast. Our team can assume that the revenue of the month that follows the campaign month would ideally increase. When the final monthly revenue is determined we will then use those numbers to determine the sales forecasting of year one, July 2017 to June 2018. This will be done by researching what the yearly percent change in revenue was in previous years in order to determine what it should be in the upcoming years to follow. As stated before, eBay's fiscal year runs from January through December. This being said in order to calculate our team's year-one forecast, we will retrieve the information needed from each fiscal year that is associated with our campaign time, and calculate the average.

Following our one-year sales forecasting, we will also research and determine a sales forecasting for the following five years. To begin this portion of our sales forecasting section; we will do extensive research of the eBay company. It is important to view and understand the eBay fiscal reports which are available to the public on their website. We will review five years previous to our campaign and then calculate the percent differences of each year. With this information and the predictions we determine from our year-one forecast we will implement the percent differences to make our five-year sales forecasting.

The sales forecasting section is an important aspect to our case because it will help to determine if our suggested campaigns and advertisements will provide an increase in individual recognition and an increase in eBay's revenue.

ebay Brand New: Measurement Metrics

Tian Richards

Faculty Mentor: Professor Dan Zhang
Department of Marketing

In effort to capitalize on eBay's established brand recognition and to combat a growing competitive market, this marketing plan proposes a clear repositioning of eBay as a 'one-stop- shop' for anything vintage or brand new. With a series of campaigns, the plan aims to increase eBay online sales by 6.5% over the course of year one by tapping into a previously overlooked market demographic, to maximize trial and brand loyalty amongst millennial users, and to enhance eBay's social media presence across Instagram, Facebook, Snapchat, and Twitter with a 65% total increase in engagement by June 2018. To track the effectiveness of the campaigns, a series of measurement metrics is necessary.

These measurement metrics will enable my team and I to develop guidelines and standards by which to track the theoretical success of our proposed marketing strategy. The measurement metrics will encompass website traffic, social media traffic, and sales. Each of these components plays a crucial part in our marketing strategy. Our primary research results were indicative of the need to redesign eBay's website. This new website will help emphasize eBay's new position as a one-stop shop with a new welcome page that invites users to shop brand new only, shop vintage only, or shop both.

Consequently, in terms of measurement metrics for website traffic, my team and I will track the number of clicks "New Products Only" garners on the new eBay welcome page compared to "Vintage Products Only" and "Both. I will also track the number of clicks on "Recommended Picks" and eBay's new collections, another new component that will be introduced on eBay's redesigned website. The number of clicks on the icons for eBay's partners (Close5, StubHub, eBay Valet) will also be monitored. In addition, an important part of gauging website traffic involves keeping record of the number of users that utilize the 1-year free shipping eBay student promotion and the number of users that choose to specify a charity during the "eBay Gives" campaign.

Many of the campaigns outlined in the marketing strategy call for the utilization of social media platforms such as Instagram, Facebook, and Twitter in an effort to make use of eBay's verified accounts to reach millennials and Generation Z by encouraging engagement, and increasing followership. To this end, the measurement metrics with regard to social media will involve gauging follower growth across eBay's social media accounts. Furthermore, it is important to monitor the engagement with the Snapchat "Move-in Day" story from the "Back to School" campaign as well as the engagement and entry into the various contests that were proposed in the marketing strategy.

Overall, it is the collection of data on the number of impressions vs. expressions each social media ad receives that is truly important for monitoring social media traffic.

The bottom line for any marketing strategy is to generate sales, and ours is no exception. Thus, measurement metrics for sales will be implemented. This includes tracking sales of new products versus the sales of vintage products. We will also apply marketing analytic modeling tools to relate incremental sales (overall vs. new product vs. vintage products) to campaigns.

Ultimately, this kind of monitoring and development of measurement metrics will allow this proposed marketing strategy to become more tangible and provide the participants with the ability to understand the analytical as well as success measurement aspects of marketing.

ebay Brand New: Primary Research

Nisma Zakria

Faculty Mentor: Professor Dan Zhang
Department of Marketing

An analysis of eBay's current status in the market is available to all users and non-users; however, this information is not sufficient enough in order to fully understand the needs and concerns of their target audience. In order to be able to fully develop a marketing plan, which will be based off a more tangible data set, it is important to survey eBay's current target audience- the millennials and Generation Z. The process of primary research is a major key to the steps that are taken afterwards in assuring that as an e-commerce site, eBay offers exactly what the target audience is seeking. Essentially the website will be molded by their interests and needs.

In this case, primary research will be divided into four different methods in order to completely grasp the current stance of eBay among millennials and Generation Z. The first method that will be used is social listening. This process includes monitoring what consumers are saying virtually about eBay, specifically about any recent campaigns that may have gained attention in social media. Social listening will be conducted using a multitude of analytical sites that worked to gather and investigate opinions, magnitude, and awareness of the service on social media sites. Social searcher analytics and Zoomph are two popular tools that generate mentions of eBay whether in the form of a hash tag or on various sites such as Twitter, Facebook and Instagram.

The second approach for comprehending eBay's target group is the use of focus group. The focus group will consist of a series of interviews with participants who will provide their opinions and personal knowledge about eBay as well as their viewpoint about the various products offered on their website. The participants will also be asked to provide their thoughts about eBay's top competitors.

Another way of gaining further insight was is by conducting a mass survey to the target audience via Qualtrics, an online survey platform. This survey will generate responses that will equip us with the users or non-users perception of brand image, purchasing behavior, usage, personal experience, knowledge about their offers, partners, and improvements eBay can make. Since this survey will be sent out to potential members of the target audience virtually, it is vital to include open-ended questions in which respondents input their own responses.

Lastly, a series of observational studies will be implemented to learn more about how users interact with and view the eBay site in terms of navigation, ease of use, and appeal. Observational research consists of providing five groups of eBay users each with a separate scenario involving various methods of purchasing items. Each scenario is meant to test for ability of purchase in either a specific amount of time, with a certain budget, or for a specific item. The research will then be followed up with a brief survey to provide feedback on their experience, whether the user was purchasing items via the webpage or phone application. In addition, the use of heat maps will also be used to keep track of the participants' movements on the page indicating which aspect of the website they are more attentive to.

Primary research will allow for us to solidify any previous insubstantial information in order to use for following assessments. Following the process of data collection from the primary research, we will conduct a thorough data analysis. Lastly, we will then be able to propose a marketing strategy and plan for the time period of July 2017-June 2018.

RESEARCH POSTER PRESENTATIONS

CENTER FOR THE ARTS
ATRIUM
2:15PM - 4:15PM

Poster Location by Department

Accounting and Finance ....Bottom Center

Biology.…………………………………………………East Lounge

Chemistry.……………….....................…....……… Bottom Back

Computer Science.……………..........................………West Lounge

Curriculum and Instruction.…………………….   Upstairs Walkway

Economics.………………………………………….   Bottom Center

Engineering Science and Physics.…………………   West Lounge

English ....Upstairs Walkway

English/Linguistics.……………………………   Upstairs Walkway

GIS Services.………………………………………Bottom Center

History ....Upstairs Walkway

Management   ....Bottom Center

Marketing.……………………………………………Bottom Center

Mathematics.……………………………………….Bottom Center

Media Culture.…………………………………   Upstairs Walkway

Nursing ……………………………………… Upstairs Walkway

Performing and Creative Arts.……………………Upstairs Walkway

Philosophy.…………………………………………… Bottom Center

Physical Therapy.………………………………   Upstairs Walkway

Political Science and Global Affairs. ……………… Bottom Center

Psychology.…………………………………….....…Bottom Front

World Languages and Literatures.…………………. Bottom Center

ACCOUNTING AND FINANCE

CONFERENCE LOCATION:
BOTTOM CENTER

POSTER #37

Repeal of the Affordable Care Act (ACA) and its Tax Implications

Ayomiku Ojetola

Faculty Mentor: Professor Patricia Galletta
Department of Accounting and Finance

The Affordable Care Act (ACA) commonly referred to as "Obamacare" is a United States federal statute signed into law by former President BarackObama on March 23rd, 2010, to provide affordable health insurance to the American people and expand Medicaid for low income earners. ACA is primarily funded through Federal and State taxes where a large sector of the economy and high-income earners pay higher taxes. ACA provides many benefits and protection to people because it expands access to affordable health insurance via tax credits.

There are many key tax related provisions that ACA provides such as Individual mandate tax, Employer Mandate tax, Small Business Tax Credit and lastly the Advanced Premium Tax Credits. Considering all the tax provisions in ACA, it can be assumed to provide the highest middle-class tax cut in American healthcare history. The United States congress however just announced that ACA will be repealed and replaced, and President Donald Trump promised to sign the bill. If the repeal is signed into law, there would be a cut of all tax credits and health insurance premiums would probably be high. I believe the tax cut would have an adverse effect on the majority of the community, while only a small sector of the economy would benefit from it. My research will show that repealing the ACA will result in the decrease of cost(including taxes) paid by mid and high income taxpayers with a corresponding increase in costs by lower income taxpayers. Additionally, I will suggest ways we can keep ACA and still bring tax relief to mid income taxpayers while maintaining the level of health care currently enjoyed by the lower income taxpayers.

POSTER #142

How would President Trump's Proposals for the Repeal and Replacement of Obamacare to Reforming the Tax Code, affect Small Business?

Xuan Zhan

Faculty Mentor: Professor Patricia Galletta
Department of Accounting and Finance

The purpose of this paper is to understand the multiple challenges faced by small businesses in America and how a new president in office may affect them. Since 1986, the cost of health care and taxes repeatedly, have been the top problems and priorities faced by small businesses surveyed by the National Federation of Independent Business. Under President Trump's proposed policies, business owners can see their income taxes reduced to 15% (same as with the corporations) and the repeal and replacement of Obamacare. This would not only decrease the tax liability, but it would also help free up time and energy business owners spend yearly, trying to navigate the complex tax code and regulations. Currently, many businesses resort to hiring external payroll companies to manage their payroll if they employ more than five employees and/or pay an accountant to help manage their federal tax payments. This is a burdensome task and adds cost to the small business owner. Small businesses employ approximate 56.8 million workers, and it is important that we support policies that would promote small business growth and job creation. President Trump's policies may appear to give hope to small business to gain a favorable change, but my research will demonstrate that the repeal and replacement of Obamacare with the lowering of tax will not result in significant growth for small businesses.

BIOLOGY

CONFERENCE LOCATION:
EAST LOUNGE

POSTER #113

The Cytotoxic Effects of Resveratrol and Pterostilbene on HeLa Cervical Cancer Cells

Mohamed Al Sharif (The Verrazano School), Dina AlSharif (The Verrazano School)

Faculty Mentor: Professor Jimmie Fata
Department of Biology

Cervical cancer is one of the most common cancers affecting women worldwide. It is the fourth most common cancer in the world and a great risk in developing countries. Infection with Human papilloma virus (HPV) causes cervical cancer. Prolonged exposure to infection with HPV leads to the progression of cervical lesions into a cancerous state. Polyphenols which are a group of antioxidants have profound health promoting effects and have gained much importance as anti-cancerous agents. Resveratrol and Pterostilbene are polyphenols with anti-cancer properties. Previous studies by the lab have shown the cytotoxic effects of Resveratrol and Pterostilbene on HeLa cells (HPV infected cancer cells). From these results we want to understand the cellular targets on which Resveratrol and Pterostilbene act. E6 is an HPV expressed viral protein that disrupts the function of p53, a tumor suppressor protein. My study will focus on finding whether the E6 protein is being downregulated by Resveratrol and Pterostilbene. Immunostaining of the cells with E6 antibody will verify the E6 inhibitory effects of these drugs on HeLa cells.

POSTER #195

Characteristics of the Purkinje Cell Connectivity in the Fragile X Mouse

Fatima Aman

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

Ataxia is a musculoskeletal dysfunctional feature of the fragile X syndrome that has been observed in older male patients carrying a mutation. This is characterized by uncontrollable body movements. GABAA receptor is a major component of the inhibitory (GABAergic) system. A reduction of GABAA receptor expression was observed in our preliminary investigation on the basis of the locomotor activity and pattern of the fragile x mouse. GABAA receptor's reduced expression may have contributed to the increased seizure susceptibility observed in the mouse model. Potentially related alteration of the GABAergic system was also observed with an increased depression of glutamic acid decarboxylase (GAD), the enzyme responsible for GABA synthesis. In another model for hyper excitability (mice fed taurine chronically) showed similar changes, including reduction in GABAA receptor expression, increased GAD expression and a lower threshold for seizure induction.

We proposed an increase in GAD expression and lower threshold for seizure induction. The aims of the current research was to examine divergent events downstream of the biochemical changes in the GABAergic system in two mouse models, and to identify neuronal markers that are differentially expressed in fragile X and taurine-fed mice that might explain the phenotypic discrepancies between these two mouse models. This neuronal marker should show an involvement as well as a correlation with most, if not all, fragile X-specific features.

Preliminary data shows that fragile X mouse showed signs of ataxia that is age dependent. Furthermore, the organization of the dendritic tree of Purkinje cells is significantly altered in the KO mouse. A proposition was made to further characterize these alterations by examining the connectivityof the dendrite of Purkinje cells with the granule cells and climbing fibers.

POSTER #223

Prenatal Environmental Exposures, Epigenetics, and Disease

Samarie Bennett, Sabina Shukurova

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

The etiology of autism is thought to involve the complex interplay among genetic and environmental factors. Patterns of inheritance of autism suggest an epigenetic component to the development of autism. A variety of environmental agents (toxins, dietary factors and drugs) are known to induce epigenetic changes in DNA, including those in autism-associated genes. These factors include the plastics by-product DibutylPthalate(DBP) and Bisphenol A (BPA).DBP is a developmental and reproductive toxin that causes a broad range of birth defects resulting in neurological impairments.Our preliminary data suggest that low doses gestational exposure to DBP causes gender-specific neurobehavioral abnormalities in the offspring which may be mediated by altered maturation of neuronal circuits associated with these behaviors.Adult mice (2 months old) injected with DBP (1ug/kg s.c) showed significant neurobehavioral alterations characterized by increased locomotor activity and anxiety as measure in the open field and elevated maze respectively. These effects were observed 15 min post DBP injection, indicating a fast acting mechanism. To determine the effects of DBP on early brain development, we injected pregnant mice with DBP (1ug/kg s.c) on gestational day 10 and assessed the neurobehavioral effects of this compound in the offspring when they reach 2 months of age. Interestingly, the neurobehavioral phenotype elicited by a single injection of adult mice could be reproduced in the offspring of DBP-injected pregnant mice. Additionally, these mice showed heightened fear-potentiated freezing response, reduced socialization and a significant decrease in learning as measured bythe acquisition and retention of a passive avoidance task. These effects were gender-specific and male offspring were significantly more affected than females. This is consistent with previously reported selective adverse effects of DBP on male reproductive system development.

POSTER #175

Gestational Toxicant Exposure Effects on Anxiety and Behavior in Aging Mice using Open Field Test and Marble Burying Test

Mary Cawog (The Verrazano School)

Faculty Mentor: Professor Sara Guariglia
Department of Biology

This research will test to see if exposure of mice to polycylic aromatic hydrocarbons (PAHs), and lead (Pb2+) will induce an effect on the aging process of the mice. PAHs are a class of organic compounds formed from improper combustion and high-pressure activity. Animal studies have proved that PAHs lead to harmful damages to the skin, body fluids, and a weakened immunity. Lead, a non-biodegradable metal, is one of the most universal toxins found within our environment. I will conduct this research by examining eight groups which include: control males and females, PAH exposed males and females, lead exposed males and females, and PAH as well as lead exposed males and females. There will be a total of 76 mice on which I will perform behavioral assays. In order to quantify the behaviors, I will be using an Anymaze video tracking software and Prism for statistical analysis. The open field test is one of the most commonly used tests to examine anxiety related behaviors. This will test the overall preference for protection as well as the organisms' motivation to be willing to explore new environments. The open field test (OFT) is a widely used measure of behavior and activity in mice, where it is possible to measure quality and quantity of the activity. The open field (OF) is a closed square, rectangle, or circle with walls which surround the field preventing escape. The purpose of this test is to examine movement via the

total distance traveled, speed, fecal boli, time spent in the center of the arena, and time spent near the periphery of the arena. Various behaviors beyond simple locomotion are observed in this test. The marble burying test is an animal model conducted in order to observe mouse behavior as well as their anxiety levels. This type of activity concentrates on whether or not a mouse will bury harmful or harmless objects within their bedding. Typically, mice with anxiety levels tend to bury the marbles at a high rate wanting to escape. I will be looking at mice without any exposure, as well as mice that have been exposed to PAHs and lead.

POSTER #19

Investigating the Effects of Placed-Based Experiential Stem Education

Nancy Che (The Verrazano School)

Faculty Mentor: Professor Rebecca Chamberlain
Department of Biology

Place-based experiential education in biology or life science, can involve any educational exposure to living organisms occurring as an addition to the typical academic curriculum and/or outside of the standard school classroom.

This type of education provides students with the opportunity to learn with authentic activities in a classroom, laboratory, or community institution such as a zoo. Placed-based experiential education facilities, like zoos, aquariums and museums, today are visited by approximately 700 million people annually. Researchers hypothesize that placed-based experiential education correlates with a positive emotional experience that gives visitors an increased motivation to learn about animals and conservation. More than half of Americans today live in urban regions, leading to generations of children growing up without experiencing much nature in their life. As a result, many of these individuals have negative perceptions about animals and ecological impact.

This research project sought to quantify the relationships between place-based experiential education and the effect on zoo visitor and college student attitudes toward animals, conservation, and science education. Data was collected by administering surveys to zoo visitors, to visiting classes and their teachers at the zoo, and to college students. Analysis of survey responses indicates that experience at a place-based educational facility, such as a zoo, is positively correlated with an increase in interest in personal action for conservation and an increase in student engagement and knowledge in science education.

POSTER #34

Climate Change Drives Changes in Common Tern Abundance

Alexandra Davis (The Verrazano School)

Faculty Mentor: Professor Lisa Manne
Department of Biology

Carbon dioxide levels in Earth's atmosphere are higher than they have ever been, reaching a staggering 405.92 parts per million in recent years. Higher atmospheric carbon dioxide accumulations result in higher temperatures on Earth. Since 1880, the global average temperature has increased by 1.7 degrees Fahrenheit. On a smaller spatial scale, in micro habitats, such a change is detrimental to many species of animals, plants, and microorganisms who depend on a consistent environment to survive. Here, we seek to determine how much climate change has affected two species of seabirds on Bird Island. We focused on Common and Roseate terns using forty-seven-years of data on clutch size, number of breeding pairs, hatch success, and productivity collected in the state of Massachusetts.

The data were analyzed alongside the North Atlantic Oscillation data from June and the previous fall to test for association between how productive the birds were and the climate index. The results of data analysis proved that at least directly, climate change is not a significant factor on the reproductive lives of Common terns. With Roseate terns, climate does show an association with clutch size, hatch success, and productivity. Even if climate does not directly affect the bird populations, indirect impacts are possible via climate effects on food resources.

POSTER #203

Development of a New Tissue Clearing Protocol to Evaluate Blood-brain Barrier Integrity after Traumatic Brain Injury (TBI) in the Rat Brain

Xena Flowers

Faculty Mentor: Professor Jeffrey Goodman
Department of Biology

The newly-developed technique of tissue clearing using the CLARITY method has revolutionized our ability to observe and analyze structures deep within the intact mouse brain by rendering the tissue transparent. Using the CLARITY method, fluorescently labeled markers can be visualized deep within the tissue in three dimension. However, while effective in mouse tissue, the CLARITY method is slow, can cause the tissue to shrink or swell and is less effective in the larger rat brain. The purpose of this study is to build upon the success obtained with CLARITY in mouse brain by developing a new clearing protocol called Visikol for use in the larger rat brain. Visikol is a non-destructive reversible clearing agent which can make biological tissue transparent without altering the underlying cellular structure. Our goal is to use this technique to quantify blood-brain barrier disruption after experimentally-induced traumatic brain injury (TBI) in the rat. Sprague-Dawley rats will be anesthetized and a jugular catheter will be surgically implanted and externalized. The anesthetized rat will be placed in a stereotaxic frame and a craniotomy will be performed. The controlled cortical impact (CCI) model will be use to induce a TBI over the sensorimotor cortex. Fluorescent nanoparticles (NP) of different sizes will be infused through the jugular catheter into the blood at different time points after injury. Upon completion of the experiment the brain will be removed, cleared using Visikol and the location of extravagated NP will be visualized to determine the location, magnitude and duration of blood-brain barrier disruption after TBI.

POSTER #151

Tau Induced Neurodegeneration Progression

Rachel Furhang (Macaulay Honors College)

Faculty Mentor: Professor Alejandra Alonso
Department of Biology

Alzheimer's disease is the most common type of dementia, with symptoms starting as short term memory loss and gradually progressing to problems such as personality changes, and loss of bodily function. One of the characterizing traits of Alzheimer's is neurofibrillary tangles, made of hyperphosphorylated tau protein aggregating in cells. Normal tau stabilizes microtubules, is abundant in neurons, and is soluble. When tau is hyperphosphorylated it becomes insoluble, leading to the formation of the neurofibrillary tangles.

The full mechanism of Alzheimer's is still not clear, and further insight into how the progression of Alzheimer's occurs will be very useful for finding ways to treat this disease, as currently there are few

options for halting the disease's progress. One aspect of the disease that remains unclear is whether the tau aggregates are a cause or a symptom of Alzheimer's disease. Earlier research has shown that mice with a gene for mutated tau show cognitive impairment and early symptoms of Alzheimer's disease. Investigating where the tau protein is in the brains of mice once it causes these impairments will allow for a clearer idea of whether tau itself can cause Alzheimer's disease.

Healthy mice were injected with a lentivirus containing the pseudophosphorylated tau gene, and a fluorescent protein into their hippocampus. These mice underwent behavioral tests before and after the injections to determine if the mice had memory loss. Additionally, their brains were tested for presence of tau aggregates and neuronal death in the hippocampus and in the rest of the brain by visualizing the fluorescent protein attached to the tau. The results of these experiments will be another piece of evidence in establishing the mechanism of Alzheimer's disease.

P O S T E R   # 7

Heterochrony in Archanodon and Pyganodon as an Evolutionary Mechanism Possibly Producing Ancestral and Descendant Unionoid Genera

Elina Grunkina (Macaulay Honors College)

Faculty Mentor: Professor Rebecca Chamberlain
Department of Biology

Unionoid bivalves are significant in the ecology of freshwater environments and form a major part of many marine communities but their populations are declining. A possible relation, such as heterochrony between modern-day Pyganodon and ancient fossil Archanodon provides insight to how these organisms evolved. Many questions about Archanodon and its taxonomic status need to be answered. Comparing Archanodon to a modern analog, the freshwater unionoid genus Pyganodon, can provide insights into the phylogenetic tree, with Archanodon at the root and Pyganodon representing a living branch. Heterochrony is the concept that involves the changes in appearance and rate of development of characters already present in ancestors and is a major mechanism of evolutionary change. Heterochrony operates in terms of acceleration or retardation of growth of somatic features. Paedomorphosis is the retention of ancestral juvenile characters by later ontogenetic stages of descendants and a descendant adult that has a more juvenile form of the ancestral species. Peramorphosis is overdevelopment caused by acceleration of a somatic feature and a descendant juvenile that resembles the adult ancestor. Heterochrony is the conservation of a shared trajectory between ancestor and descendant. Allometry refers to the disproportionate growth of parts of an organism as the organism changes in size. A heterochronic process may therefore induce a change in time of development. If Pyganodon derived from Archanodon by heterochrony, these findings could link the two genera as descendant and ancestor. The linkage of bivalve genera is often based on valve ornament, hinge complexity and muscle scar size.

Predictors of Geographic Range Size for W. North American Bird Species

Nicole Guzman

Faculty Mentor: Professor Lisa Manne
Department of Biology

Range size is the spread of species in a geographical area, it is important to study because these are the areas in which species breed, migrate and feed in. If the range size is affected in any way this also affects the species. This shows that range sizes have an affect on how species live and there are relationships that species share with the areas that they live in. We need to study range size to better understand the relationships to have healthier environments in which our species can thrive in. Commonly, larger-bodied animals need larger ranges in which to persist. Species that are able to utilize a larger variety of resources (such as food resources, or habitat) have lowered extinction risk, and might also have larger range sizes. Species that are more vagile might be more vulnerable to extinction (due to the need to move seasonally between resource-rich environments), or might have lowered extinction risk, due to this ability to move between habitats. Dr Manne and I studied the life cycle, habitat, migratory guild and body size of American birds. We test the relationship between these traits and the birds' range sizes, while accounting for inter-relatedness between predictors (e.g. habitat and migratory guild). To do this, we will conduct path analysis, which finds a path diagram to relate the traits of these birds to range sizes. Another analysis of this type, for European birds, found that rapid reproduction rates, movement from birth site to breeding sites and habitats have a positive effect on range size. While as diet had an negative effect. We compare our results for Western North American birds to the results for the European birds.

Neuronal Basis for Hyper-excitability Associated with Fragile x Syndrome

Shaima Ikhmayes, Svetlana Rozigov

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

Ataxi is a feature of the fragile X syndrome that has been observed in old patient carrying the fragile x mutation. Our preliminary investigation of the basis for the locomotor activity and pattern of the fragile X mouse indicated a reduction in GABAA receptor expression. This receptor is a major component of the inhibitory (GABAergic) system and its reduced expression probably contributes to the increased seizure susceptibility observed in this mouse model for fragile X. We also found a potentially related alteration of the GABAergic system--increased expression of glutamic acid decarboxylase (GAD), the enzyme responsible for GABA synthesis. We found similar changes in another model for hyper-excitability (mice fed taurine chronically), including a reduction in GABAA receptor expression, an increase GAD expression and a lower threshold for seizure induction. We propose that the increase in GAD expression and activity are compensatory events to increased excitability but not FMRP dependent. The aim of the proposed research is to examine divergent events downstream of the biochemical changes in the GABAergic system in these two mouse models, and to identify neuronal markers that are differentially expressed in fragile x and taurine-fed mice that might explain the phenotypic discrepancies between these two mouse models. Furthermore, this neuronal marker should show an involvement as well as a correlation with most, if not all, fragile x-specific features.

Our preliminary data shows that fragile x mouse brain has altered expression of key protein important for synaptic transmission, including GABA receptors, GAD, Somatostatin and the sodium potassium ATPase.

POSTER #35

The Effects of Gestational Toxicant Exposure on Anxiety in Aging Mice

Dhana Kindelpitiya (The Verrazano School), Yohanna Quezada

Faculty Mentor: Professor Sara Guariglia
Department of Biology

The main purpose of the proposed research project is to determine if gestational exposure to polycyclic aromatic hydrocarbons (PAHs), lead (Pb2+) and a combination of these toxicants has an impact on the process of aging. To explore our hypothesis, we will examine anxiety related behaviors in mice that have exposed to these toxicants during gestational development. There are several experimental techniques that we will use to examine level of anxiety in these mice.   These experimental approaches include the use of several behavioral assays which include elevated plus maze, light and dark exploration, and open field exploration. Using these methodologies, we will be able to determine if gestational exposure to these toxicants cause long lasting effects on anxiety related behaviors. Furthermore, we will be able to compare each of these behavioral evaluations as measures for anxiety to observe if one advances in detecting low levels of anxiety over any of the other assays.

POSTER #221

Comparison of Pathological Human Tau and Normal Human Tau in CHO cells

Sandra Kurylonek (The Verrazano School)

Faculty Mentor: Professor Alejandra Alonso
Department of Biology

Tau protein is major microtubule associated protein (MAP) that is a key molecule in the neurodegeneration process of Alzheimer's disease. Tau stabilizes microtubules, regulates axonal transport. All these functions of tau are modulated site-specific phosphorylation. Recent studies have shown that abnormal hyperphosporylation of tau at Ser199,Thr212, Thr231,Ser262 induces structural changes in tau similar to that found in Alzheimer's disease.

Hyperphosporylation disrupts the structure of microtubules and induces the formation of aggregates known as neurofibrillary tangles. To investigate tau's function we will compare cells that express: pseudo-hyperphosporylated pathological human tau (PH tau) and normal human tau (wt.) Chinese Hamster Ovarian (CHO) cells will be transfected with DNA containing GFP-Tau gene or GFP-PH tau gene.

We found that hyperphosphorylated tau dissociated from microtubules, disrupted the preformed pseudo-microtubules and appeared diffused in the cytoplasm of the CHO cells. Normal human tau co-localized with microtubules. We will investigate how they distribute when transfected together and the composition of microtubules using antibodies against specific forms of tubulin (acetylated,tyrosinated & detyrosinated.)

POSTER #135

Characterization of LC3 Positive Structures and Protocadherin Endosome Trafficking

Mohamed Mahmoud (The Verrazano School)

Faculty Mentor: Professor Greg Phillips
Department of Biology

Protocadherins are the largest subgroup and the cadherin family. Clustered protocadherins are ~60 of these molecules arranged in a gene cluster (Pcdhs). Pcdhs are an enigmatic family of cell adhesion molecules in that they mediate self avoidance of same cell dendrites in the nervous system. How can adhesion-like molecules cause the opposite of adhesion? The Phillips lab has found that Pcdhs are prominently trafficked In the endolysosome system and this trafficking is controlled by the cytoplasmic domains of Pcdhs. Trafficking is correlated with a strong colocalization with the autophagy protein LC3. Such trafficking may be part of the mechanism behind self avoidance. For this project, mutations in a putative LC3 interaction motif located within the cytoplasmic domain of one Pcdh have been generated. The trafficking of these new mutants will be studied by transfection followed by colocalization with LC3. Transfected cells will be imaged by confocal microscopy and extent of colocalization quantified by image analysis. Statistical tests will confirm colocalization. Further point mutations will be generated and tested in the localization assay based on the outcome of the initial experiments.

POSTER #101

Mutagenesis and Analysis of Intracellular Trafficking Motifs in Clustered Protocadherins

Aliya Mambetalieva (The Verrazano School), Albert Ptashnik, Sana Hassan

Faculty Mentor: Professor Greg Phillips
Department of Biology

Clustered protocadherins (Pcdhs) are neural cell adhesion molecules that are thought to promote proper synaptic connections. Disruption in this process can lead to neurodevelopmental disorders. The Pcdhs have an ambiguous effect on cell-cell interaction. It has been challenging to ascertain exactly how Pcdhs affect interacting cells. In some instances, Pcdhs appear to promote the association of membranes, while in other cases the Pcdhs are anti-adhesive and cause avoidance of interacting membranes. It has been found that endogenous and expressed Pcdhs are generally less efficient at targeting to cell junctions and synapses than are classical cadherins. Instead, Pcdhs are prominently sequestered in the endolysosome system or other intracellular compartments. Sequences within the cytoplasmic domains of clustered protocadherins have been identified that mediate intracellular retention. It is possible that intracellular trafficking can explain the unusual mode of Pcdh adhesion. It is hypothesized that these sequences are modulated by serine phosphorylation.

In this project, putative trafficking signals, including potential serine phosphorylation sites, will be deleted or mutated and the resultant molecule characterized by transfection into mammalian cells and colocalization with organelle markers. Serines will be mutated to glutamate to mimic the phosphorylated state and to alanine to make them unphosphorylatable. All constructs will be verified by sequencing and transfected into cells for analysis of trafficking. Transfection will be done in cultured cell lines and organelles labeled with specific antibodies. Cells will be visualized by confocal microscopy and extent of colocalization with organelle markers quantified by image analysis.

POSTER #168

Epidermolysis Bullosa –Genetic Skin Disease Pathophysiology and Treatment. How can Gene Therapy be used to reduce the Blistering and Skin Breakdown in Patients with Recessive Dystrophic Epidermolysis Bullosa?

Laryna Matskiv

Faculty Mentor: Professor Grozdena Yilmaz
Department of Biology

Epidermolysis bullosa (EB) is a group of genetic diseases caused by mutations in genes, coding for some skin proteins. These proteins are important for the structural integrity of the skin. Clinically, patients with EB present with different degrees of skin and mucous membrane breakdowns. There are four types of EB: EB Simplex, Junctional EB, Dystrophic EB and Kindler Syndrome. The Dystrophic EB is caused by a mutation of a gene COL7A1 that codes for type VII collagen. Collagen VII joins the epidermal basement membrane to the dermal layer of the skin. As a result the skin of these patients is fragile and breaks down easy causing multiple blisters. Currently, there is no definitive treatment for the disease. However, recent study done at Stanford University, demonstrated promising results. The scientists did autologous skin grafting for patients with EB. The keratinocytes of the autologous graft were transduced with corrected gene- COL7A1. A retroviral vector was used to express COL7A1 in keratinocytes of the graft. As a result, the defective gene was replaced in the grafted skin. The study had some limitations such as the small sample size. In addition, even though the study showed short term improvement, the gene therapy began to decline after a year. Nonetheless, the study significantly decreased the morbidity of patients with Dystrophic EB by promoting healing of the blistering skin.*

POSTER #202
Patient Satisfaction Questionnaire - Quality Improvement Project

Sabrina Mines

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Department of Biology

This is a quality improvement project conducted at Staten Island University Hospital North site. The project focus is on assessment for patient–doctor communication in an effort to identify areas in need of improvement, and to develop a communication skills building program for residents and hospitalists. To be able to provide patients with exceptional care and hospital stay experience, the staff is administering a bed side 14-item questionnaire to patients and or their caregiver. The interview consists of questions that pertain to how efficiently the needs of the patient are being met, how clearly the doctors are communicating about care, how respectful the interactions are, as well as assessing patient's other concerns.

Approximately 40 in-patients per day are approached to participate in this questionnaire, with about half agreeing to provide feedback. Some of the reasons for not completing questionnaires includes patients not being available due to receiving medical care, sleeping, eating, language barrier, not being interested in providing feedback. The feedback from our patients will be used as a stepping stone for the SIUH research committee to prioritize patient centered care. As research continues there will be development for doctors to improve their communication and interpersonal skills.

P O S T E R   # 1 9 4

The Marine Invertebrate Life of Great Kills

Vincent Nicoletta (Macaulay Honors College)

Faculty Mentor: Professor William Wallace
Department of Biology

The purpose of this independent study project was to create a catalog and identification key for marine invertebrates found in the Great Kills Park region of Staten Island, to be used by future students and the College. Another purpose of this project was to investigate the distributions of marine invertebrate phyla in various areas of the region. This project was supervised and instructed by Professor William Wallace of the Biology Department here at the College of Staten Island.

The project began in the spring of 2015, during which samples were collected from several areas around Great Kills Park. These locations were: Great Kills Harbor, the beach, and a creek. At each location, samples were taken from different water levels; the water's surface, pelagic areas, and sediment. Once collected, specimens were then isolated from the collected samples. Using a camera and dissection microscope, photos were taken for later use. The photographs and specimens were later analyzed, and the specimens were identified. The identification process began with classifying the samples into the most inclusive level, phyla, to the least inclusive, genus and species. Using the gathered information, sources, and photographs, an identification key was made, which was added to Professor Wallace's website.

P O S T E R   # 2 0 1

Taurine Regulation of Short Term Synaptic Plasticity in Fragile X Mice

Margot Otavalo

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

Fragile X syndrome is the most common known genetic cause of autism. Fmr1-KO mouse, lacks the Fragile X Mental Retardation Protein (FMRP), and is used as a model of the syndrome. The core behavioral deficits of autism may be conceptualized either as excessive adherence to patterns as seen in repetitive actions and aberrant language, or as insensitivity to subtle but socially important changes in patterns. The hippocampus receives information from the entorhinal cortex and plays a crucial role in the processing of patterned information. The function of the hippocampus is pattern completion from entering separated information, forming episodic memories. In this study, we used paired-pulse stimulation of the afferent perforant path and recorded from the CA3 region of the hippocampus. This stimulation paradigm allowed us to examine the processing capabilities of the dendate gyrus as a function of increasing interstimulus interval (ISI) and how taurine, a GABAA receptor agonist affects such information processing. We found that WT slices showed pair-pulse facilitation at ISI of 50-300 ms whereas the Fmr1-KO slices showed a consistent pair-pulse depression at a comparable ISI. Addition of 10 µM taurine to the WT slices resulted in a drastic decrease of the peak response to the second stimulus, resulting in an initial depression at 50 ms ISI followed by potentiation at higher ISI (100 ms and above). In the presence of taurine, the amplitude of the second response remained significantly lower than in absence. Fmr1-KO mice however, were completely insensitive to taurine application and pair-pulse stimulation always resulted in a depression of the response. Previously we reported that mice have reduced GABAA receptors as determined by both immunohistochemistry and western blotting using an antibody that recognizes the beta subunits of the receptor. We also showed that taurine binds to these subunits. Therefore, the insensitivity of Fmr1-KO slices to taurine application could be due to the reduced binding site expressed by the GABAA receptors in these mice.

POSTER #200

Developmental Reprogramming In Sea Urchins

Victor Ramirez (The Verrazano School), Nyah Smith, Sarun Shrestha

Faculty Mentor: Professor Cesar Arenas-Mena
Department of Biology

Our main goal of this experiment is to observe developmental reprogramming in sea urchin embryos using the Tet-On 3G inducible Gene Expression System. The Tet-On 3G transactivator binds to TRE promoters in the presence of Dox and activates their expression. When Dox binds to the Tet-On 3G, the transactivator undergoes a conformational change that allows it to bind to the transcription factor binding site PTRE3G and enhance transcription. This can simultaneously activate fluorescent reporter mCherry and transcription factor Pmar1 which induces skeletogenic mesenchyme specification during embryogenesis. When using a fluorescent protein reporter such as mCherry, if the embryo expresses red fluorescence after adding Dox then our gene of interest is functioning and we have a high performing inducible clone. In order to optimize the system, we will express the transcription factor TET3G by using the hatching enzyme transcriptional driver, which is expressed throughout the early sea urchin embryo. We have found in previous trials that when there are more copies of our construct there was more expression. However, we found that embryos with more copies were more deformed than those with less copies. We theorize that the possible cause of the deformation is the high concentration of DOX [1 µg/ml] which may be toxic to developing embryos because it may activate other genes. We will lower the concentration of DOX to 0.1 ng/ml and .001 ng/ml in attempt to avoidtoxicity and obtain normally developed embryos.

POSTER #31

Anti-proliferative Effects of a Novel Benzophenone Isolated from Garcinia Fruits against Triple Negative Breast Cancer

Sarah Lina Saa

Faculty Mentor: Professor Jimmie Fata
Department of Biology

Several compounds belonging to classes xanthones, biflavonoids and some benzophenones from edible fruits of Garcinia sp such as Mangosteen (Garcinia mangostana) have been well studied. Herein, we investigate the bioactivity of a novel benzophenone (Paucinone H) isolated from Garcinia paucinervis. Our preliminary studies with the novel benzophenone on triple negative cell line MDA-MB-231, showed significant cytotoxicity, growth arrest and antimigratory effects. In accordance with our research group's aim to further elucidate the molecular targets that are modulated in response to treatment with Paucinone H, this semester I plan to expand my studies, to include another triple negative cell line MDA-MB-468. The results of my studies will help improve our overall understanding of the multiple signaling pathways that are modulated in a unique panel of triple negative cell lines in response to treatment with Paucinone H. The above-mentioned experiments will be carried out under the supervision of Ms. Harini Anandhi Senthilkumar (PhD candidate, CUNY Biology program). My additional responsibilities include submitting weekly reports on my experiments and following good laboratory practices to ensure a safe and productive lab environment for me and colleagues.

POSTER #72

Gestation Exposure to DBP in the Etiology of Autism

Saleh Smadi (The Verrazano School), Cynthia Actie

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

The etiology of autism is thought to involve the complex interplay among genetic and environmental factors. Patterns of inheritance suggest an epigenetic component to the development of autism. There is a variety of environmental risk factors known to cause changes in DNA, including (AAG) codon or gene that are involved in autism. There is a generative toxin that is thought to induce a wide-range of birth defects that result in neurological impairments. One of these toxins is Dibutyl phthalate (DBP; CAS 84-74-2). Data has established that DBP affects DNA which leads to (a) change(s) in certain codons pertaining to the development of the offspring that eventually result in autism. These neurobehavioral alterations elicited by DBP are consistent with altered inhibitory gamma-Aminobutyric acid's (GABA) function in the brain. However, there are few to no studies or reports on the effects of low doses of DBP on the endocrine disruptor. Further research in this area is pivotal, as humans can be affected if they are exposed to high levels of DBP. Our main goal in this research project is to develop a greater understanding of the neurotoxic effects of DBP, by observing the consequences of low levels of DBP in mice

POSTER #1

Exploring GBM-Targeting Drug Synergism Using 3D Cell Culture Model System

Norhan Sobhi (The Verrazano School), Brianna Sampson, Monnique Johnson (Macaulay Honors College), Abisola Shittu

Faculty Mentor: Professor Nancy Liu Sullivan
Department of Biology

Glioblastoma Multiforme (GBM) is the most aggressive form of brain malignancy with a 14.4-month average survival rate and no known cure. Surrounding the tumor proper are stromal cells including microglial cells and fibroblasts, which cease to perform their normal functions but instead are "corrupted" by GBM to promote tumor growth and metastasis. The key molecule that mediates cross signaling between GBM cells and stromal cells is a cytokine called Transforming Growth Factor Beta (TGF-β) that's responsible for cell growth. LY 2157299, a TGFβ-inhibitor currently in phase II clinical trial, but with less than 50% reduction of cell viability, suggests the presence of additional signaling pathways at play. We work toward identifying potential drug combinations that would modulate cytokine signaling, enabling stunted proliferation in tumor formation and destruction. Therefore, All Trans Retinoic Acid (ATRA), a drug used to treat leukemia, and Taxol, a chemotherapeutic drug – both effect cytokines – were chosen. Using a 3D cell culture system – for an in-vitro effect – we tested tumor formation: in which the cells were seeded in the presence of drugs. For tumor formation, Taxol in combination with LY enhanced GBM sensitivity to TGFB inhibition in comparison to ATRA, which failed to sensitize GBM. We will assess tumor disruption and determine the effect drug combination on a panel of key cytokines. Findings of this study will aid in finding a treatment for GBM because of its high mortality rate.

POSTER #32

The Effect of Pterostilbene on the Proliferation of HeLa and SiHa Cells

Palwasha Syar (Macaulay Honors College)

Faculty Mentor: Professor Jimmie Fata
Department of Biology

According to previous scientific experiments, Resveratrol and Pterostilbene have an inhibitory effect on cancer cells. In 2010, a study was carried out at the University of Vermont that suggested that Pterostilbene, a strong antioxidant found in blueberries, could significantly decrease cell viability in lung cancer cells (Schneider, Alosi, McDonald, Mcfadden, 2010). Although the study did not determine the potential role of Pterostilbene in cancer treatment, it concluded that Pterostilbene could inhibit lung cancer cell growth in vitro by a pre-apoptotic mechanism. This pre-apoptotic mechanism could be potentially initiated in other cancer cell lines. The aim of this study is to observe the effects of Pterostilbene on two cervical cancer cell lines, Hela and Siha cells. The cancer cells will be exposed to a drug concentration of 5uM, 10uM, 15uM, 20uM and 25uM in each trial. The time frame of exposure will be kept constant at 18 hours. By varying the concentration of Pterostilbene, we will be able to determine the ideal concentration that will be most effective in slowing the proliferation of HeLa and SiHa cells. The decrease in proliferation will be determined by analyzing the cell cycle of the exposed cells through Flow Cytometry, which uses reflected laser light of various wavelengths to sort the cells into the different phases of the cell cycle. Cell division occurs when the cells successfully progress through the cell cycle phase: Gap 1, Synthesis, Gap 2 and Mitosis. By quantifying the change in the number of cells in the different phases of the cell cycle, we will be able to determine whether there has been a stall in the proliferation of the cells.

POSTER #165

Evaluating the Cytotoxic Effects of Resveratrol and Pterostilbene on TC1 Cell Line

Jonathan Vanmanen

Faculty Mentor: Professor Jimmie Fata
Department of Biology

Cervical Cancer is the 4th most common cancer worldwide. It accounts for 8% of total deaths caused by cancer. Infection with Human papilloma virus (HPV) over a prolonged period of time causes cervical cancer. Although there are approved HPV vaccines and drugs available, a problem is the affordability of these drugs in low income areas. Most of these drugs have detrimental side effects and display the need for natural compounds as alternative therapeutic agents. Oncogenic protein E6 is one of the most important factors essential for the progression to a cancerous state. Resveratrol and terostilbene are anti-cancer polyphenols with a common stilbene core. Previous studies in the lab have shown the efficacy of these drugs on E6+ve HeLa cells [HPV18] where E6 protein was downregulated along with an upregulation of tumor suppressor p53. The current study focuses on comparing the inhibitory effects of these two polyphenols, Resveratrol and Pterostilbene on a E6-transfected murine tumor cell line called TC1. The comparative cytotoxicity of these two drugs were studied via WST-1 cell viability assay. Currently, we will be focusing on the comparative regulation of E6 and other targets by these two drugs by using immunocytochemistry, and fluorescent imaging methods. The finding of the current study will further enable us to study the efficacy of these drugs on an in vivo mouse model implanted with TC1 cells.

POSTER #6

The Engineering of Truncated INO80 Protein Yeast Mutants to Identify Acetylated Lysine Residues

Fina Vitale (Macaulay Honors College), Jaclyn DiBello (Macaulay Honors College)

Faculty Mentor: Professor Chang-Hui Shen
Department of Biology

Normally, DNA is wrapped tightly around histone proteins within the nuclei of cells, this allows condensation of the large strands to fit within a small volume. The strong bond is due to polarity. DNA holds a negative charge, whereas histones hold positive. Histones also have lysine residues on their tails. Acetylation involves adding an acetyl group to the lysine rich tails of the positively charged histone, ultimately neutralizing it, and loosening the DNA wrapped around its surface. This loosening allows the DNA to be more exposed, and interact more readily with other substances such as transcription factors for the activation of genes. Past studies have proven that protein INO80 has played a role in the activation of the INO1 gene through acetylation.

Our goal for this experiment is to identify the segment of the INO80 protein responsible for acetylation. To do so, we first used mini-prep and phenol-chloroform extraction techniques to open cells and expose their DNA. Then, we conducted restriction and digestion to cut out certain segments of the INO80 protein, then re-ligation to reattach the protein pieces without those chosen segments. The product mutant INO80 proteins, were inserted into E-coli cells for growth and replication, and then inserted into yeast cells. These cells will be used for Western Blot testing, which will indicate if acetylation of the INO1 gene has occurred. If acetylation did occur, that indicates that the segment of the INO80 protein responsible for acetylation (our target) is present in the mutant protein and was not removed via restriction and digestion. If Western Blot reveals that acetylation of INO1 genes did not occur, that indicates that the segment of the INO80 protein responsible for acetylation was successfully removed during restriction and digestion.

POSTER #180

Pharmacological Characterization of GABAa Receptors in Taurine-fed Mice

Viktoriya Volkova

Faculty Mentor: Professor Abdeslem El Idrissi
Department of Biology

Taurine 2-aminoethanesulfonic acid is one of the most abundant free amino acids especially in excitable tissues, with wide physiological actions. We have previously reported that chronic supplementation of taurine in drinking water to mice increases brain excitability mainly through alterations in the inhibitory GABAergic system. In taurine-fed mice we found that expression level of glutamic acid decarboxylase (GAD), the enzyme responsible for GABA synthesis, is elevated. Increased expression of GAD was accompanied by increased levels of GABA. Additionally, we found that GABAa receptors were downregulated by both immunohistochemistry and western blotting using an antibody that recognizes the beta subunits of the receptor. Here, we investigated pharmacologically the functional significance of decreased/or change in subunit composition of the GABAa receptors by determining the threshold for picrotoxin-induced seizures. Picrotoxin is an antagonist of the GABAa receptor that blocks the channels while it is in the open state. The binding site for picrotoxin within the pore of the channel is between the beta2 and beta3 subunits. These same subunits are downregulated in the mice chronically fed taurine. We found that taurine-fed mice are resistant to picrotoxin-induced seizures when compared to age-matched controls, as measured by

increased latency to seizure, decrease occurrence of seizures and reduced mortality rate. Injection of taurine 15 min before picrotoxin significantly delayed seizure onset. We suggest that the elevated threshold for picrotoxin-induced seizures in mice is due to the reduced binding sites available for picrotoxin binding due to the reduced expression of the beta subunits of the GABAa receptor. Taurine may be binding to the same subunits that picrotoxin binds to. The delayed effects of picrotoxin after acute tuarine injection may indicate that the two molecules are competing for the same binding site on the GABAa receptor. Thus, taurine-fed mice have a functional alteration in the GABAergic system. These include: increased GAD expression, increased GABA levels, changes in subunit composition of the GABAa receptors. Such a finding is relevant in conditions where an agonist, such as anesthetics, of GABAa receptor is administered.

CHEMISTRY

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BOTTOM BACK

P O S T E R   # 1 5 5

Precursor Synthesis of Donor-acceptor Monomers

Dea Aga, Edgar Hernandez

Faculty Mentor: Professor Ralf Peetz
Department of Chemistry

In recent years, numerous countries have started large-scale investments in technologies that are aimed at using the energy contained in sun light. Photovoltaic devices, eg. solar panels, as seen on more and more roof tops, convert solar energy into electrical energy that can be used to substitute electrical energy currently derived from non-renewable fossil fuel sources. The main challenges with solar panels today are their cost and low efficiency. As a result, an important area of research is focused on providing alternative photovoltaic technologies. The research we are conducting is directed toward developing organic photovoltaic materials. Specifically, we are combining functional organic units with electronic donor and acceptor properties into macromolecules with favorable processing properties and electro-optical characteristics designed for absorbing larger parts of the visible light spectrum [1]. To combine these units, we use coupling techniques called Suzuki Coupling and Acyclic Diene Metathesis (ADMET). Using combinations of electron rich (donor) and electron deficient (acceptor) components, we carefully control the energy levels the Highest Occupied Molecular Orbital (HOMO) and Lowest Occupied Molecular Orbital (LUMO) levels respectively and therefore the electro-optical characteristics of these polymeric materials [2]. To this end, we have successfully been able to synthesize several donor precursor units and one acceptor precursor. Suzuki Coupling was performed to yield one first monomer in 41.3% yield, which in turn was successfully converted into polymer using ADMET. All materials synthesized are investigated with regard to their structural, phase, and electro-optical properties, using methods such as NMR, GPC, TGA, DSC, UV-Vis and Fluorescence Spectroscopy [3].

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P O S T E R   # 1 1 1

Testing Heat Transfer Efficiency using Superhydrophobic Coating

Magdy Akramy, Dardan Ramadani

Faculty Mentor: Professor Alan Lyons and Alfred Levine
Department of Chemistry

In today's technology one of the limiting factors of performance is heat. In areas where humidity is a problem condensation on heat sinks causes an environment where heat cannot transfer efficiently. Heat sinks in a high humidity environment cause water to condense on the fins, which creates an insulating layer of water that traps heat. This causes a drop in heat transfer rate, which in turn shortens the life of the unit or electrical system. One way to solve this problem is to coat the fins with a material that prevents the condensed water from forming a continuous liquid water film.

Water condensing on a superhydrophobic material surface do not spread out over the surface, but form individual droplets that can roll-off the surface. Thus fins coated with a superhydrophobic material would enable drop wise condensation, in turn increasing water collection rate and further increasing heat transfer efficiency. To measure the efficiency of a superhydrophobic coating, we

developed a system that allows us to measure the differences in water collection rate and heat transfer efficiency between uncoated hydrophilic aluminum and superhydrophobic coated aluminum. An enclosed insulated chamber was constructed to observe the sample as it was tested under specific temperature, relative humidity and air flow conditions. As we compared the collected water droplets over a set period of time for the uncoated and coated aluminum samples we also measured the heat transfer rate by measuring the change in temperature across the thickness of the sample. This experiment was conducted multiple times to ensure that it was reproducible under the same conditions. The experiment was conducted at aluminum set temperatures of 5°C, 10°C, and 15°C for approximately 3-5 hours.   We encountered and solved many experimental challenges by increasing the size of our chamber, using more accurate temperature sensors and creating a steady reproducible humidity system. In this poster, we will present our data showing the effect of sample set temperature and presence of a superhydrophobic coating on heat transfer and water collection efficiency of aluminum fins.

POSTER #68

Polysaccharide Incorporated Sponge Mimetic Tubules

Danielle Aylmer (The Verrazano School)

Faculty Mentor: Professor Krishnaswami Raja
Department of Chemistry

Polysaccharide incorporated Sponge Mimetic Tubules Sponge Mimetic Tubules (SMT)materials will be prepared by the addition of polysacchirides into saturated hot water glass and seeded with calcium chloride These will be used to create bionanohybrid materials. These materials will be characterized via a battery of techniques. The dinoflaggelate strain Pyrocystis lanula and test mammalian cell lines will be cultures on these constructs and the final supracellular assemblies will characterized via advanced microscopy. I work hands-on developing SMTs for cell adhesion, and growth, and characterize their surface morphology and composition. The goal is to develop SMTs with noteworthy properties. I also work on solubilizing agar/alginate (of cyanobacterial origin) or spirulina (dried Arthrospira platensis cyanobacteria) in concentrated sodium silicate-potassium phosphate solution and seeing the resulting solution with calcium chloride to produce SMTs incorporating polysaccharides. Gelatin based constructs were also prepared. Using the injection method, SMT synthesis and a technology to develop SMTs of programmable diameter and wall thickness will be developed. TEM, SEM, IR spectroscopy, EDS spectroscopy and powder X-ray diffraction will be used to synthesize scaffolds.

POSTER #204

Anti-Soiling Properties of Superhydrophobic Nano-Coatings on Solar Glass

Gil Barahman (Macaulay Honors College), Pin Desilva

Faculty Mentor: Professor Alan Lyons
Department of Chemistry

Solar energy has become increasingly practical because it is a renewable energy source that is easy to install and is cost efficient, comparable to the cost of electricity generated by fossil fuels. The potential for solar energy is greatest in sunny areas, such as the southwestern United States. However, one of the problems with this dry environment is that the soiling of solar panel cover glass can result in a significant loss of electrical output. These PV panels then need to be thoroughly washed to be

brought back to optimal performance. This can require a significant amount of water, because dust adheres strongly to the hydrophilic glass. The solution to this problem would be a solar glass coating with anti-soiling properties. A second challenge is to reduce the reflection of sunlight that occurs at the air-glass interface. Hydrophobic coatings would be expected to reduce soil adhesion, but achieving a reliable, stable coating that adheres well to glass and that can also reduce reflections is challenging. Recently, Dr. Lyons' lab at CSI developed a thin polymer coating that exhibits both hydrophobic and anti-reflective properties. In this project, we examine the effect of polymer coating properties on anti-soiling behavior and compare the results to pristine, untreated, glass. A special dusting chamber was developed to apply uniform coatings of standard Arizona Road Dust onto glass surfaces. Water was condensed on the glass surfaces before dusting to simulate the effects of dew. Several types of analysis were used to characterize dust deposition and cleaning including: UV-Vis spectroscopy, goniometric wetting analysis, scanning electron microscopy, and optical microscopy. The experimental results show that dust blocks less light on the hydrophobic glass surfaces, compared to hydrophilic and pristine glass surfaces. Furthermore, less water is required to clean hydrophobic coated glass surfaces, restoring the optical properties to near original values. The surface morphology and low surface energy of hydrophobic coatings allow the water to form individual droplets that "herd" dust into discreet regions that can be easily removed from the surface and also account for the anti-reflective properties of the coating.

POSTER #225

The Catalytic Effect of 1K-1,2,4-triazole vs. 1H-1,2,4-triazole/DBU in the Nucleophilic Substitution of Cyclohexylamine on Tert-butyl Perylene Tetraester

Christine Fisher

Faculty Mentor: Professor Shi Jin
Department of Chemistry

Organic electronics is a rapidly growing field due to the advantages organic materials have over their inorganic counterparts, such as reduced cost of manufacture, readily available materials, and flexibility. However, they currently face performance issues due to comparably low efficiency. We believe that efficiency can be increased via alteration of the angle between adjacent, stacked molecules. A key contender for usage in organic semiconductors, perylene diimide (PDI), will be used to demonstrate the properties of conductive materials that have a greater overlap in molecular columns. PDI displays a non-orthogonal stacking angle upon self-arrangement into molecular columns. A higher degree of frontier orbital overlap, which plays an important role in electrical conductivity, results in increased performance. Derivatives of this compound are synthesized and the role catalysts play in the overall reaction rate is observed.

POSTER #220

Studying Synergism among Curcumin, Gallic Acid, and Vanillin using Molecular Simulation and Cell Death Assays

Angela Fried

Faculty Mentor: Professor Probal Banerjee
Department of Chemistry

Glioblastoma multiforme (GBM) is the most aggressive form of cancer, which forms from glial tissues of the brain and spinal cord, and accounts for 12-15% of all intracranial tumors. Current treatments through chemotherapy offer a partial remission of the cancer and also kill normal cells, rendering the treatment ineffective. Our lab is working on finding an alternative treatment to GBM cancer with a complete remission using the food-derived, wide-ranging anticancer agent curcumin (CC). However, since CC has limited efficacy in vivo due to its low bioavailability, our earlier studies used resveratrol, derived from grapes and epicatechin gallate derived from green tea, to potentiate the anticancer activity of CC. Our current project will conduct a similar study for vanillin (V), gallic acid (G), and CC. We will determine (1) the likely molecular interactions of G and V with CC at various concentrations of each component using the molecular simulation software package NAMD, and (2) perform WST-1 assays and Combination Index analysis using GL261 glioblastoma cells at various concentrations of CC, G, and V to obtain a unique, synergistic, combination of the three compounds. Our central objective is to obtain a highly potent formulation of CC that has sharply increased bioavailability in vivo than CC.

POSTER #24

Nanoparticle Loaded Calcium Alginate Films and Implants for Drug Delivery

Regina Klimchuk (The Verrazano School), Mohammad Bazouk (The Verrazano School)

Faculty Mentor: Professor Krishnaswami Raja
Department of Chemistry

Biodegradable polymers are one of the most prominent materials used for drug delivery. The most common biodegradable polymers, hydrophobic polyesters, are fabricated into various structures using organic solvents. Some therapeutic agents which cannot be dissolved/suspended in organic solvents, cannot be properly loaded into these hydrophobic polyesters. For these therapeutic agents, hydrophilic polymers can instead be used as a matrix for delivery. We intend on using the calcium salt of alginic acid, calcium alginate, to prepare implants that can be administered subcutaneously, and films which can applied topically. These implants and films will be able to deliver agents that can only be suspended in aqueous solutions. Curcumin is a diphenol from the root of the turmeric plant Curcuma longa, and is a very attractive therapeutic due to its wide range of activities and low toxicity. Curcumin is a hydrophobic compound and is soluble in most organic solvents. To improve its pharmacokinetic properties curcumin can be fabricated into nanocrystals, or loaded into lipid nanoparticles. These curcumin loaded nanoparticles are easily suspendable in aqueous solutions but dissolve in organic solvents, meaning they can only be loaded into hydrophilic polymeric materials. We intend on loading curcumin nanocrystals and liposomes into calcium alginate films and implants. Since curcumin has a vast array of therapeutic activities, the fabrication of films and implants allows for curcumin to be administered for a variety of diseases.

Loading Therapeutic Proteins into Polyester Nanofibers via Protein Nanoparticles

Nicole Pillarella (Macaulay Honors College)

Faculty Mentor: Professor Krishnaswami Raja
Department of Chemistry

Biodegradable polymer nanofibers such as poly(lactic-co-glycolic acid) (PLGA) are becoming a widespread system for drug delivery. Almost all methods used for preparing polymer nanofibers require the use of organic solvents and thus, can only deliver therapeutic agents which dissolve in organic solvents. These solvents are not capable of solvating ionic species and their use limits the therapeutic agents that can be delivered via polymer nanofibers. Proteins, although having outstanding therapeutic potential for a wide range of diseases, are polyelectrolytes and are extremely difficult to load into polymer nanofibers by conventional means. This, as well as, the low thermodynamic stability of proteins, makes designing therapeutic protein release systems challenging. Many proteins could be useful therapeutics, including cytokines such as tumor necrosis factor, and hormones such as insulin. Using a novel nanoprecipitation process in which we can prepare protein nanoparticles that are easily dispersible in acetone while at the same time, are capable of locking a protein in its native state so they can be delivered in their active form to exert therapeutic effects. When these nanoparticles are released from PLGA nanofibers, they can redissolve and are able to release fully functional proteins.

The integrity of the protein within our nanoparticles is essential, since the proteins must be kept in their native state to retain their biological activity. Fibrinogen will be used as a model therapeutic protein and hemoglobin will be used to model the loading of extremely unstable proteins. The integrity of the hemoglobin and fibrinogen, after being released from the nanoparticles and from PLGA nanofibers, will be assessed via fluorescence spectroscopy, infrared spectroscopy, and differential scanning calorimetry.

The Study of Structural Analysis and Toxin Interactions with NaVx (SCN7A) Domain II

Peter Principe (The Verrazano School)

Faculty Mentor: Professor Sebastien Poget
Department of Chemistry

Voltage gated sodium channels (VGSCs) are membrane proteins that are necessary for action potential initiation in excitable cells, which allow the conduction of (Na+) across the cell's plasma membrane. Mutations on a specific sodium channel, such as NaVx, have been shown to be involved with certain human diseases including epilepsy.

My study involves the human VGSC NaVx, which is coded by the SCN7A gene. This VGSC is believed to be located within the human hippocampus and has been shown to be involved with the development of epilepsy in mice. There are ten known isoforms of the VGSCs in mammals. The voltage sensing domain (VSD) of NaVx Domain II has the greatest sequence similarity to that of the Nav 1.1 Domain II (>87%).

The goal of this project is to determine the structure of Domain II within NaVx, because knowledge of the structure can give great insight as to the functional mechanisms of the sodium channel. My project involves the aim to better analyze the structure of NaVx Domain II and to discover a binding

site to which a toxin could interact with. We have successfully purified NaVx as an inclusion body fusion protein, crucial to structural protein analysis, and we are moving forward with thrombin cleavage. Following successful cleavage it will be possible to attempt to refold the protein into its native conformation. From there structural studies can be performed using multidimensional solution state NMR spectroscopy.

POSTER #106

Lysozyme Loaded PLGA Nanofibers for the Treatment of Microbial Infections

Andrew E. Sadek

Faculty Mentor: Professor Krishnaswami Raja
Department of Chemistry

Lysozyme is a hydrolase produced by many organisms and are part of their immune system. Lysozyme serves as a way to degrade the cell walls of pathogenic fungi and bacteria. Lysozyme can potentially be used as a therapeutic because of its potent ability to kill fungi and bacteria as well its lack of toxicity. Lysozyme cannot be administered orally because, as a protein, it will degrade in the stomach and small intestines and will not cross the intestinal lining.

Biodegradable polymers such as poly(lactic-co-glycolic acid) (PLGA) are becoming a widespread system for drug delivery. By fabricating PLGA nanofibers therapeutic agents can be applied to mucous membranes. By incorporating lysozyme into PLGA nanofibers serious microbial infections can be treated with a very effective agent with that is completely non-toxic. Since many serious infections are due to the colonization of mucous membranes and epithelial tissue by pathogens administering lysozyme to these infected tissues can be a very efficient therapeutic strategy.

Almost all methods used for preparing polymer nanofibers require the use of organic solvents, and thus can only deliver therapeutic agents which dissolve in organic solvents. These solvents are not capable of solvating ionic species and their use limits the therapeutic agents that can be delivered via polymer nanofibers. Using a novel nanoprecipitation process in which we can prepare protein nanoparticles that are easily dispersible in organic solvents, while at the same time, are capable of locking a protein in its native state so that they can be delivered in their active form to employ therapeutic effects. Using our approach, these lysozyme-nanoparticles can be released from PLGA nanofibers, they then can re-dissolve and the released protein is able to act as a microbial agent.

POSTER #25

Neonatal Stimulation of PKC Epsilon Signaling Elicits Normalization of Fragile X-Associated Deficits in PVN Oxytocin Expression and Later-life Social and Anxiety Behavior

Rodina Sadek

Faculty Mentor: Professor Probal Banerjee
Department of Chemistry

Fragile X Syndrome (FXS) is an inherited developmental disorder characterized by disturbances in emotional and social behavior. Our studies have revealed suppressed oxytocin expression in the paraventricular nucleus (PVN) in postnatal day 20 (P20) Fmr1 knockout (KO) mice, the leading model of FXS. Stimulation of PKC epsilon during P6-14 by administering a selective PKC activator, dicyclopropenyl-linoleic acid (DCP-LA), rescued PVN oxytocin levels at P20. Further establishing the

involvement of PKC epsilon, co-administration of a selective PKC epsilon inhibitor eliminated the DCP-LA-evoked rescue of oxytocin expression in the PVN. Quite strikingly, later-life social behavior deficits and hyper-anxiety observed in the KO mice at P60-90 were rescued to normal levels in the DCP-LA-treated mice. Thus, we present a novel strategy to circumvent aberrant brain development in FXS and accompanying socio-emotional behavioral deficits, by activating PKC epsilon signaling during neonatal development

POSTER #41

Diffusion through Multi-Layer Hydrogel Droplets

Michael Weitzman (Macaulay Honors College)

Faculty Mentor: Professor Alan Lyons
Department of Chemistry

Hydrogels are comprised of cross-linked polysaccharide or protein polymer molecules that absorb water readily. These gels form a soft, moist controlled system that simulates the natural environment in which plant and mammalian cells grow. As a result, researchers are attempting to use individual nanoliter droplets of hydrogels to culture cells for high-throughput drug screening because cells grown in such 3D environments provide a more physiologically relevant model to assess drug functionality. Alginate hydrogels are three-dimensional polymers extracted from kelp and are made of chains of mannuronic and guluronic acid. Alginate is cross-linked by calcium ions, which binds to two acid groups on neighboring polymer chains forming a relatively rigid hydrogel. Collagen is another type of hydrogel, similar in characteristics to alginate, and is the most abundant protein in mammals. Collagen solutions are cross-linked by incubating them at 37oC in a moist environment. A larger number of cell types can be cultured in collagen, but cells can digest this hydrogel and so it is suited only for short-term studies. In contrast, the more rigid alginate is stable, cannot be digested, but diffusion of molecules through the hydrogel is slow.

The properties of these two hydrogels will be quantified by studying the diffusion of Bovine Serum Albumin (BSA), tagged with a Alexa-488 fluorophore, through them using fluorescence spectroscopy and confocal imaging. Multi-layer hydrogel structures will be created, such that a rigid alginate0outer layer will be formed around the interior collagen droplet. The effect of alginate outer layer thickness on BSA diffusion out of the collagen inner layer will be measured and compared to the diffusion rates of each of the hydrogels individually. The goal is to model the rate of diffusion through the multi-layered structure of these two hydrogels.

POSTER #105

Cytocompatible Polysaccharide Incorporated Biomimetic Tubules

Nicole A. Zubrich (The Verrazano School)

Faculty Mentor: Professor Krishnaswami Raja
Department of Chemistry

Chemical gardens are created by seeding water-soluble salts of multivalent cations of many of the elements in the periodic table into a highly concentrated solution of sodium silicate. They can also be produced by injecting concentrated salt solutions into sodium silicate. The mechanism of formation of these constructs is driven by osmotic pressure, and buoyancy. Structures that resemble chemical gardens exist in nature as seen in hydrothermal vent systems at the ocean floor in the form of mineral assemblies. These assembles closely resemble the scaffolds of natural sponges which are considered

to be the first animal life form. In this project we redefine the Chemical garden experimentation to reconstruct tubular sponges through a nonequlibrium process of combining different ratios of various polysaccharides eg. sodium alginate, agar, and spirulina into solutions capable of proceeding in construct formation. Sodium alginate is a good candidate for this specific research due to its polysaccharide configuration extracted from brown seaweed providing a strong rigid formation of construct.

A series of protocols, and analytical methods to characterize this new generation of biomaterials was developed. The surface chemistry of the scaffolds was programmed to introduce cue molecules, which promote the adhesion of test mammalian cell lines. The attachment, and long-term viability of cells on the final supracellular assemblies were characterized via advanced microscopy.

The further aim of this experimentation is to create surface chemistry of SMTs for the adhesion of mammalian cells, optimizing the environment for 3D cell culture. The enhancement of cell adhesion comes from cue molecules that allow pluripotent stem cell differentiation. This programing allows the optimization of the surface of the SMTs for the culture of mammalian cells.

COMPUTER SCIENCE

CONFERENCE LOCATION:
WEST LOUNGE

P O S T E R   # 8 6

Parallel Ant Colony Optimization for Flow Shop Scheduling under Shared Memory Platform

Andrew Cardozo

Faculty Mentor: Professor Yumei Huo
Department of Computer Science

The ant colony optimization algorithm is a metaheuristic solution for optimization inspired by the foraging behavior of ants in nature. A subset of "swarm intelligence" algorithms, it finds an optimal path or order using simulated "ants" that leave pheromone trails behind in reaching an endpoint, so that all ants eventually converge on the most efficient path. A two-machine flow shop is described as follows: There are two machines, each of which can handle at most one job at a time. There are n jobs that need to be scheduled. Each job has two operations which will be scheduled on two machines respectively. For each job, the second operation cannot begin before the first operation completes.   The bulk of flow shop research in the last decades has been focused on the minimization of the maximum of the job completion time, i.e. the length or makespan of a schedule. On the other side, machines may not always be available due to breakdown, preventative maintenance, or processing unfinished jobs. The production manager has to decide: in a flow shop environment, with limited machine availability due to preventative maintenance or periodical repair, how should jobs be scheduled in order to optimize the total completion time? In this project, we work on a two-machine flow shop problem subject to limited machine availability. Our goal is to optimize the total completion time. We design efficient parallel ant colony optimization algorithms for this problem based on a shared memory platform and hybrid platform. We perform experiments testing the algorithms and analyze their performance.

P O S T E R   # 6 2

Evaluation of Cluster Parameters Based on Silhouette Analysis

Ryan Chen

Faculty Mentor: Professor Natacha Gueorguieva
Department of Computer Science

Cluster analysis is the formal study of methods and algorithms for grouping, or clustering, objects according to measured or perceived intrinsic characteristics or similarity. Cluster analysis does not use category labels that tag objects with prior identifiers, i.e., class labels.   The absence of category information distinguishes data clustering (unsupervised learning) from classification or discriminant analysis (supervised learning). The aim of clustering is to find structure in data and is therefore exploratory in nature.

Clustering algorithms can be broadly divided into two groups: hierarchical and partitional. Hierarchical clustering algorithms recursively find nested clusters either in agglomerative mode (starting with each data point in its own cluster and merging the most similar pair of clusters successively to form a cluster hierarchy) or in divisive (top-down) mode (starting with all the data points in one cluster and recursively dividing each cluster into smaller clusters).   Compared to hierarchical clustering algorithms, partitional clustering algorithms find all the clusters simultaneously as a partition of the data and do not impose a hierarchical structure.

K-means is one of the most widely used algorithms for partitional clustering. Ease of implementation, simplicity, efficiency, and empirical success are the main reasons for its popularity. The K-means algorithm requires three user-specified parameters: number of clusters K, cluster initialization, and distance metric, with the most critical choice being K.   Fuzzy clustering is a powerful unsupervised

method for the analysis of data and construction of models. Objects on the boundaries between several classes are not forced to fully belong to one of the classes, but rather are assigned membership degrees between 0 and 1 indicating their partial membership. Fuzzy C-means (FCM) algorithm is the most widely used, but also needs preselecting the number of cluster centers.

In this research, we select the number of cluster centers for both K-means and FCM based on Silhouette analysis. The respective Silhouette coefficients and Silhouette plot allow to study the separation distances between the resulting clusters and to assess parameters like number of clusters.

POSTER #173

Using Similarity Measures to Examine Naked Mole Rat Behavior

Zachary Diemer (Macaulay Honors College)

Faculty Mentor: Professor Susan Imberman
Department of Computer Science

Over the course of the last 30 years, animal behaviorists have utilized manual techniques to analyze the behavior of animals. However, in today's highly technological society, manually recording and analyzing data can be extremely slow, painstaking, and inaccurate in many cases.   Recent advancements in technology and data analysis techniques can aid these animal behaviorists and provide them with highly accurate and more refined analyses. In particular, recent breakthroughs in Reality Mining have allowed researchers to analyze large volumes of data, and determine specific animal behaviors.   This research paper will measure the effectiveness of similarity measures in determining a specific form of animal behavior.   In this particular case, we will be attempting to determine the birth of a new Naked Mole Rat (NMR) pup into a colony of NMR's. We will utilize two methods to do this: 1) we will take an overall look at the colony behavior, and attempt to determine if there is any extraordinary differences in the colonies behavior over time and 2) we will examine the queen's behavior, along with the behavior of her typical constituents and see if there is a drastic alteration in their behavior.

POSTER #231

A Research Game to Assess Collaboration between Autistic Players

Michael Kholodovsky, Hassan Elshervini

Faculty Mentor: Professors Deborah Sturm and Kristen Gillespie-Lynch
Departments of Computer Science and Psychology

We developed a two-player Kinect game to help autistic people interact and collaborate with their siblings, parents, and peers. The game has two playing modes - initially the players work on a task independently. In order to complete the task they must collaborate and agree. We are currently adding a component to assess the level of in-game cooperation. Using face tracking we developed a metric to automatically quantify joint attention based on the amount of time each player individually and together engage with one another. We utilize landmarks from a facial point cloud generated by the Kinect sensor in order to detect how the players are positioned. Our game was developed by an interdisciplinary team using the Unity engine with scripts written in C#. The platform is a Windows PC with the Kinect gesture-based user control system. Autistic college students have been involved in the game design and evaluation.

POSTER #12

Finding Hash Collisions using MPI on HPC Clusters

Joon Kim, Melisa Cantu

Faculty Mentor: Professor Xiaowen Zhang
Department of Computer Science

In cryptography, a hash function is a very important cryptographic primitivewith a wide range of applications. There are three required properties for a good hash function, i.e., collision, pre-image, and second pre-image resistance. In this paper, we try to contest these properties on a popular and widely used hash function called MD5 - and its two simplified versions that we made. The birthday attack technique was used to test MD5's general collision resistance, while the brute force method was used in the search for pre-image and second pre-image collisions. We calculated the Hamming distance to monitor the progress in our search for a collision; the smaller the Hamming distance the better. Our input domain for the MD5 hash function consisted of hexadecimal bit-strings and strategically generated ASCII character strings. Since finding hash collisions demands much more computing power and storage, we wrote C parallel programs in conjunction with the Message Passing Interface (MPI) library that runs over multiple processors / cores in the heavily used CUNY HPC cluster called Penzias. Multiple search / sort / merge algorithms were tested, not only to reduce time and space complexities, but also to improve performance. Hash distributions, numerous arbitrary meaningless and a few meaningful collisions were found.

POSTER #54

Validation Measures for C-Means Clustering Algorithms

Tony Mai

Faculty Mentor: Professor Natacha Gueorguieva
Department of Computer Science

The goal of data clustering, also known as cluster analysis, is to discover the natural grouping(s) of a set of patterns, points, or objects. Therefore, the definition of clustering can be stated as follows: Given a representation of n objects, find K groups based on a measure of similarity such that the similarities between objects in the same group are high, while the similarities between objects in different groups are low. In general, the clustering algorithms can be classified into two categories - hard clustering and fuzzy (soft) clustering. In hard clustering, the data is divided into distinct clusters, where each data element belongs to exactly one cluster.   In fuzzy clustering, data elements belong to more than one cluster, and associated with each element is a set of membership functions. Most of the classical hard-clustering algorithms produce piecewise linear boundary of a cluster, while clusters with non-linear boundaries are successfully handled by fuzzy clustering algorithms. Many data clustering algorithms have been proposed among which the c-means techniques are most well-known and widely used. The c-means algorithms, in a broad sense, are classified into the following three major categories: a) crisp c –means (K-Means); b) fuzzy c –means (Fuzzy C-means), and c) a family of competitive learning algorithms (Learning Vector Quantizer). In this research we are concentrating on the first two algorithms and, more specifically, on the most important issue in cluster analysis: evaluation of clustering results, which is the main focus of cluster validity. The latter include the evaluation of cluster compactness and separation. The first one requires the members of each cluster to be as close to each other as possible, which defines the variance and its minimization as a possible measure for compactness. The second criterion, i.e. separation, is based on measuring the distance between different clusters. Here we use two different categories of validation measures appropriate respectively for crisp (Dunn's Index (DI) and Alternative Dunn Index (ADI)) and fuzzy ((Partition Coefficient (PC) and Classification Entropy (CE), Partition Index (SC), Separation Index (S), and Xie and Beni's Index (XB)) clustering.

P O S T E R   # 7 8

A Study of RFID Authentication Protocols

Sidhartha Mishra (The Verrazano School)

Faculty Mentor: Professor Xiaowen Zhang
Department of Computer Science

RFID (Radio Frequency Identification) technology has gained popularity in recent years due to the decreasing manufacturing cost of tags combined with the fact that RFID communication does not require line of sight scanning or physical contact.

For this project, we consider RFID communication, with relevance to security and privacy, specifically focusing on the passive RFID tags. These tags do not have an on-board power source and instead depend on the signal from the reader to generate energy to transmit data. Consequently, these tags have access to a limited amount of processing power. The tags contain the identifying information corresponding to its respective object which is sent to the reader, which in turn is connected to the back-end server. This communication between the reader and tag takes place over radio frequencies which is considered insecure due to its susceptibility to eavesdropping and other forms of malicious attacks. Given the limited resources and processing power of the RFID tags in question, only lightweight protocols that may be implemented to provide secure authentication between tag and reader can be considered.

Therefore, this project focuses on a few selected lightweight RFID authentication protocols. The key points of each protocol, including strengths and weaknesses with relevance to security, are discussed individually as well as in comparison to the other protocols under discussion. In addition, as part of this project, a software program hasbeen created to provide simulations of these protocols.

P O S T E R   # 6 9

Evaluation of Cluster Compactness and Cluster Separation of ISODATA Algorithm

Christopher Paradiso (The Verrazano School)

Faculty Mentor: Professor Natacha Gueorguieva
Department of Computer Science

The objective of clustering is to discover and reveal the structure of data, called cluster by identifying and quantifying the similarities between individual data samples. The basic idea in most clustering algorithms is to identify a set of samples around which clusters may grow and to update samples to clusters so as to achieve a better partition. Data clustering has been used for the following three main purposes: a) underlying structure: to gain insight into data, generate hypotheses and detect noise; b) natural classification: to identify the degree of similarity among forms or organisms; c) compression: as a method for organizing the data and summarizing it through cluster prototypes. Clustering algorithms can be broadly divided into two groups: hierarchical and partitional.   Hierarchical clustering algorithms recursively find nested clusters either in agglomerative mode (starting with a data sample and merging the most similar pair of clusters) or in divisive one (starting with all the samples in one cluster and recursively dividing each cluster into smaller clusters). Compared to hierarchical clustering algorithms, partitional clustering algorithms find all the clusters simultaneously as partitions of the data without producing a hierarchical structure. For any clustering algorithm, the number of clusters is a key parameter since it is directly related to the number of homogenous regions in the given data. ISODATA clustering, although it is similar in principle to the K-means algorithm, can determine the number of clusters and cluster centers dynamically. ISODATA achieves the optimal partition on the base of splitting and merging operations which require some additional

parameters corresponding to these operations as well as the minimum number of patterns in a cluster and the number of iterations to be initially specified. In this research we evaluate the efficiency of ISODATA clustering results with validation measures for crisp clustering Dunn's Index and Alternative Dunn Index and modified versions of Partition Coefficient, Classification Entropy, Partition Index, Separation Index, and Xie and Beni's Index. We also use the Silhouette coefficients and Silhouette plot in order to study the separation distances between the resulting clusters.

P O S T E R   # 2 0 5

Parallel Tabu Search Algorithms for two Machine Flow Shop with Limited Machine Availability

Soyean Park

Faculty Mentor: Professor Yumei Huo
Department of Computer Science

In this research, MPI parallel Tabu Search algorithms with various parallel schemes and various neighborhood search methods are presented and applied to Permutation Flowshop Scheduling Problem subject to limited machine availability. The objective is to minimize total flowtime criterion. This problem is proved to be NP-complete in a strong sense for more than one machine even when machines are always available. Our parallel Tabu Search algorithms are based on the classical Tabu Search algorithms, but are implemented and adapted on parallel computer systems with Message Passing Interface involving the communications and collaborations of multiple computing nodes. Computational results are given to compare the performance of all these algorithms.

A two-machine flow shop is described as follows. There are two machines, each of which can handle at most one job at a time. There are n jobs that need to be scheduled. Each job has two operations which will be scheduled on two machines respectively. For each job, the second operation cannot begin before the first operation completes. The bulk of flow shop research in the last decades has been focused on the minimization of the maximum of the job completion time, i.e. the length or makespan of a schedule. However, Gupta and Dudek pleaded that criteria in which the costs of each job are reflected have a better economic interpretation than the makespan objective has. This paper deals with the minimization of the sum of the job completion times ina two-machine flow shop. On the other side, machines may not be always available due to breakdown, preventive maintenance or processing unfinished jobs from a previous planning horizon. The production manager has to decide: in a flow shop environment, with limited machine availability due to the preventive maintenance or periodical repair, how jobs should be scheduled in order to optimize the total completion time? The research in this project is motivated not only by the lack of research results in this area, but also by its important applications in reality.

POSTER #230

Designing a Serious Game to Study the Organization of the Human Brain

Zhi Qiu, Kasie Okpala, Yoni Zomick

Faculty Mentor: Professors Deborah Sturm and Dan McCloskey
Departments of Computer Science and Psychology

We report on a serious game, "Free Will," that is designed to teach the functional anatomy of the human brain to undergraduate and graduate students in Psychology and Neuroscience courses. The game provides a unique, immersive, first-person experience for students to understand the discrete faculties of the human brain and the associated brain regions. In addition to our core designers and developers, we included design- feedback testers on our team to give us iterative feedback throughout the development process. Initial feedback from this group indicates that "Free Will" is effective as a game-based learning supplement.

POSTER #42

Implementation of Density-Based Spatial Clustering to Non-Linearly Separable Clusters with Noise

Irteza Syed (Macaulay Honors College)

Faculty Mentor: Professor Natacha Gueorguieva
Department of Computer Science

Cluster analysis or clustering is the task of grouping a set of objects in such a way that objects in the same group (called a cluster) are more similar (in some sense or another) to each other than to those in other groups (clusters). It is widely used in data mining, statistical data analysis, machine learning, pattern recognition, image analysis, information retrieval, bioinformatics etc. Cluster analysis itself can be achieved by various algorithms that differ significantly in their concept of what creates a cluster and how to efficiently find them. Popular approaches used in design of clustering algorithms include grouping based on small distances among the cluster members, dense areas of the data space, intervals or particular statistical distributions.

Most clustering algorithms do not rely on assumptions common to conventional statistical methods, i.e. underlying statistical distribution of data, and therefore they are useful in situations where little prior knowledge exists. Therefore, the appropriate clustering algorithm and parameter settings (including values such as the distance function to use, a density threshold or the number of expected clusters) depend on the individual data set and intended use of the results. In this research we are using density spatial clustering methodology to cluster noisy non-linearly separated data. This approach has the following advantages: a) it does not require one to specify the number of clusters in the data a priori, as opposed to K-Means; b) it can find arbitrarily shaped clusters as well as clusters completely surrounded by (but not connected to) a different cluster; c) it is robust towards noise; d) it requires just two parameters and is mostly unaffected to the ordering of the points in the database.

The quality of density spatial clustering algorithms depends on the distance measure where the most common distance metric used is Euclidean distance.

This metric however is almost useless for high-dimensional data due to the so-called "Curse of dimensionality". Because of this our future research will be concentrated on developing a set of algorithms based on this approach but using different distance metrics as Mahalanobis, Minkovski, cos etc

P O S T E R   # 2 7

Using Parallelism to Estimate the Number of Path- and Cut-sets of a Graph with Restricted Diameter Based on Monte Carlo Methods

Steven Wojcik

Faculty Mentor: Professor Louis Petingi
Department of Computer Science

Consider a network G = (V,E,T) composed of a set V of vertices, a set E of edges, and a set T of vertices called the terminal-set. In this paper we show how the Construction/Destruction Monte Carlo simulation methods can be applied to estimate the number of topological structures of a graph G, called path-sets (and their combinatorial dual cut-sets), which are subgraphs of G where the maximum distance between the vertices of T (i.e., the T-diameter) is less than or equal to a given diameter bound d. The number of path-sets (or cut-sets) are required to calculate the reliability of a network, and since determining the number of such structures is an intractable problem, we embed these methods within a distributed environment, using MPI libraries.   The Construction/Destruction methods, in combination with parallel computing, provide surprisingly accurate estimates.

CURRICULUM AND INSTRUCTION

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

POSTER #116

From A to Z: A Literacy Learner

Gabriella Belfiore (The Verrazano School)

Faculty Mentor: Professor Stephanie Schmier
Department of Curriculum and Instruction

This project draws on data I gathered while working with a student during my fieldwork hours required for teaching certification. My student, who will be referred to as John, was a first grader who was reading significantly below grade level. During our sessions we worked on strengthening reading strategies and phonics skills, including comprehension of texts, pronunciation of letters and their sounds, word constructions, and retelling of stories. By the end of the six sessions he had greatly improved. He was able to use his knowledge of phonics to sound out words, which helped him strengthen his ability to retell a story and comprehend a text. Through this experience I was eager to learn more and research into the possible socioeconomic factors that might affect student's learning, the effective use of technology in the elementary school setting, and different comprehension strategies to help a non-reader in the first grade. Through my research I found that socioeconomic status and funds of knowledge are both factors within a child's life that can have an effect on student learning and growth. Also, technology is a useful tool to use in the classroom if it is used in the correct manner to boost student learning and involvement. But most of all, I learned the beauty of teaching and got a sneak-peak into the future.

POSTER #43

Effect of Technology-enhanced Projects on Elementary Students' Attitudes towards STEM

Corey Brooks

Faculty Mentor: Professor Irina Lyublinskaya
Department of Curriculum and Instruction

The aim of this project is to examine whether attitudes towards STEM of elementary school students can be improved by introducing real-life technology-enhanced projects into STEM curriculum.The project will also examine changes in student interest in future STEM careers. In this project the researchers will collaborate with Staten Island MakerSpace, a non-profit community based organization, dedicated to promote creativity and collaboration across disciplines and to make technology accessiblen to anyone who desires   to make or invent something, regardless of skills or experience (http://www.makerspace.nyc/).   The projects will provide students with opportunity to apply the knowledge gained in STEM courses to make an art piece or a product for use at school or home. The study will be guided by the following research questions: How does integration of technology-enhanced real-life projects affects elementary students' attitudes towards STEM and interest in future STEM careers? The study will be conducted in the spring semester of 2017 in a classroom of an undergraduate childhood education student during his student teaching.

Children can Understand Number Relationships through Real Life Objects, Relatable Stories and Manipulatives

Stephanie Bryant, Tulay Kocer

Faculty Mentor: Professor Judit Kerekes
Department of Curriculum and Instruction

Number sense is "a well-organized conceptual framework of number information that enables a person to understand numbers and number relationships and t solve mathematical problems that are not bound by traditional algorithms" (Bobis, 1996). One of the integral principles of number sense is the principle of number relationships. This principle is important because it stresses that numbers are interconnected and that children can make use of numbers in meaningful ways (Locuniak & Jordan, 2008). This research will be exploring different ways to engage children in learning the concept of number relationships. Our goal is to help children to understand the connection between numbers and meaningful ways they can use them by engaging them in activities using real life objects, relatable stories, and manipulatives.

Defining the Limits: An Emerging Readers Journey

Christina Colucci (The Verrazano School)

Faculty Mentor: Cheryl Craddock
Department of Curriculum and Instruction

Literacy learners often face obstacles that hinder their learning such as disabilities, family issues and lack of resources. These obstacles can be altered through strategies incorporating reading programs, manipulatives, technology and comfort within their classroom. Title 1 schools in less fortunate neighborhoods have a particular effect on literacy learning and directly relates to student preparedness and lack of resources both in school and at home. Therefore, students readiness and ability to learn will be impaired. Literacy learners have difficulty with issues including reading, comprehension, story retelling, sight word recognition, letter sounds and confusing letters. In my research, I have investigated word coding through a program called Orton Gillingham, the incorporation of manipulatives and other factors.

Providing students with the proper tools, such as technology, a proper and comfortable atmosphere, varieties of reading material and hands on reading aids, and resources falls hand in hand with their success (Louden, 179-180). According to William Louden, to implement an effective environment for literacy learning, teachers should incorporate books that are relatable, establish a comfortable physical arrangement, promote participation and follow each reading with engaging activities (Louden, 179). Considering all different levels of learning abilities, student background and research, it is apparent that students are strongly effected by their home life such as lack of parental involvement or financial struggles and need certain strategies in place to achieve success (Clark, 197). Hands on learning and technology are both factors that will assist students in their development as many educational theorists have proven that manipulatives are a key factor in childhood development and academic growth. Therefore, having the necessary funds allows students access to classroom manipulatives and technology that will enhance their abilities as readers and forge success in their futures. Learners struggling with literacy often face difficulties with their family life but have the ability to obtain success through reading programs, manipulatives, technology and comfort within their classroom.

POSTER #28

Forget the Phonics for Struggling Readers

Sara Costa (Macaulay Honors College)

Faculty Mentor: Professor Stephanie Schmier
Department of Curriculum and Instruction

In a one-on-one case study, I spent approximately ten sessions with a third grade student who read at a level D, two grades behind the average in his grade. Within that time frame I analyzed his strengths and weaknesses as a reader, and determined his most prominent problem was phonics. Traditional phonetic instruction can be problematic for struggling readers because phonetic strategies that tend to prove successful with younger readers at the same level are not as successful with older students. Reading intervention problems with strong phonetic emphasis fail to recognize the complexity of the reading process, disengage students, jeopardize their confidence as readers, provide less time for authentic reading experiences, and do not prepare them to read fluently. Increasing reading volume, providing an assortment of diverse and alternative texts, and executing a balanced approach in which a multitude of reading strategies are applied within authentic reading materials improve reading comprehension, fluency, word-recognition, and decoding. Older students need different, more meaningful reading interventions to improve student motivation and overall improvement.

ECONOMICS

CONFERENCE LOCATION:
BOTTOM CENTER

P O S T E R   # 1 1 5

The Developing Economy of South Asia: Implications of Energy Development

Mahwish Razi (The Verrazano School)

Faculty Mentor: Professor Alexandru Voicu
Department of Economics

Green energy development is becoming more and more an important contributor to the economy. As it grows, we need government support to implement policies that will favor its continued success. This study aims to assess the various implications of energy development on South Asia by considering three main variables: health, employment and standard of living. We will structure this research around three central questions. 1.What are the health concerns with the current energy sources available and can cleaner energy sources help to improve these conditions? 2. How do current energy sources play out in the job sector and can clean energy change employment numbers? 3. Are there particular areas affected more by fossil fuel pollution and can new and cleaner energy sources raise the standard of living?

Although this study will be conducted in general on the South Asian region, there will be a larger concentration on the two countries India and Pakistan, on the basis that both are very large countries and are growing at a very fast pace. Data from the World Bank and CIA World Factbook suggest India to be the eighth fastest growing economy in the world and in the lead for South Asia. Pakistan however, had relatively the same per capita income as India up until 2008, and being the sixth most populous country in the world, its economy is skyrocketing. With rapid population growth, questions begin to arise of how energy demand will be sustained.

We will analyze the effects of fossil fuels and whether they differ across location, gender and age. Data will be collected on health statistics pertaining to location, gender and age to then determine the effect of the current energy mix on those three variables. Further research will be conducted in the area of employment in relation again to location, gender and age. By focusing on employment variations based on these variables, we can begin to see the effects of current energy sources. We will then proceed to an analysis of the standard of living, and establish its relationship to the current energy situation and possible number changes with future energy development, and policy changes.

ENGINEERING SCIENCE AND PHYSICS

CONFERENCE LOCATION: WEST LOUNGE

POSTER #176

GPS Tracker

Nawal Aamer, M. Achraf Youzbachi

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

This project provides a cost effective solution for tracking purposes. It will help people track someone they care for in case of any disaster/calamity or because of any kind of accident. It may even be used to track wallets and other valuable objects. We are designing of a text based GPS tracker controlled through an android application. It will have a hardware part which will be a module at the tracker end and the android application will be on the mobile phone at the user end. Most mobile phones are smart phones and are equipped with location services capabilities allowing us to get the devices geographic position in real time. The hardware will be attached to the specific vehicle or the person we want to track. A text message will be sent to the module via the android application. It will reply by sending the coordinates of longitude and latitudes using the GPS antenna. With the help of google maps, the coordinates will be used to indicate the exact location.

POSTER #123

Increasing the Efficiency of Solar Panels with Thermoelectric Coolers

Ali Abbasi, Ziya Movsumov

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Our project focuses on a method of increasing the efficiency of solar panels by cooling them with a thermoelectric cooler. A thermoelectric cooler works with the Peltier effect, where current travels from p-type to n-type semiconductor to create heat resulting in cooling effect on the other side. By cooling a solar cell with a Peltier device, we are able to keep the panel in a temperature range that is optimal for the full efficiency of the solar cell. As solar panels are receiving photons from the sun's rays, it produces electricity. When the solar cells heat's up, they produce less electricity. At around 75 Fahrenheit solar cells lose about 10-15% efficiency. Once they reach a high enough temperature of approximately 105 Fahrenheit the drop-in power is extreme. We are able to find the maximum power point of the solar cell. A maximum power point tracker increases the efficiency of the solar cells by controlling the load on the solar panel to keep it in its maximum power state.

POSTER #64

Guide to a Better Signal

Sakib Alam, Dylan Niquette

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Mobile companies arbitrarily choose to display carrier information in the form of bars, resulting in customer misinformation, and difficulty when trying to find where a better signal exists. We have developed an Android application named "Signull" that maps service carrier information with the corresponding Global Positioning Service (GPS) coordinates. Mapping this data we are able to direct the user towards a location with the best possible signal strength under ideal circumstances within a

localized area. The Signal application map is color-coded to display the signal data range, and an arrow is used to direct the user to the best possible location for a carrier signal. This real-time measurement and mapping process has many potential uses. Implementation of this type of process can aid in the predictive ability of GPS based navigation system where cellular data may be intermittent. Accurately predicting dead zones can allow navigation systems to essentially buffer navigation data allowing for a better navigation experience.

P O S T E R   # 2 0 6

Quantifying Movement Sequence for Autonomous Vehicle

Cecilia Alva (The Verrazano School), Nadia Elattar

Faculty Mentor: Professor Chang Min Kim
Department of Engineering Science and Physics

In the post-modern era just about everything involves automation of some degree. Automation is the technique, which allows a process, system, or apparatus to become self-operating. This contained operation is controlled both electronically and mechanically to perform given tasks as it functions without continuous input from the user. The immediate objective of this research is to develop a prototype model with the capability to move autonomously, allowing for more complex tasks to be fulfilled. This model has been developed with an ultrasonic sensor, DC motors, motor controller, and an Arduino Mega to quantify its movement path. Another objective is to use the sensor to identify the distance from a barrier and turning to continue its movement path and thus enabling the development of a model that can cover a given quadrilateral surface area. In the future an advanced model will be developed whose tasks may include object detection and pattern modification to cover other surface areas. This would be based on advanced programming logic from our movement pattern design covering surface area. Where automated vehicles will be used to provide additional tasks for users such as vacuuming or lawn mowing. Accordingly, there is a need for improved methods and programming can hold the promise for further advancements in this application.

P O S T E R   # 1 6 9

Speed Detector

Danaelle Bonheur, Arslan Younis

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

According to the National Safety Council, last year, more than 38,000 people died in motor vehicle crashes. An annual report on unintentional injuries shows the biggest causes of fatalities on the road are due to alcohol, speeding and distracted driving.

Our mission is to reduce the number of accidents and deaths on our roadway. We plan to do this by creating a mobile application design to protect drivers, pedestrian and cyclist. This mobile application would be created to alert the driver when exceeding a specified speed limit. When driving the application will signal the driver car to lower the vehicle speed and drive at the appropriate limit.

The application can retrieve speed limit of the car versus the set speed limit indicated by the user. A source of information we will be using will be our location, which is defined by latitude and longitude points. As the driver is driving the location points will change which will then be used to calculate speed based on the distance and time. A comparison will be made to the drivers speed and

issue him/her a warning to slow down if they are over the speed limit which they specified in the app. The app will also limit the user from using his phone while driving. The objective is to create a safer road by alerting drivers of their speed in order to reduce the accident rate.

Bicycle Generator

Thomas Carbonaro (The Verrazano School), Scott Shouldis (The Verrazano School)

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Our project aims to eliminate the problem of low or no battery power for portable electronic devices for bicyclists. This design is a bicycle generator attachment. It uses the pre-existing bicycle tire motion to generate power to charge devices. The moving tire will contact the motor shaft through a rubber nub. The tire spins this motor and it acts as a generator to produce a voltage to charge an internal battery pack. This internal battery assures the device will charge whether or not the bicycle is in motion. It can charge a wide range of electronic devices (GPS devices, cell phones, wireless headphones, etc.) via USB output. We will measure the charging rate of the motor at different riding speeds and compare it to the charging rate of a wall charger. This device utilizes energy already being exerted for riding the bicycle, thus being "Eco-friendly", minimizing waste and maximizing efficiency.

Transfomer Toy: Pneumatic Articulated Muscle

Paul Cavanaugh, Vitaliy Dvorkin

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

A child sees "Transfomers" the movie or TV show for the first time. They want a transformer toy that is as exciting as in the movies. Finally, they receive their transformer and are disappointed in the fact that no automatic transformations take place and the child (or parent) must transform the toy themselves. A transformer toy should be able to transform automatically while still being safe enough for children to use. Instead of creating an entire toy, the objective of the project is to safely and effectively transform a piece of the toy which can then be translated to the rest of the toy. The focus is to contract an arm from an initial relaxed position and then return it back to the initial position through a system of air, tubes, and pneumatic artificial muscles (PAM). PAM translates the radial expansion of latex tubing to linear contraction making it the perfect muscle. A large arm protoype was created using the DaVinci 3D printer and ABS plastic. Four PAM devices were attached to the arm from the bicep to the forearm which is then powered using an air compressor and a system of tubes and valves. Strength of different PAM muscles will be tested using different mesh and tubing diameters. Once the strongest ratio of mesh to tubing is determined, the arm will be scaled down to fit a toy. To further improve the interaction between toy and user, muscle sensors will be implemented allowing the child to control the movement and transformation of the toy's arms. This technology can be modified to be used for different parts of the toy causing a transformer toy to live up to its name and transform.

Intelligent 2D Plotter

Richard Durante, Edward Heavey, Melvin Summerville

Faculty Mentor: Professor Aleksander Haber
Department of Engineering Science and Physics

The purpose of this project is to develop and experimentally test robotic feedback control system. In order to experimentally test feedback control systems, we designed and developed a 2D pen plotter with the ability to receive and execute recorded data from external sensors. Pen Plotters have been utilized since the early 1970's and 1980's to accomplish technical drawing for engineers and architects. In those times, printer technology was not capable of producing large scale drawings without significant costs. Since then, the printing technology greatly advanced and the printing costs significantly decreased. Furthermore, the 2D printing technology evolved into a 3D printing technology, and moreover, its basic ideas and principles have found applications in laser cutters and CNC machining tools.

However, the current state of the art plotters, 3D printers, and laser cutters often lack an ability to improve its performance over time, and to attenuate various dynamical disturbances degrading the machine performance and accuracy. In this project we show that the algorithms developed by control engineers can be used to significantly improve the performance of such machines.

We developed an experimental 2D plotter composed of stepper and servo motors, Arduino micro controllers and position sensors based on web cameras and infrared sensors. The sensors detect the position of the pen, and send this information to the Arduino micro controller that calculates the control actions for motors, such that the accuracy and performance of the plotter is improved over time. We demonstrate that the plotter is able to significantly improve its drawing performance, despite the constant dynamical disturbances acting on it. The developed concept can be used in more advanced machines such as 3D printers and laser cutting machines.

P O S T E R   # 1 3 3

Blocking Pain Signals

Hassan Fares, Heba Mohareb

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Reducing pain signals by electrical stimulation is a standard procedure used to treat back pain. Therefore, we are building a stimulation device with a fully controlled and recorded current intensity over time. A controlled voltage/current signal having a very low frequency is necessary for a wider range of observation. This will yield a slower signal, having less ripples and more stability, which allows ultimate control. Controlling the signal means that any magnitude can be stimulated for any time period with high precision. The advantage of a controlled current intensity lies in avoiding tissue damage by not exceeding the applied tissue's threshold. The other aim is to make a record of the stimulation process, which will make the data analyzable and comparable. This is desired mainly by therapists who need to keep a record of their treatment to use at different times.

POSTER #26

Sustainable Aquaponics System

Michael Farina, Peter Guerriera

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Certain regions in the world cannot support crop growth, a problem that is prevalent in developing nations. Aquaponics is a natural solution that works by taking advantage of the constant cycle of water between the aquarium and the plants. The water flowing in the planter from the aquarium is nutrient dense due to the waste of the fish and is used to create a fertilized environment on a continuous basis, in contrast to a hydroponics system, in which the nutrients are hand delivered to the water. To improve upon this conventional design, we have turned an everyday system to a system that takes care of itself. We have implemented a water level sensor that can be connected to any outside water source. The water level sensor keeps track of the amount of water in the tank and the water being used. When there is not enough water due to evaporation or drought conditions, the sensor automatically adds more water to keep the level at a constant to a value set by the Arduino microcontroller.

An oxygen sensor was integrated into the design to monitor the dissolved oxygen level at all times, to ensure the water is suitable for both plant growth and for fish. This sensor communicates with a microcontroller that displays a warning when the oxygen gets too low for life to be sustained. Our system relies on falling water to add oxygen back into the tank, which has the benefit of not requiring external aeration pumps. It was shown that the agitated water due to this feature produced higher oxygen levels than that of stagnant water. Multiple plants were placed into the planter of the aquaponics design; a smaller group of plants were isolated from the system but exposed to the same environmental conditions, namely duration of sunlight, air temperature, and humidity. Preliminary data shows that plants in the system grow at a faster rate than the isolated plants. Data will continue to be collected a course of weeks will allow us to determine the effectiveness of the system and the benefits of utilizing such a system on a larger scale.

POSTER #53

The Ball and Beam Control System Design and Development

John Gioeli (The Verrazano School), Dimitrios Pavlidis (Macaulay Honors College)

Faculty Mentor: Professor Aleksandar Haber
Department of Engineering Science and Physics

This project will develop and experimentally test advanced feedback control algorithms. In order to experimentally test feedback control algorithms, we designed and developed a ball and beam system with supporting actuation and data acquisition.

Ball and beam control designs are seen as a microscopic basis related to real-life control engineering. Control engineering is a multidisciplinary field combining knowledge and tools from many engineering disciplines. Control devices are present in almost any machine or equipment. Examples of control examples can be associated to horizontal stabilization of commercial airplanes and fighter jets as they land or come across turbulence from wind or air flow. Control in the system will allow the plane to be stable and land properly. The idea of ball and beam control systems is to regulate the position of a ball situated on the beam to move to a specific position if interference occurs. The beam will reject disturbances brought to the system by the control feeding information to reposition the ball. With use of Maker Beam framework, 3D printed bases, and Arduino microprocessor along with MATLAB software application, we have tested Infrared and Webcam sensors to explore various

results. Such a system is an ideal test bed for testing and developing advanced control algorithms mainly because without any control, such a system is unstable. We have tested several existing control algorithms for the stabilization of the ball and beam system. We have observed how fast and accurate such systems can stabilize and position the ball on the beam by viewing the collected data in MATLAB. We have proposed improvements of existing algorithms and experimentally verified improved control algorithms.

P O S T E R   # 4

Improving the Audience Experience at Cyber Defense Competitions through Data Visualization

Michelle Kushnir (Macaulay Honors College), John Cosentino, Jeffrey Dietrich (Macaulay Honors College)

Faculty Mentor: Professor Dwight Richards
Department of Engineering Science and Physics

This research involves creating a virtual system known as LUCID that can visualize attacks on machines at cyber defense competitions. This is a NSF granted research project that focuses on improving the experience of the audience at cyber defense competition events. As of now, cyber defense competitions do not have a large audience due to the lack of awareness of the interaction between the competitors and professional hackers. All that can be seen are people sitting at their machines, with only one announcer attempting to explain what is going on between them. This research will ensure a way of visualizing the interaction between the competitors and professional hackers by creating a simulation of what goes on between them. The types of software needed to replicate what happens at cyber defense competitions are penetration software, testing software, intrusion detection software, data traffic capture & analysis software, and visualization software. Our focus includes creating a connection between the Redis server and Nagios using Flapjack, tracking network data using Snort, sending that data to Syslog-ng via Barnyard2, funneling that data in the form of Json strings to the Redis server, then taking that data and using D3.js to visualize the data so it can be displayed on LUCID to keep spectators informed of what is going on between the competitors and the professional hackers.

P O S T E R   # 1 4 0

Inverted Pendulum System

Johnathan Martinez, Anastasia Tataru

Faculty Mentor: Professor Aleksander Haber
Department of Engineering Science and Physics

The research has been focused on the development of an inverted pendulum system, a system which uses its own momentum to move and keep a pendulum in an upright position. The design of this system has been broken up into several parts. The first being the ability to track motion using a camera. The second being the ability to record this tracking data and use it to design the motion of the system. The last being the ability to move the system after interpreting this data.

The ability to track motion was done using a Raspberry Pi camera, and rapid frame capture. This was done by using a MATLAB program that can read color. In this program, we are to take a picture, find the colors, map the colors on a coordinate grid and extract these coordinates for future use. This process is repeated rapidly throughout the experiment. The tracking of data was done by finding the

central point of pixels in a predetermined color. In this case, different colors were attached to different parts of the pendulum system. This was done so we would have a reference point to track the location of the pendulum with respect to the cart. This tracking of color also gave us the location of the cart with respect to the bounds of operation. With this we could create responses to different situations that would occur during the operation of the pendulum. After setting the conditions of movement, the next task was to operate the motor which in turn moves the belt which the cart is attached to. This is done by interfacing the MATLAB programming system with the Arduino Uno, which is being used as a data acquisition board. When the conditions of movement are met, MATLAB sends a signal to the Arduino Uno which in turn sends a signal to the motor.

This research has added a new method to operating an inverted pendulum system. This research not only delves into the field of nverted pendulum systems which can be implemented in other fields to keep objects in certain positions, it also covers the field of image tracking. A very versatile field with an unlimited number of implementations.

P O S T E R   # 5

Eyeglasses Locator

Julio Mezarina, Arjon Kapica

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Losing or misplacing glasses in a room is frustrating when it takes up too much of a person's time searching for them. Our product, the Eyeglasses Locator, is made up of two separate devices which communicate with each other via Bluetooth technology. One of the devices is attached to a wristband which acts as the transmitter while the other device is installed onto the glasses which acts as the receiver. Through Bluetooth, by simply holding the button on the wristband device, a visual indicator and audio alert will go off simultaneously on the device attached to the glasses until the button is released. The nature of Bluetooth technology is that data is sent from the transmitter (wristband) to the receiver (glasses) to activate an alert that quickly lets the user know the location of their glasses. This is similar to the case when losing a phone, a person can call the phone using another device in order to locate it. The maximum range that the two devices could communicate with each other is 60 feet. This does not take into consideration obstacles such as walls, doors, etc.

For our project, we are using pinging as a way of sending data from one device to another, and then the second device sends the information back. The ping is the reaction time of the connection measured in milliseconds. A fast ping means a more responsive connection. Pinging is useful for this application because it will be used as an indicator on the wristband to show whether the user is getting closer or farther to the glasses. A smaller ping time will mean that the wristband is closer to the glasses and a larger ping time will mean the wristband is farther to the glasses. Pinging will tell the user if data is being sent and received from the wristband to the glasses device without error.

POSTER #199

Smart Home

Andrew Morchik, Arslan Younis

Faculty Mentor: Professor Dwight Richards
Department of Engineering Science and Physics

Our goal is to present a model of a smart home. We plan on turning on/off components of a smart home using an Intel Edison Microcontroller. The Microcontroller will link to an app.

The app will allow the user to specify what he/she wants to turn on/off.

Our physical system will be a small box split into a few rooms with components such as lights and fans.

POSTER #153

Model Based Control for Dynamical System

Dimitrios Pavlidis (Macaulay Honors College), Joseph Ferreti (Macaulay Honors College)

Faculty Mentor: Professor Aleksandar Haber
Department of Engineering Science and Physics

The core concept of this project is to develop novel algorithms for controlling temperature distribution of large-scale dynamical systems. Control of such systems is a highly nontrivial problem. First of all, the dynamics of such systems are described by partial differential equations, which are difficult to simulate and analyze. Secondly, the temperature control usually requires control systems with a large number of sensors and actuators. Real-time control of such a system is computationally prohibitive and requires the development of novel control algorithms.

The experimental setup designed for testing these control algorithms is consistent of a 2-meter aluminum rod, on which temperature sensors have been attached, to give a real time measurement of the heat distribution along the rod. The rod is equipped with equidistant heating bands that generate an amount of heat proportional to the electrical current and voltage running through them. The heating bands are affixed at certain positions on the rod, and are controlled independently from one another using solid-state relays and power supplies. The temperature control and measurements have been integrated using a data acquisitioning system in MATLab. In the second phase of the project, we've built a model of the developed test bed. The modeling has been based on the first principles, as well as experimental model estimation techniques. Finally, in the last phase of this project, on the basis of the developed model we experimentally test these real-time control algorithms.

POSTER #47

A Hydrologic Study of the South Eastern Shore of SI, NY

Christopher Pinto (Macaulay Honors College)

Faculty Mentor: Professor Alan Benimoff
Department of Engineering Science and Physics

This study researches the effectiveness of the US Army Corps of Engineers plan to deal with a compound flooding situation on the south eastern coast of Staten Island, NY. The coast is divided into five different drainage areas, by the Army Corps of Engineers. These areas are to be drained by new storm sewers as well as the existing storm sewers. The Army corps of Engineers plans to use a

number of Bluebelt lands that can be used for ponding during intense flooding. This research assumes the storm surge is too high for rainwater to flow off the island and into the surrounding body of water. Therefore, the storm sewer pipelines and ponding areas are utilized immediately in the event of rainfall.

P O S T E R   # 1 8 2

Coastal Stability on the Eastern and Southern Coastlines of Staten Island, New York

Sean Thatcher (The Verrazano School)

Faculty Mentor: Professor Jane Alexander
Department of Engineering Science and Physics

Staten Island is New York City's second smallest borough and has experienced rapid urbanization after the construction of the Verrazano Bridge in the 1960's. The vulnerability of Staten Island's coastal zone was made abundantly clear during Hurricane Sandy in 2012, resulting in the deaths of 23 residents. Utilizing Google Earth Engine Landsat data was obtained between 1990 and 2016, and the coastlines were classified and extracted for each year in ArcGIS. Utilizing the USGS Digital Shoreline Analysis System Extension, the Net Shoreline Movement and Linear Regression Rate was determined for the Eastern and Southern Coastlines on Staten Island along equally spaced transects. The Eastern Coastline is eroding at a rate of 0.54 m/yr determined by the linear regression and moved inland at an average of 13.72 m for each transect between the years analyzed. The Southern Coastline is also eroding at a rate of 0.16 m/yr determined by the linear regression, and moved inland at an average of 16.9 m for each transect between the years analyzed. Future work is being geared towards understanding coastline changes for individual neighborhoods on the Eastern and Southern Coastlines to determine if the rate of coastal erosion is increasing, along with understanding how coastal ecosystems have changed throughout the years of interest.

P O S T E R   # 1 5 4

Evaluating the Mixing of Offshore Waters by the Northern US Virgin Islands along the Puerto Rico Shelf Break

Tetiana Vasyleva (Macaulay Honors College)

Faculty Mentor: Professor David Lindo-Atichati
Department of Engineering Science and Physics

The dominant driver of oceanographic circulation near shelf breaks is bathymetry, or the underwater landscape. This is in contrast to near shore circulation, which is most influenced by wind forcing, and deep ocean circulation, which is mainly driven by density gradients. Puerto Rico, the British Virgin Islands, St. John, and St. Thomas lie on a shallow shelf such that the maximum depth found between them is approximately 25m. Nearby St. Croix is separated by a shelf break and a trench with depths of over 4,000m called the Virgin Islands Trough. This bathymetry feature raises the question of whether or not offshore St. Croix waters mix with those of the Puerto Rico shelf and allow for the transport of fish larvae. A NOAA oceanographic survey of the area in April 2017 provides an opportunity to test this hypothesis with current physical data by releasing 20 drifters as well as 28 CTD and 24 XBT probes. The temperature, salinity, and drifter motion data collected in terms of position and time will be used to evaluate the existence of vertical mixing along the shelf break, and to a lesser extent, surface eddies. For a more complete picture, the original data will be supplemented

and compared with drifter, CTD/XBT, and mooring data from previous missions. The results will open a line of inquiry into the environmental and biological implications of having both the Hind Bank and Grammanik Bank fish spawning protection areas on the Puerto Rico shelf.

Improvement of Rice Cooker with Arduino

Pi Yan

Faculty Mentor: Professor Alfred Levine
Department of Engineering Science and Physics

Cooking perfect rice requires that we can control the heat supplied and temperature at different time. In the old time, we put the rice and water into the pot, heated on a stove until it is boiling and then turn down the heat. One problem it is inconvenient to manual adjust the heat. Another problem it is difficult to predict the right amount of time need to cook the rice at different cooking stage. We are designing a microcontroller to help monitoring the temperature of the cooker and varying the heat applied. In our design, we use the waterproof temperature sensors (DS18B20) to sense the temperature of the pot to produce a signal when the temperature of the pot reaches a predetermined value. The microcontroller can control the relay to adjust the heater on or off with the feedback temperature signal. Our system will decrease the energy loss during the cooking process. With our improved rice cooker, we can be able to cook different type of rice in the better way.

ENGLISH

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

POSTER #21

Radioactive Women: The Radium Girls as the Foremothers of the Struggle for Women's Health Rights

Rebecca Arciprete (Macaulay Honors College)

Faculty Mentor: Professor Matt Brim
Department of English

Radioactive Women: The Radium Girls as the Foremothers of the Struggle for Women's Health Rights examines how women's health violations and the legal fight for change have evolved over time. It focuses on a thorough examination of the Radium Girls, women who worked with radioactive paint in the early twentieth century but were not informed of the negative health effects and who, consequently, suffered and died unjustly. The ensuing court cases resulted in a number of improvements in workers' safety and rights. This project goes on to look at more modern cases in which women organized to change laws and policies that negatively affected their health, seeing the Radium Girls as their foremothers.

POSTER #30

Historical Closure: Closing Cultural Gaps

Marcus Del Valle

Faculty Mentor: Professor Lara Saguisag
Department of English

Scott McCloud defines closure as the "phenomenon of observing the parts but perceiving the whole." Within graphic narratives (comic books, manga, graphic novels, etc.), closure occurs inside the gutter – the blank space in between panels. When closure is performed, we understand further how images are both connected and move plot forward. Understanding closure is necessary for the literacy of graphic narrative, like all literature. We perform closure outside graphic narrative when we watch television and predict what may happen next through foreshadowing or while puzzling together pieces of information in a novel. If we understand closure to be the process of filling in the gaps between pieces of information, then we understand that performing closure increases our understanding of the information. What kind of closure must be performed for information that has historically been silenced or just left out? That kind of closure is what I call "historical closure" which is the process of (re)building cultural contexts and gathering information to further understand omissions in historical narratives. Through an independent study completed with Professor Lara Saguisag this past semester I examined the graphic novel Nat Turner, discovering the theory and potential of historical closure. Kyle Baker created a publishing company to gain artistic freedom in the creation of the Nat Turner narrative. By claiming ownership of the means of creation and dissemination, appropriating black caricatures that were popular in the nineteenth century, using old typefaces and retelling a tale of a murderer as a revolutionary Baker creates a nearly wordless narrative which performs historical closure. My research project will build on my theory of closure through Nat Turner and discover other graphic narratives that do the same. This research project will also consider the sociology of the authors of these works and its importance when creating culturally relevant narratives. I will examine how comic books, manga, and graphic novels represent characters of color and their struggles throughout everyday life. My work will thus build on studies of graphic narratives, literature, racial and ethnic studies, and education.

P O S T E R   # 2 2 2

US and Russian Involvement within the Syrian War

Md Zahirul Islam

Faculty Mentor: Professor Christine Martorana
Department of English

In this research project, the civil war in Syria will be analyzed through a conclusive research method. This war has gotten the superpowers of the world fighting one another, namely Russia, the United States of America, and their allies.I will scrutinize the war by naming roles US and Russia are playing in Syria and provide statistics, quotes, videos from news sources and other forms of evidence to establish their involvement. I will then explain why and/ or how they are playing these roles. Here, several leading theoretical explanations will be established as to why the US and Russia are involved in a foreign war. A popular explanation for Russia's involvement is obtaining or maintain geopolitical power. They fear any anti-Russian nations or groups from taking over Syria due to its proximity and keeping in mind Russia's naval military base in Syria. American politicians are divided and skeptical regarding Syria's crisis. For instance, Dick Chaney and other conservatives recommend the US to have direct military intervention, while others oppose this view due to recent atrocities of direct military intervention in Afghanistan and Iraq. Lastly, I will look at Russian and American media coverage of the war and provide a critical analyzes of media illustrations that shape public opinion. Russian media tends to lean towards justifying their direct involvement in the war and does not show much empathy and compassion for the civilians of collateral damage. On the other hand, American media outlets tend to focus more and promote a liberal point of view; in other words, they justify US involvement based on protecting humanitarian rights, seeing it as a moral obligation, and promoting democracy around the world.It is concluded in this research, from constructivist point of view, the United States are in a complex dilemma regarding the Syrian war. Russia is supporting the Syrian government against ISIS, America and its allies, and other rebel groups trying to topple the Syrian government. America is backing rebel groups by funneling money, weaponry, and training. To end all the chaos, one solution for a peaceful resolution is to come to an agreement based on empathy among the countries intervening in the war to exit and leave the affairs of Syria to its own people.

P O S T E R   # 6 6

Misrepresentations of Black Male Youth: Confirming Negative Stereotypes While Trying to Dispel Them

Tayla Lugo (The Verrazano School)

Faculty Mentor: Professor Lara Saguisag
Department of English

In Coe Booth's novel Tyrell, Booth tackles the idea of what it means to be a black male adolescent. Booth is consistently trying to eliminate the negative stereotypes about young black males; however, she begins to confirm the very stereotypes that she is trying to dispel. Unfortunately, current young adult literature fails in fulfilling the needs of black adolescent males and affirms the negative stereotypes that are unjustly placed upon them. Booth's use of language, along with her attempt to give her main character, Tyrell Green a sense of agency is removed at the end of the novel. Booth's novel can be considered street lit, which may satisfy readers because it does not sugar coat or tie up Tyrell's life in a neat little bow. In fact Tyrell is also marketed as young adult literature, which complicates the function of the genre because Tyrell does not affirm every black male's reality. Many African Americans are unable to find themselves in this book and cannot identify with the main character's life experiences. Instead of writing an uplifting novel about a black protagonist who

successfully pushes against negative social expectations, Booth creates a homeless black character who fails in challenging these negative stereotypes. Furthermore, through an in-depth analysis of Tyrell, I am going to show how this novel is not an accurate portrayal of the black experience for every black adolescent male. The results show that current trends in YA literature continue to preserve and sustain the stereotypes instead of challenging them. By providing black adolescents with books that they can relate and identify with, they will be able to discover who they are and understand that their existence is valued

Models of Sexuality

Christopher Morabito (Macaulay Honors College)

Faculty Mentor: Professor Matt Brim
Department of English

Many people view sexuality as a static binary. Individuals are labeled as either gay or straight based on whether the sex of their romantic and sexual partners is the same or different from their own sex. Yet, in truth, sexuality is a far more dynamic and complicated construct. Throughout the history of sexuality studies many theorists have developed alternative models to the gay/straight binary. This study explores the strengths and shortcomings of several key models of sexuality including the Kinsey Scale, the Klein Sexual Orientation Grid, and Marjorie Garber's mobius strip model. Each model attempts to address the complexity of sexuality in a different manner, such as by making it a spectrum, including changes over time, including desires as well as actions, and including multiple dimensions. However, each model fails to completely represent sexuality and all of its complexities. Ultimately, this study attempts to create an alternative model of sexuality that remedies the various shortcomings of the models before it. Most notably, this model, called the "Three Dimensional Lattice Model" looks at the dynamic interplay of personal, cultural, and societal factors as the three factors necessary to understand sexuality. While this model is not without its own shortcomings, the alternative approach that it provides serves as a valuable addition to progressive theoretical models of sexuality.

Sex & Disability

Alyssa Morganti, Rebecca Ritz, Janell Yik

Faculty Mentor: Professor Matt Brim
Department of English

The overall purpose of our research is to design a course on sex and disability based on the under-representation of such courses in both queer and sexuality studies. This course, titled "Sex and Disability," is designed to be accessible for all CUNY students, and it employs critical pedagogies that include analyzing works by and resources for folks with disabilities. Our research methods consisted of locating and evaluating sources that are not only accessible to all students but also reputable. A majority of our course texts are non-peer reviewed journal articles or books because we value experience narratives by people with disabilities over abstract (and often able-bodied) theory. The sources will uncover the history of the relationship between sex and disability and explore how disabilities impact the sex lives of disabled folks. As the topic of disability and sex is broad, the course will consider links between sex and disability locally and globally. This will include the

interconnected subtopics of fetishization and dehumanization, sexual health, navigating sex, sex communities, queerness, and sexual abuse and healing processes within the disabled community. Our course's goal is to normalize the need for a connection between sex and disability and promote learning in the subject area throughout CUNY.

P O S T E R   # 1 5

Shaping the Future Minds

Annalise Puntorno (The Verrazano School), Michael DiNicola (The Verrazano School)

Faculty Mentor: Professor Gloria Gianoulis
Department of English

Our collaborative research project will consist of comparing and contrasting classic fairy tales with more modern tales. In the Women's in Literature class that we just completed, we learned how fairy tales reflect society during the time that the tale is written. Fairy tales can teach people what a society valued, how it was structured, and how it affected the people living during that time. Fairy tales are grounded in magic and the desire for love. But if we analyze a fairy tale more closely, we will discover underlying meanings behind the fairy tale. Christian Zimmer once said, "To amuse oneself is to disarm oneself", meaning that when people are being entertained they are letting their guards down not expecting to learn, but in reality, that is when they learn the most. When adults read classic fairy tales in the 18th Century, for example, they learned how to act, dress, and what was expected of them. As for when a child reads a fairy tale they are learning what to value, what their goals should be, and the behaviors they should have. Fairy tales have been a teaching tool that was hidden inside an enchanted tale since the first fairy tale "Cupid and Psyche" (2 BCE) and continues today with Disney films. Our research will explore what lessons and values were present in classical fairytales and how are they different or similar to the new values and lessons of a modern-day fairy tale. We will be researching the themes of the fairy tales and the resolutions and how the modern fairy tale is shaping today's youth and if it is in a positive direction. Also how new forms of media such as music, models, and gender stereotyping has changed.

The goal of this research is to show that fairy tales are changing with the changes in society. The fairy tales evolve just as societies do. The main goal is to try to prove that modern fairy tales are trying to showcase the power and strength of a female that extends beyond beauty. Also, we aim to explore the results of a fairy tale having a strong independent heroine, who saves herself or man, and how this fairy tale structure will influence society and the thought processes and social values of the children reading them.

P O S T E R   # 2 2 4

Exploring the World of NYC's Transgender Men

Shantel Rowe (The Verrazano School)

Faculty Mentor: Professor Ava Chin
Department of English

As of June 2016, an estimated 1.4 million adults, or 0.6 percent of the total population, do not identify with the gender they were assigned at birth. I was inspired to cover this topic not only because of its growing relevance today, but because of a personal friendship I have formed with a transgendered young man. Through our interaction and being placed in his world—with his group of friends, I have learned significantly more about the transgender community and culture.

Some of the men I interacted with were, stealth, or closeted transgendered men, while others had no problem identifying their birth assigned genders. The most important element which surrounded all our interaction, was terminology. Terminology is indicative of respect and acknowledgment of these men's' identity and comfort zone. Therefore, through further outside research, I had to educate myself on the proper term usage to successfully form connections and relationships within the community.

Understanding the usage of testosterone, chest binding, and genital packing, were just a few of the major physical and emotional elements which allowed me to respect the boundaries and identities of the men I interacted with. Another key dynamic I witness within the community, was how these men interact with each other. Many of them felt as if they were going through a second puberty, the first of their manhood. Whether it was the sprouting of a new chin hair, or the deepening of their voices, these moments that seem minuscule to many cisgender (not transgender) individuals, are life changing to trans individuals.

I believe my research has respectfully and realistically portrayed the everyday lives of the individuals in this subculture of transgender men in New York City. While being out is often always celebrated, the reality is that many individuals don't have the liberty of openly living their lives, nor do they choose to. Whether one is stealth or out, their identity is not negated or diminished. Each of these men were brave in their dialogue and interaction with me, and to share these stories, in a creative piece, that can be understood/informative to an everyday audience adds to the progressive talks surrounding the transgender community.

ENGLISH/LINGUISTICS

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

POSTER #98

Back Vowel Merger in New York City English among Mexican-American Women

Steven Brandel Arriaga (The Verrazano School)

Faculty Mentor: Professor Christina Tortora
Department of English/Linguistics

As part of the Corpus of New York City English project (CoNYCE; Tortora, Cutler, Haddican, Newman, Santorini, & Diertani, in progress), this study analyzes the possible merger of the three low back vowels found in "lot," "palm," and "thought," in New York City English (NYCE). According to Newman (2014), some NYCE speakers exhibit a distinction between these three vowels, a phenomenon referred to as "the 3-D state" (Johnson, 2010). Three other possible states are exhibited among English speakers: (a) the Northeastern New England state (where "lot-thought" are merged to the same vowel, with "palm" kept distinct); (b) the MAIN state (where "lot-palm" are merged to the same vowel, with "thought" kept distinct); and (c) a 3-M state, where all three vowels in "lot-palm-thought" merge, such that "lot" absorbs the other two vowels, resulting in a one-vowel system; Johnson (2010). Although these states are salient and associated with Northeastern New England, the Inland North, Mid-Atlantic, South, and the West, Newman (2014) proposes that these vowel systems, in addition to the 3-D state, are possible for NYCE speakers (Newman 2014, 2016). Previous studies demonstrate that although a significant amount of speakers of NYCE maintain the 3-D state, there is an indication of a merger to the MAIN state (Newman, 2016). The data for this study consist of two informal interviews recorded between August and September 2016 with two native speakers of NYCE who share similar demographics: both participants are first-generation Mexican-American middle class female college students between 21 and 25 years old who also speak Spanish. Their multilingualism and Latino background may result in a 3-D state distinction of back vowels. This study, based on Newman (2016), determines whether these speakers make a distinction between these vowel sounds or if a merger is occurring, which may indicate a general merger among NYCE speakers.

POSTER #70

Speech-based Biomarkers for Autistic Traits in the Neurotypical Population

Alexandria Boachie-Ansah

Faculty Mentor: Professor Jason Bishop
Department of English/Linguistics

Autism Spectrum Conditions are just that--spectrum conditions--where different individuals fall on different places on a continuum. Research has shown that this continuum may include some of the neurotypical (i.e., general) population as well. That is, healthy individuals also exhibit some of the social and cognitive characteristics that define autism, although to a much milder degree. In this study, we attempt to identify whether there is a correlation between these "autistic traits" in the neurotypical population, and variation in the use of vocal pitch. Much previous research has shown that the use of pitch is highly variable in the clinical population; we find similar correlations between the use of pitch and autistic traits in a neurotypical group of speakers.

POSTER #160

Vowel and Consonant Production in Post-Glossectomy Speech

Toniann Grossman

Faculty Mentor: Professor Christina Hagedorn
Department of English/Linguistics

Using real-time magnetic resonance imaging (rt-MRI), we investigate how the glossectomy procedure, oftentimes undergone by patients with advanced oral or tongue cancer, may impact speech production. This type of procedure typically limits the mass and mobility of an individual's lingual tissue, thereby affecting the articulation of both vowels and consonants. rt-MRI is a particularly useful tool with which to investigate post-glossectomy speech, given that it allows for dynamic visualization of the entire vocal tract during speech, with simultaneous acoustic data acquisition. Using rtMRI and acoustic data from two partial-glossectomy patients producing short words containing all American English vowels, along with a phonetically balanced passage, we set out to determine (i) whether vowel acoustics produced by patients differ from those produced by typical speakers and (ii) whether patients exhibit compensatory mechanisms for consonant sounds that they struggle to produce, post-operatively. Vowel charts, reflecting first and second formant frequency values, for each patient, are contrasted with those of typical speakers, and are shown to reflect the particular area of lingual resection for each patient. Furthermore, compensatory articulations produced during consonant production are identified, demonstrating that movements of residual vocal tract components can be modified to produce sounds that are acoustically similar to, though articulatorily distinct from, target sounds, post-operatively.

POSTER #44

Creaky Voice: Coarticulation, Prosody, and Gender Differences

Jessica Spensieri (The Verrazano School)

Faculty Mentor: Professor Jason Bishop
Department of English/Linguistics

Creaky voice is a current, widely-researched aspect of speech. It refers to when speech experiences a drop in fundamental frequency, and the waveforms can be viewed as aperiodic/irregular. In this study, I expand upon previous research by examining the relation between the sources of creaky voice and gender, namely whether one gender or the other displays more creakiness, and who exhibits which type more often. Past studies have shown that both men and women produce creaky voice, but that women tend to do it more often than men. The current study takes an acoustic approach to determining which gender demonstrates more creaky voice.

POSTER #127

The Phenomenon of 'r-intrusion' in Staten Island English

Christian Winston

Faculty Mentor: Professor Christina Tortora
Department of English/Linguistics

In this project, I examine a distinct dialect feature found in Staten Island English, namely "r-intrusion." R-intrusion is a phenomenon whereby speakers insert the segment [r] in certain phonological environments (e.g., "That was a good idea[r]"). There is limited research on r-intrusion in English dialects at the present time. In their study on the English of New Zealand, Hay & Maclagan (2010) examine the structural contexts in which r-intrusion occurs, and find the phenomenon to be prominent in younger speakers, while practically non-existent with older speakers. In Fall 2016, I conducted a study with two colleagues in which we examined the characteristics of r-intrusion in Staten Island English. In observing sociolinguistic factors, we found the opposite of the age-effect that was found in New Zealand English: older speakers were more likely to exhibit r-intrusion than younger speakers. In my previous study, I used a list of sentences to induce r-intrusion with subjects. This project is a follow-up study in which, in addition to testing for the age factor, I employ an entirely new set of test materials intended to probe structural environments not previously tested, thus expanding the data set. The environments tested are: (a) intervocalic; (b) syllable final; (c) word final; (d) morpheme internal vs. at morpheme boundaries. Thus, this project aims to provide a novel empirical understanding of the phenomenon both in terms of its structural and sociolinguistic predictors.

POSTER #88

Bare Nouns in Appalachian English

Ewa Wojciechowska (The Verrazano School)

Faculty Mentor: Professor Christina Tortora, Beatrice Santorini, University of Pennsylvania
Department of English/Linguistics

This work focuses on the little-studied phenomenon of non-generic "bare" count nouns in English. A sentence such as "Dog didn't have any sense" (with the non-generic, specific interpretation "That dog didn't have any sense") contains the bare count noun "dog," that is, a noun which is not preceded by any determiner (such as "the" or "that"). Although such "determinerless" or "bare" nouns are considered to be grammatical in the Slavic languages and in Old French, they are claimed to be ungrammatical in English. However, research by Spears (2007) demonstrates that such bare nouns are common in vernacular Englishes, such as African American English. To expand on Spears' findings, my project aims to provide an empirical investigation of the linguistic phenomenon of bare nouns in Appalachian English, with an eye towards deepening our theoretical understanding of bare nouns, also in relation to the Slavic languages (primarily Polish and Russian). My primary data source for Appalachian English is the "Audio Aligned and Parsed Corpus of Appalachian English," created by Tortora et al. (to appear). The findings that result from my study will inform previous theories of the syntax of bare nouns cross-linguistically, and more specifically, of noun phrases in English.

GIS SERVICES

CONFERENCE LOCATION:
BOTTOM CENTER

POSTER #144

Bigbelly: The Future for CSI's Waste and Recyclable Collection

Genevieve Buccigrossi (Macaulay Honors College)

Faculty Mentor: Professor Nora Santiago
Department of GIS Services

The College of Staten Island has 204 acres to deal with in regards to the collection of waste and recyclables. This project focuses on Bigbelly garbage cans and what they can do for the campus. They are a solar powered garbage can that can be used to make the collection process more efficient. Bigbelly compresses waste so more can be piled into the can. It comes in three different styles; one for compost, one for recyclables and one for the landfill. Bigbelly can hold up to 600 gallons of waste and only needs two hours of solar energy every two weeks to keep functioning. When the garbage can is at maximum capacity, a text message is sent via a wifi hotspot to alert an employee that the garbage needs to be collected. Bigbelly saves money, reduces litter, increases recycling, conserves fuel, handles five times as much waste, reduces carbon footprint, eliminates waste overflow, frees up labor, and keeps out pests. They can benefit any area around campus by keeping it clean, making CSI more sustainable and reducing the amount of times garbage has to be picked up. I will use Geographic Information System (GIS) to examine where each garbage can is currently located on the campus and compare it to average foot traffic to then determine where each Bigbelly should go. The data will be based on frequency of usage. By utilizing GIS, the Bigbellys can be strategically placed in order to be better utilized and strengthen our sustainability even more.

POSTER #145

Green Cafeterias: The Future for CSI's Dining Services

Amanda Schettini (Macaulay Honors College)

Faculty Mentor: Professor Nora Santiago
Department of GIS Services

As the largest CUNY campus, at 204 acres, the College of Staten Island should strive to be an example on sustainability to other college campuses as well as the rest of New York City. There are many simple things that the College of Staten Island can do to become more sustainable. This project explores three different actions that CSI can take to make this possible. One of the first places to start is with the food services offered on campus, such as the Campus Center Cafeteria, Park Café Restaurant, and the Library's Bits and Bytes Café. The first idea is to initiate a program that would engage students to bring their own mug into school to get their daily drink. We would call this the BYOM (Bring Your Own Mug) program and would give students an incentive to bring their mug with them every day by offering them a discount on their coffee or tea. The next idea would be to start a composting program to collect all the organic food waste made by the campus' dining services. This would greatly reduce the amount of waste that the campus creates and would make nutrient rich compost as a result that can them be used in the campus' garden. The last idea would be to swap out all plastic utensils with biodegradable ones in all of the places on campus that sell food. By switching to a biodegradable type of cutlery, the environment will see less plastic in landfills, and the college will see a great improvement in our initiative to become more conscious of our environment.

P O S T E R   # 1 4 3

Solar Canopies: The Future for CSI's Parking Lots

Timothy Sweeney (Macaulay Honors College)

Faculty Mentor: Professor Nora Santiago
Department of GIS Services

Solar panels have become increasingly popular due to their inexpensive costs for energy and maintenance once installed. Solar panels that are installed above parking lots are called solar canopies and installing them at the College of Staten Island will benefit our campus in many ways. The College of Staten Island is the largest campus in the City University of New York system at 204 acres. A large portion of that acreage is used by parking lots made up of approximately 3,000 spaces to accommodate the 6,500 students who have paid to park their cars on campus. Because the parking lots use so much space, giving them another purpose will benefit the campus as a whole. With the addition of solar canopies, there would be an immediate drop in energy costs amongst many other benefits. Solar canopies have provided other universities in our area with up to 63 percent of their energy needs, saving them hundreds of thousands of dollars or more each year. In addition to their positive financial benefits, solar canopies also offer protection from the elements to cars parked beneath them and an option for increased lighting, which will make the campus safer for students and faculty to walk at night. Perhaps the most important benefit that will come from the installation would be an enormous reduction in the carbon footprint of the College of Staten Island. By switching over to solar power as a significant source of energy, less fossil fuel will be use and CSI will take a large stride in becoming more eco-friendly.

HISTORY

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

From The Camps to the Motherland: The Process of the Holocaust Survivors' Acceptance into Israeli Society

Brooke Dahl

Faculty Mentor: Professor Susan Smith Peter
Department of History

The Jewish people have been very important through much of history. From their earliest days to the modern era, the Jews, the Israelis, the Israelites — the names we know these people by — have found themselves as the target of many an attack, but also as the object of certain ardent affections. Perhaps the most awful of the ill-intended attempts was the Holocaust of World War Two. This heinous event, carried out by a hateful dictator, oversaw the murder of six million Jews in Europe. This devastating time period made known to what the Book of Deuteronomy defines as God's chosen people that they were no longer safe. For the many immigrants who went before them, the prospect of reentering a land that was once theirs, and according to the Bible, still a place set apart for the descendants of Abraham, was the driving force behind immigration. But for these, it wasn't just for the glory of regaining their nation. In fact, for this particular group of immigrants, the lure of Israel was rather simple: acceptance. The Holocaust survivors who had experienced a world of pain and horror in the war, coupled with strong antisemitic discrimination both before and after it, were in need of a place where they could belong and be free. But, the current keepers of "The Promised Land" were not as welcoming as one might have expected. The previously immigrated Jews, or the Old Yishuv, did not initially embrace their broken brothers — at least, for the most part. This occurrence was due to many factors. Firstly, a major hindrance to their acceptance arose from the instability within Israel at that time, as civilians were recovering from war and in a constant state of protecting and establishing their new nation. Additionally, there was the glaring problem of the elite status that the Old Yishuv had obtained from having already immigrated into Israel (or Palestine, as it was then deemed), and the struggle for new immigrants to climb their social and economic ladder. Another factor the promoted the uneasy settling into the new culture and society was the survivors' own cultural preferences and post-war state of mind that influenced their resistance to align with the values of the new nation. Finally, until later events and knowledge surfaced, there existed an unclear global understanding of what the Holocaust actually was, and in Israel in particular, there was a perception of the survivors as weak, which kept the Old Yishuv from fully grasping the need to embrace these torn and tattered immigrants.

However, this all seemed to dissipate at the Adolf Eichmann trial of 1961, as global awareness of the Jewish tragedy of World War II grew and the nation of Israel acknowledged the suffering of the survivors and their common identity as Jews. One possible reason for this was that the Old Yishuv's perception of them had changed to one more favorable for being a part of a new country in need of its citizens' strength. In addition, another push towards their acceptance may have come from the Israeli connection with a Diaspora-born Zionist martyr named Hannah Senesz. Finally, the increased stability of the State of Israel is another possible reason for their acceptance of the survivors. After this, the brave Jews who had made it through the terrors of the Holocaust were finally embraced in Israeli society.

POSTER #183

Alexander Hamilton: The Abolitionist Founding Father or the Egotistical Politician?

Jennifer Giordano (The Verrazano School)

Faculty Mentor: Professor Jonathan Sassi
Department of History

The modern phenomenon surrounding Alexander Hamilton as the abolitionist Founding Father is directly correlated to the impact of Lin-Manuel Miranda's Broadway musical, "Hamilton" and Ron Chernow's inspiring biography, Alexander Hamilton. In the musical, Miranda utilizes the relationship between Colonel John Laurens and Alexander Hamilton to indicate Hamilton's encouragement of the abolition movement. In Chernow's biography, Hamilton's childhood on the island of Nevis along with his economic policies, which provided for the gradual move away from agriculture and towards industry, reflected his intolerance for slavery. Nevertheless, Alexander Hamilton's affiliation with abolitionism cannot be considered his principal concern. Rather, Hamilton's confined action, checked by his much more active involvement in other areas, simply suggests concern over the future of slavery and how it would impact American policy, but not a deep engagement with the early abolition movement. A thoughtful leader, who approached his legacy with careful consideration and obsessed over the intricate details of how history would represent him, Hamilton focused his tremendous talent and intelligence on creating a template for the United States financial system. Hamilton encountered slavery throughout his life and career, yet chose to assert his passion in other areas, a decision fueled by his own self-interest. Through seven different episodes stemming from both his public and private life, beginning with his upbringing on the islands of St. Croix and Nevis and following his life and career chronologically, this paper shows how Hamilton repeatedly played only a limited role in the abolition movement and how his actions cast doubt on whether slavery was a primary concern of his at all.

MANAGEMENT

CONFERENCE LOCATION:
BOTTOM CENTER

POSTER #75

Games in the Classroom: Do Students with a Higher Degree of Consumerism Benefit More?

Alexa Moran

Faculty Mentor: Professor Heidi Bartels
Department of Management

As time passes more students today now than ever before are more attracted to and believe in the idea of consumerism (Nordstrom et al. 2009). In this research project we study if students can benefit from playing games in the classroom. Materials for the final exam were reviewed using a Jeopardy! game, and students were subjected to a subject matter test before and after the game. We found that test scores of almost all students improved. We also found that students whose understanding improved dramatically, (i.e., more than doubled their score) had a higher degree of consumerism. Although many see consumerism as a negative effect in the classroom, this research project shows that even students with a high degree of consumerism can see major improvements in the classroom when approached with popular educational tools.

MARKETING

CONFERENCE LOCATION:
BOTTOM CENTER

Music and its Effects on Shopping Behavior

Jacqueline Barbarino

Faculty Mentor: Professor Dan Zhang
Department of Marketing

Ever wondered why the stores you go into are always seem to be playing your favorite song? The music playing in that store or restaurant you are in is not just by coincidence. Through the five senses companies have the power to influence consumers' purchasing decisions. Certain types of music can trigger certain behaviors. Actions resulting from the music can depend on genre, volume, and tempo. The present research aims to determine how exactly music influences shopping behavior and to discover what decisions are made behind selecting certain songs on a company's playlist.

POSTER #124

Developing Multidimensional Dynamic Credentials to Manage Risk and Trust

Jia Yuan Chen (Macaulay Honors College)

Faculty Mentor: Professor Soon Ae Chun
Department of Marketing

Fulfilling job tasks requires competent and trusted employees. Employees show this required competency and trustworthiness by presenting their credentials such as education, experience, certifications, physical exams, etc. A mismatch between job requirements and credentials can create higher risk levels. The outdated or obsolete credentials can also create a false sense of competency, thereby creating a higher risk in job fulfilment, and risking compliance requirements. Often these static credentials are used to make decisions on granting access to jobs, tasks, and valuable resources. For instance, a person is assigned a job based only on their previously earned certifications, degrees, or accolades, but not their current physical conditions, emotional or psychological states, or social behaviors.

In this study, we present a method of building dynamic credentials that can signal the current competencies and trustworthiness for better task assignment procedures to reduce risks in job-related accidents or injuries. Making decisions on task assignments or granting access to valuable resources will be based on this real-time knowledge obtained from various data sources. This paper explores the usage of Social Media data, Biosensor data, and Audio/Visual data to generate multi-dimensional dynamic credentials that can be used to detect and analyze levels of risk. We will design a detection system that utilizes the dynamic credentials to generate an alert based on the perceived level of risk, to help determine whether an employee should be granted access to certain tasks that day, and increase the general level of safety.

POSTER #13

Marketing to Millennials: The Advertising Effects through Social Media

Toufic Eid (The Verrazano School)

Faculty Mentor: Professor Daniel Gagliardi
Department of Marketing

Social Media is a worldwide platform that allows people, businesses, and governments to share the best ideas on business, society, and culture. Not only does it provide people with the latest news and information, but also helps brands relate and market to millennials. For my capstone project, I have chosen to primarily focus on the topic of marketing to millennials: the advertising effects through social media.

Over the years, generations have changed dramatically. For one thing, consumers certainly do not do things the same as they did years ago. Millennials today express themselves through different brands using social media. Through primary research, a clear explanation will be developed on why millennials choose to express themselves through brands. In addition, a clarification of how brands use social media to implement these affects will be established.

Brands play a big role in millennials lives. They allow them to express themselves and even tell them where they fit in society according to "What To Know When Marketing To Millennials". Furthermore, millennials are becoming the main concern of most businesses. They want brands to have a personality that they like and can relate to. For example, a consumer might purchase from Nike in order to relate to the Nike analogy of "Just Do It", which represents active and healthy consumers.

This capstone project will allow me to study two different topics; on the millennials side, my goal is to know why millennials choose specific brands and if social media from brands has an impact on their decision. On the brand side, my goal is to identify how brands implement these effects on social media and how they market towards millennials.

Through extensive surveys and focus groups, primary research will help discover what millennials value and why they are willing to pay extra for a particular brand. Furthermore, I will conduct observational research by interviewing local brands and consumers in hoping there will be an answer to these effects on both ends. I look forward to working with Professor Gagliardi in analyzing the results.

POSTER #141

Privacy Detection in Tweets

Mark Perelman

Faculty Mentor: Professor Paolo Cappellari
Department of Marketing

Anonymity on the internet created a cyber society where users can be more open about their ideas. The user is responsible for what information gets posted to the internet. Without realization, a myriad of users give away private information that can accessed by anybody who access to the internet. This private information can cost an individual their identity. This study is concentrated on classifying tweets using two classes; private and not-private. Using machine learning, we are able to find patterns in text which are used to classify future text. This process requires data mining with the complement of data science.

Using a large corpus of labeled tweets, we can train the machine to differentiate between private and non-private tweets. Detecting user privacy can be used to further research user safety in our ever-growing cyber society. Our goal today is to detect whether a user's post is private or non-private. Privacy is not enforced on the internet so adding flags for user can be beneficial for the users. Unaware to the user, posting something as trivial as date of birth or address can result in breach of security. Privacy protection starts at the user so by helping the user directly we can make the internet a safer place to surf.

P O S T E R   # 4 6

Why do Consumers Purchase Name Brands over Store Brands?

Ashley Perry (Macaulay Honors College)

Faculty Mentor: Professor Dan Zhang
Department of Marketing

Consumers are faced with a wide variety of options when purchasing products. One of the decisions a consumer must make when purchasing a product is whether they will purchase the name brand version of a product or the store brand version of a product. In most cases, there is little or no difference between these two products, except for the price. According to Consumer Reports, filling a shopping cart with store brands saved consumers an average of thirty percent per shopping trip (2012). If store brand products are comparable in quality and have a lower price, why do consumers still insist on purchasing name brand products? With secondary research method, the present research addresses this question through exploring consumers' purchasing decision processes and examining differences in cultures.

MATHEMATICS

CONFERENCE LOCATION:
BOTTOM CENTER

POSTER #40

A Study of Taxicab Drivers' Times between Trips

Timothy Sweeney (Macaulay Honors College)

Faculty Mentor: Professor Mikael Vejdemo-Johannson
Department of Mathematics

With over 20,000 taxi-cabs on the road and offering tens of thousands more jobs, taxi-cabs have a large presence in the day to day life of New Yorkers. This research looks at the data of the green taxi-cabs in New York City to determine whether or not the idea of a reservation wage can influence the length of time worked and the amount of effort put forth by a tax-cab driver. A reservation wage can influence the length of time a taxi-cab driver works because they achieve their goal wage with time left in their shift. From here, do they stop working? Or do they continue with a lesser effort put forth? This study will look to examine the current relationship between length of time between trips and the total wages made by each taxi-cab driver in New York City. Based on the findings, a correlation between the average length of time between trips and the effort put forth by the driver, it can determined if the idea of reservation wage applies in the New York City taxi-cab market.

POSTER #130

Go with the Flow: a Numerical Approach to the Inviscid Burgers' Equation

Bakhtiyar Zakirov (Macaulay Honors College)

Faculty Mentor: Professor Allen Tesdall
Department of Mathematics

We work with the inviscid Burgers' equation, a scalar hyperbolic conservation law which provides a model for the one-dimensional Euler equations of gas dynamics. As part of a larger program aimed at investigating discontinuous solutions of multi-dimensional problems for systems of hyperbolic conservation laws, we numerically solve Riemann problems for Burgers' equation. We implement high-order numerical schemes in the Python language, and evaluate and compare the results from the different methods.

MEDIA CULTURE

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

POSTER #181

How the Advent of the Internet Aided the Evolution of Marketing

Gabrielle Viso (The Verrazano School)

Faculty Mentor: Professor Christopher Anderson
Department of Media Culture

Over the course of the last century, the field of marketing has made incredible strides. Advancements in technology have profoundly aided this progression. The advent of the internet has made it necessary for marketing to adapt and changed the way advertisers promote products in order to make a profit. Marketing is no longer trying to get the attention of the passive masses; it is tailored to the wants and needs of a specific audience. For online advertising, they examine the individual rather than a classification based on demographic characteristics. Advertisers benefit from the Internet user "liking" and "sharing" content from a television show on social media. It is essentially free advertising. Marketers exploit this now active audience by monitoring their online habits and "likes." This data is sold to elite marketing corporations in order for them to adjust their advertised product to make a profit. This makes the audience not only an active viewer, but a consumer and a commodity as well. This brings up the question of privacy and what the future of marketing will bring.

POSTER #74

One Island to Another

Pasini Withanage

Faculty Mentor: Professor Edward Miller
Department of Media Culture

As an international student who has travelled thousands of miles to pursue a degree at an American university, the fear of homesickness was definitely a top concern. However, I was able to quickly adapt and feel at "home" after realizing how large the Sri Lankan diaspora in Staten Island is. I live with a Sri Lankan family, eat Sri Lankan food, watch Sri Lankan teledramas, speak Sinhalese (my mother tongue) and most importantly, I am able to keep in touch with my loved ones back home with a touch of a button on my phone/computer. The primary goal of this research project is to explore the intertwining correlation between communication technologies, globalization, and diasporas -- specifically the Sri Lankan diaspora in Staten Island. It could be argued that diasporic communities are never settled in the new land, which is usually far away from their home country, as they are always trying to reconnect to their roots. However, through the emergence of the web 2.0 and social media, accessing media such as the news is almost instant. Hence, communication between the migrants and the home country is made easier in this day and age. Due to this exchange of information and media, how does the diaspora contribute to globalization? It seems that diasporic communities tend to encourage the exchange of culture between the home country and the settled country.

This project will explore 3 different ways in which there is an exchange of culture and goods: restaurants, grocery stores and shipping services. I will conduct interviews with Sri Lankan restaurateurs and entrepreneurs who own stores located along Victory Boulevard in Tompkinsville, Staten Island - also known as "Little Sri Lanka" - to determine how and why authentic products are significant to this diaspora. On the other hand, I will also interview the owner of a shipping company that offers shipping services specifically catering to the Sri Lankan community. This research project will showcase how a small community of people can create a global impact.

NURSING

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

POSTER #18

Healing Hands: A Detailed Look at Operating Rooms in Costa Rica

Sheriff Akanmu, AAS, RN, Rachel Barracato, AAS, RN (The Verrazano School), Sebastian Rodriguez Gómez, BS Nursing Student UNIBE, Costa Rica

Faculty Mentor: Professor Regina Lama
Department of Nursing

We observed the operating room in Hospital Dr. Calderon Guardia and researched articles that bring insight into the surgical experience of patients in Costa Rica. Upon entry into the surgical unit there were many policies and procedures that we had to follow. Some of these regulations were measures to prevent the spread of infection. Each operating room consisted of a scrub nurse, a circulating nurse, a surgeon and an anesthesiologist. We noted that the scrub nurse has the responsibility of assisting the surgeon by handing them the tools that they need and making sure each tool is accounted for at the beginning and end of the procedure.

The circulating nurse had the responsibility of accounting for each member of the surgical team before the surgery begins, documenting throughout the procedure, transporting necessary materials in and out of the operating room. There are many different aspects of surgery including the procedures, the surgical team, the room itself, and infection control measures. In this we will delve into each of these topics with a specific focus on nursing.

POSTER #38

Extracorporeal Membrane Oxygenation Treatment in the Critical Care Setting

Simona Attanasio, AAS, RN, Anna DeLeonardis, AAS, RN, April Scarcella, AAS, RN, Jamie Nichilo, AAS, RN, Marissa Citera, AAS, RN, Phyllis Rubin, AAS, RN

Faculty Mentor: Professor Regina Lama
Department of Nursing

The purpose of this project is to explore extracorporeal membrane oxygenation (ECMO). Extracorporeal membrane oxygenation (ECMO) represents an alternative method of pulmonary support for the critically ill patient with severe respiratory failure. The role of the registered nurse will be examined when caring for the patient receiving ECMO. This project will explore the advantages and disadvantages of ECMO as well as any complications the procedure may pose. Literature was used to find evidence-based practice related to this treatment. The literature review revealed that ECMO is becoming a more frequent alternative therapy in the critical care setting due to advancements in the technologies and procedures related to ECMO.

POSTER #118

Cancer Prevention in Communities

Crystina Baetz (The Verrazano School)

Faculty Mentor: Professor Arlene Farren
Department of Nursing

The purpose of this presentation is to describe a systematic review regarding cancer prevention. Cancer statistics for Staten Island (SI) are high and in some cases exceeds the rates reported for New York City (www.nyc.gov). Clearly cancer is a major health issue for the Staten Island community. Currently a project is underway to address prevention of two major health issues of importance to SI, specifically cancer and opioid addiction. The Staten Island Performing Provider System (SIPPS) has instituted a Healthy Neighborhoods Initiat ve. The College of Staten Island School of Health Sciences is participating in the initiative. As a member of the Nursing Department team working on cancer prevention, I have conducted a systematic review of the literature to inform the team's work related to strategies that promote cancer prevention in the community. This presentation will briefly describe the larger project, the systematic review methodology, results, conclusions, and implications for the project and community.

POSTER #227

Transcending the Bedside

Michelle Barinskaya, AAS, RN (The Verrazano School)

Faculty Mentor: Professor Barbara Schiano
Department of Nursing

Working in the high-pressure environment of the hospital presents emotional challenges to healthcare personnel, including nurses. There has been shown to be a significant prevalence of secondary traumatization, compassion fatigue, and burnout among nurses, leading to excessive turnover rates and diminished job satisfaction. Improper coping techniques with the sources of emotional distress subsequently undermine the quality of patient care provided. This research project introduces the practice of Transcendental Meditation (TM) as a prospective coping strategy for nurses experiencing emotional distress in the workplace. As part of a systematic review, 9 research articles were investigated on the mental and psychological effects of TM. The effectiveness of TM in other workers troubled by the effects of stressful environments and circumstances, such as those of military personnel and non-professional caregivers, were evaluated to best understand how and why this practice may be effective for nurses experiencing similar manifestations. The implications of installing private rooms for meditation purposes on particularly stressful hospital units, such as the Emergency Room, Intensive Care Unit, Hospice Unit, and Critical Care Unit, are also discussed.

POSTER #84

Termination of Pregnancy: The Controversy Continues

Erica Brunett, Kathryn Agner, AAS, Dziana Herasimenia, AAS, RN, Valerie Molinari, AAS, RN, Jaime Petrosino, AAS, Jennifer Raduazzo, AAS

Faculty Mentor: Professor June Como
Department of Nursing

Abortion is a preplanned termination of a human pregnancy, most often implemented in the first 28 weeks of pregnancy. Because of its controversial nature, abortion commonly elicits negative responses in regard to religion, morality issues, and cultural stigmas. Since abortion is the termination of an unborn human life, it is generally associated with murder and it remains illegal in various countries. Due to fear of cultural and the legal implications one may face, women achieve abortion precariously in secret and not always under optimum conditions. As a result over 22 million unsafe abortions are performed annually, five million of which result in disabilities from complications and 47,000 ending in mortality. With proper access to contraception and safe abortion practices, the risks and complications of the abortive procedures significantly decreases. When done within a safe practice with qualified health care professionals in attendance, abortion is performed through a medical (aka chemical) or surgical procedure. The most common medical and surgical procedures that are implemented are the ingestion of Mifepristone and Misoprostol or the dilation and evacuation (D&E) methods respectively. Both of these procedures require a skilled physician or health care professional to monitor the safety of the woman, and prevent further lifelong complications from occurring. The purpose of this poster is to present the current global status of abortion, identify cultural aspects, health care policy aspects, costs, and impact on the health of women. Nursing implications and considerations will be explored.

POSTER #16

Healthcare from a Different Perspective

Paige DePrimo, AAS, RN (The Verrazano School), Diana Tlatenchi, AAS, RN, Rocio Mora Tencio, BS Nursing Student UNIBE, Costa Rica, Gorhanny Torres Rojas, BS Nursing Student UNIBE, Costa Rica

Faculty Mentor: Professor Regina Lama
Department of Nursing

Throughout the world there are different forms of healthcare. One example of the different forms of health care, which is utilized in Costa Rica, is socialized health care. According to the Sarah E. Boslaugh, (2013) in her article "Health Care Systems Around the World: A Comparative Guide" socialized medicine is medical care that is directly provided to patients in medical settings that are funded by the Social Insurance Fund. Services that are available to these individuals include hospitalization, primary and specialist physicians, medicines, maternity care, dental care, auditory services, limited optometry services, and medical appliances. Costa Rica's philosophy on health care is that health should be accessible to every citizen, and even non-citizen, since it is a basic human right. Costa Rica's healthcare system currently consists of three different tiers, or rather levels of healthcare. Within these three tiers there are 152 clinics and 29 hospitals that are publicly financed. The first tier consists of peripheral clinics called EBAIS. Here you can see a doctor for any non-emergent medical situations, as well as get prescriptions for yourself. This tier also consists of nurses and nurses and nurse's aides who will go out into the community and knock on different doors to assess families and address any questions they may have. The second tier consists of peripherals hospitals, regional hospitals and major clinics. When speaking about the first and second tier's one of the major focuses

are prevention and screenings. They want to prevent you from having to go to the third tier. The third tier consists of the national hospitals as well as specialized hospitals. In order to finance Costa Rica's health care system, employers, employees and the state all financially contribute to the Social Security Administration, or as they call it the Caja. The Caja then manages, oversees and sustains the health care system. This paper will discuss further about the specifics of what the Costa Rica's healthcare system offers to the population. It will discuss the specifics of each tier and also focus on the nurse's role throughout the different tiers of the health care system.

POSTER #103

Patient Pain Assessment in Healthcare Settings

Albana Duka, AAS, RN (The Verrazano School)

Faculty Mentor: Professor Nora Maloney
Department of Nursing

Pain is a subjective experience and one of the most common complaints in healthcare as it often accompanies many conditions. There are multiple scales used to assess pain and to allow healthcare providers to interpret a patient's pain. Physiological, emotional, and environmental factors can affect pain making pain assessment difficult. As suggested by the literature, many healthcare providers have a tendency to underestimate a patient's pain. The purpose of this report is to explore the congruence between the patient's pain ratings to the healthcare providers interpretation as well as to explore the methods used in the pain assessment and their effectiveness. A literature review was conducted to identify studies evaluating the healthcare provider's assessment of pain as compared to the patient's report of pain.

POSTER #33

LVAD: A Second Chance at Life for Heart Failure Clients

Allison J. Filomeno, AAS, RN, Carla Piscitello, AAS, RN, Alyssa Reilly, AAS, RN, Albana Duka, AAS, RN, Henryka Paczkowski, AAS, RN

Faculty Mentor: Professor Regina Lama
Department of Nursing

On the United Network for Organ Sharing (UNOS) transplant list, patients in advanced heart failure are waiting for heart transplant for an extended period of time. With new technology such as Left-Ventricular Assist Device (LVAD) that not only improves the quality of life but also decreases the mortality rates, patients are given a second chance at life. The purpose of the poster is to look at the survival rates and quality outcomes for patient with LVAD. LVADs as the Bridge to Transplant (BTT), support cardiac muscle function, allow to rest and heal prior to transplant. Literature review of evidence-based research and UNOS database demonstrate improved survival rates for participants with LVAD after one year (91%) versus non-LVAD (77%) and (85% versus 68%) after 2 years. This pioneer breakthrough technology mechanical pump is surgically implanted and increases the strength of each heart contraction and as a result cardiac output. The focus of care is long-term management and prevention of complications as mostpatients spend their time waiting for that one phone call to give them a new start in life.

P O S T E R   # 9 1

Women and Human Trafficking

Siobhan Murphy, AAS, Nicholas Ciardiello, AAS, Bianca D'Aguanno, AAS, RN, Natalie Elias, AAS, Patricia Sirsick, AAS, RN, Kaitlin Sullivan, AAS, RN

Faculty Mentor: Professor June Como
Department of Nursing

Human trafficking is non-discriminatory with no bias toward color, race, sexual orientation, gender or age. Health care professionals have a unique opportunity with victims of human trafficking since 80% of victims are likely to have had contact with a health care provider. Over the last few decades, human trafficking awareness has spread both domestically and internationally highlighting that the practice of recruiting and trafficking victims leaves them isolated with little hope of freedom. Victims are often sold into slavery for sexual or domestic needs, prices range from $2 to $270,000, with many victims then transported to major sporting events as sex workers. Globally it is a $150 billion commodity trade. In the US 83% of confirmed cases from 2008-2010 were US citizens. The commercial sex industry has evolved by using online forums to solicit patrons, making identifying sex operations more difficult. Female victims of trafficking are historically underserved by healthcare due to fear of their safety being compromised or are often not afforded access to healthcare through their traffickers due to costs. Victims are often hypervigilant and display increased anxiety when subject to certain sounds and touch, signs that healthcare professionals need to be aware of when caring for all girls and women. Providing quality trauma-informed care such as the four R's (realize, recognize, respond and resist re-traumatization) can help victims feel safe and supported. The purpose of this poster is to provide evidence from the literature that informs nurses about the prevalence of human trafficking, highlight current nursing implications and advocacy, and provide information on resources for victims of human trafficking.

P O S T E R   # 2 0 8

Liquid Ventilaztion

Lori Pagano, AAS, RN, Jacqueline Travolino, AAS, RN, Bianca D'aguanno, AAS, RN, David Acosta, AAS, RN, Rebecca Larkin, AAS, RN

Faculty Mentor: Professor Regina Lama
Department of Nursing

While human beings are mammals that have evolved to have oxygen exchange from the air, a new technique offers another way to oxygenate for people with acute lung injury. Liquid ventilation is a technique of oxygenation that uses oxygen rich perfluorochemical liquid as the medium for oxygen delivery. The perfluorochemical chemical is instilled in the lungs for gas exchange to occur. The concept behind using this fluid, and not traditionally oxygen rich gas, is to lubricate the alveoli and keep them open; as well as helping to clean the lungs and clear away secretions. The indications for use vary for neonates and adults; while most of the research has been on the application for neonatal patients, it can theoretically be useful for a number of cases. Liquid ventilation can be beneficial for a patient with either pulmonary or cardiac trauma, as it can be used in conjunction with protective hypothermia to lower the body temperature. The poster created seeks to explore the properties, techniques, outcome, indications, and clinical outcomes of the use of liquid ventilation. Providing both an overview of liquid ventilation, as well as taking into consideration the nursing implications of using this technique. As liquid ventilation is a fairly new technique, aversions to it will also be discussed, and more research regarding its effectiveness needs to be done.

P O S T E R   # 1 0 8

Secondary Level of Care

Katherine Park, AAS, RN, David Chen, AAS, RN, Cindy Rucabado, BS,
Nursing Student UNIBE, Costa Rica

Faculty Mentor: Professor Regina Lama
Department of Nursing

While on a study abroad class to Costa Rica we visited various forms of health care organizations. Majority of the hospitals we visited had a tri-level system of care. The primary care units involve the Ebais, for secondary care it includes regional clinics such as Coopesain, and lastly for the tertiary level it consists of the national hospitals. For our project we will explore the secondary level of care in Costa Rica. Preventative care is emphasized and there are special programs provided to screen for diabetes, cancer and hypertension. Through early detection and treatment, secondary care aims to reduce the impact of disease and injury leading to original health and function. In a community of approximately fifty thousand people, health care services are offered by a regional clinic called Coopesain. This clinic is a self-managed cooperative that was established in 1990 and they provide health services to the people that live within the specific area. They also provide easier access to health care. The clinic consists of different modules and each one of the modules has their own specialty such as ambulatory surgery, pharmacy service, pediatric and home visits. In order to see the specialists, the patient is required to obtain a referral from a primary care professional. Once disease is detected nurses work with the patient to reduce and manage controllable risks and modify lifestyle choices. Nurses also carry out regular screenings to detect disease early on.

P O S T E R   # 2 2

Observation of Mental Health Facilities and Nursing Role in Costa Rica and United States of America

Alexis Sciarrino, AAS, RN (The Verrazano School), Jean Boston, AAS, RN (The Verrazano School), Daniel Orozco, Lucia Ramirez Ruiz

Faculty Mentor: Professor Claudia Mitzeliotis
Department of Nursing

Purpose: The goal of this project is to present information on the nurse's role in the mental health facilities in Costa Rica.

Background: The care provided in Costa Rica evolved from violating human rights to compassionate mental health settings.

Methods: The facilities were observed during our trip abroad to Costa Rica included the psychiatric hospital Dr. Roberta Chacon Paut and the Dr. Calderon Guardia hospital.

Findings: The purpose of our project was to bring light to psychiatric care in both Costa Rica and the United States of America. The nurse's role has evolved over the years in caring for psychiatric mental health patients.

The care of depressed and suicidal patients was evaluated using case studies and interviewing the nurses informally. A comparison was made using our local facilities in the United States to those we observed in Costa Rica. We also compared it to Willow Brook Institution looking at its history and eventually its closure.

POSTER #29

The EBAIS: Nurse's Role

Amy Shao, AAS, RN, Cathy Marra, AAS, RN, Maria Lourdes Villalobos Ruiz BS Nursing Student UNIBE, Costa Rica

Faculty Mentor: Professor Regina Lama
Department of Nursing

Purpose: The purpose of our work is to present information on the universal healthcare system of Costa Rica, known as the Caja or Caja Costarricense de Seguro Social (CCSS). More importantly, in Costa Rica healthcare truly begins at Equipo Básico de Atención Integral en Salud (EBAIS), or the local clinic.

Background: The EBAIS is the initial level of care in Costa Rica. These clinics provide primary and preventative care to each citizen in the community. There are more than 1,000 EBAIS clinics in Costa Rica, and with primary preventative care becoming an increasingly important area of healthcare, it is valuable to understand how nurses contribute to the overall health of the community. Method: We will present information that we collected during a study abroad program in Costa Rica during the winter of 2017. Our work included assessing the nurse's role within the EBAIS. Findings: Nursing care is an essential feature of care that is provided to patients in an EBAIS. For example, nurses conduct an initial patient assessment, they determine the purpose of the visit, they collect data, they prepare the patient to see the physician, and these are only a sample of their contributions. Nursing is an essential feature of the care provided in EBAIS as featured in our work.

POSTER #20

TPA for Stroke Patients with Negative Flair

Angela Spitalieri, AAS, RN, Charity Boadi, AAS, RN, Hanjia Li, AAS, RN
Faculty Mentor: Professor Regina Lama
Department of Nursing

Background: Stroke is a disease that affects the arteries leading to and within the brain. Stroke can be caused by either a clot obstructing the flow of blood to the brain (ischemic stroke), by a blood vessel rupturing and preventing blood flow to the brain (hemorrhagic stroke), or by a temporary clot (transient ischemic attack, TIA). TPA (or alteplase) stands for tissue plasminogen activator and is a blood clot dissolving agent used for the treatment of ischemic stroke. Administered intravenously in the arm, TPA works by dissolving the clot and improving blood flow to the part of the brain being deprived of blood flow. The period between initial onset of stroke symptoms and the administration of TPA is essential for positive patient outcomes. Fluid attenuated inversion recovery (FLAIR) is used to identify patients suitable for receiving TPA for the treatment of stroke.

Method: MRI studies were evaluated for use of fluid attenuated inversion recovery to conclude if patients were experiencing stroke. Image quality was noted on each MRI scan.

Purpose: Our aim is to identify patients suitable for receiving TPA. The concept of FLAIR can assist in identifying the onset timing range. A negative FLAIR result would indicate a favorable candidate who is more likely to experience a positive recovery.

POSTER #82

Women and Infertility

Jacqueline Travolino, AAS, RN, Charity Boadi, AAS, RN, Greata Dreyzina, AAS, RN, Ardijana Lekperic, AAS, RN, Valeriya Malysheva, AAS, RN

Faculty Mentor: Professor June Como
Department of Nursing

Infertility is defined as the inability to conceive a child after one year of unprotected sexual intercourse, or to carry a pregnancy to term. Many factors influence the infertility of a woman. The nurse must respond with compassion and care. This poster aspires to provide an overview of the many factors that influence infertility, with a focus on holistic nursing care. As nurses, our ability to assess the factors contributing to infertility while providing the individual with spiritual and emotional support is equally important as delivering physical treatment. Both cultural competent care and nutritional considerations are also addressed. One nutritional aspect discussed in detail is the concept of weight (underweight and overweight) measured as body mass index (BMI) as a factor. In addition to a woman's BMI, recommended diets and limits are also reviewed. From a cultural viewpoint, the support or reaction a woman or couple receives from society may contribute to the woman's self-image and mental health. The relationship between infertility and health insurance coverage is also explored. Health coverage can play an intricate role in the approach that an individual pursues in regards to treatment. Throughout the years there have been many advancements, but also controversies, regarding fertility treatment coverage by health insurance. Currently individual states in the US have state-specific legislation and regulation with varying policies related to infertility treatments.

POSTER #87

Child Abuse Issues

Suki Wong, AAS, RN,(The Verrazano School)

Faculty Mentor: Professor Barbara Schiano
Department of Nursing

The purpose of this research paper is to identify the root cause of unreported suspected child abuse cases. This paper will compare and contrast different protocols and policies of several hospitals to understand the process of child abuse cases. The findings may be useful in encouraging and establishing a universal protocol in all professional work places in responding to suspected child abuse. Furthermore, this finding can increase the effectiveness of reporting and treating suspected child abuse cases, hence decreasing number of unreported child abuse cases. Results show that different hospitals use different approaches in recognizing and treating child abuse cases, health care professionals are reluctant to report a possible child abuse case believing that reporting can affect the child and family, feeling uncertain and fear, lack of support, lack of education in child abuse in recognizing indicators of child abuse, and unclear protocol and policy in responding to child abuse cases. Addressing these issues will help health care professionals handle child abuse cases appropriately and effectively.

POSTER #207

Effect of Stress on Cardiovascular Disease in Middle Aged Women

Vicki Yu, AAS, RN, Yearnsun Kim, AAS, RN, Marketta McGarrell, AAS, RN, Fatima Shaikh, AAS, Edna Vega, AAS, RN

Faculty Mentor: Professor June Como
Department of Nursing

The leading cause of death in women in the United States is cardiovascular disease (CVD). CVD claims the lives of one in three women each year; which is approximately one woman every 80 seconds. Eighty percent of heart disease and stroke events may be prevented by lifestyle changes. While the major risk factors for CVD are high blood pressure, high cholesterol, high body mass index (BMI), smoking, lackadaisical lifestyle and diabetes, stress is the common factor that will induce all of these risks, in particular forwomen. Recent research findings suggest that young women are susceptible to the effects of chronic stress thus impacting their trajectory towards cardiac disease in later life. Under chronic stress the body doesn't get the chance to rest because it is always in high gear. As a result, arterial walls become thin, cholesterol deposits hasten, blood pressure is increased, all accelerating susceptibility to CVD. The good thing about stress is that it is a modifiable lifestyle factor. It can be a happy change (like marriage or birth) or an unhappy change (like divorce or death.) Stress occurs anytime the body has a response to change. Through lifestyle modifications and developing healthy habits, stress can be reduced to lessen the chance of developing heart disease. The purpose of this literature review is to reveal the importance of stress management in relation to CVD in middle aged women, how to prevent or lessen stress, and how it affects the women of the United States as a nation.

PERFORMING AND CREATIVE ARTS

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

Never Forget

Shanee Navon(The Verrazano School)

Faculty Mentors: Beatrix Reinhardt and Chris Vereen
Department of Performing and Creative Arts

Many people are aware of the mantra "never forget," which was chanted in response of the horrors of the Holocaust. However, since the time of the world's awareness of the terrors over 70 years ago, it seems that teachings and efforts of Holocaust remembrance are not preventing the onset of Holocaust forgetfulness. From the happenings in current events of the Syrian crisis, the denial of the Holocaust by many people, and the rising number of accounts of anti-Semitism, it is clear that the hate around the world continues even with the recognition of such a monstrous occurrence. Today, the earth holds the last of the living survivors who are still succeeding the weight of time. Soon, they too will retire from the world and there will be nobody alive that experienced the Holocaust first-hand, and who can testify from personal encounters. Survivors live on with the hopes that what happened to them will never be forgotten...But will it? Will their existence eventually fade into the brinks of our memories, as do all things of the past?

With this piece I intend to bring about questions, invoke feelings, and begin a discussion about the actual way in which history progressed, or hasn't progressed--in terms of hate and prejudice against the Jewish people. I have interviewed Holocaust survivors first-hand about their experiences and how it compares to the present day and a potential future of continuous hatred.

PHILOSOPHY

CONFERENCE LOCATION:
BOTTOM CENTER

P O S T E R   # 2 3 2

The Justification of War through Daoist Beliefs for the Preservation of Individuality

Alyssandra Marie Puglisi

Faculty Mentor: Professor Andrew Lambert
Department of Philosophy

This independent study examines how the Daoist religion justifies Tyler's and Rawls' ideas of the preservation of individuality through just war. In the worst of situations war is needed to achieve peace. The forces of Yin and Yang balance one another while creating a continuous control of the evolution cycle. The tension of how far will an individual or country go in order to protect and preserve its identity is examined. This independent study will explore the equal balanced life that requires war in order to have peace and maintain the individuality of one's original form of identity.

PHYSICAL THERAPY

CONFERENCE LOCATION:
UPSTAIRS WALKWAY

Note: Undergraduate Research Students have been mentored by faculty in Physical Therapy. The department does not offer an undergraduate major.

P O S T E R   # 9 6

Histomorphometry of Knee Joint Osteoarthritis

Monica Fining (Macaulay Honors College)

Faculty Mentor: Professor Jean-Philippe Berteau
Department of Physical Therapy

Osteoarthritis is a disease that inhibits daily activities by affecting the structure of joints. Articular cartilage covers the surface of bones in a joint and allows for a smooth gliding motion. However, when this cartilage is compromised, it causes pain and can progress to eventually require joint replacement surgery. Osteoarthritis is commonly attributed to the general wear and tear of the articular cartilage over time, but it is multifaceted and also affects the entire joint, including the subchondral bone that borders the cartilage. In the knee joint, the distal end of the femur articulates with the tibia, with the subchondral bone of the femur lying superiorly to the cartilage layer. Because osteoarthritis is currently diagnosed only after painful symptoms arise, the goal of this project is to study the changes in the cartilage and adjoining subchondral bone of mouse femurs due to early-onset osteoarthritis in order to be applied to diagnostic tests.

Osteoarthritis is induced in the knee of wild type mice, and the femur is dissected. After the femurs are embedded in PMMA polymer, cut into sections, and stained, histomorphometry can reveal progression of tissue degradation in the knee joint of post-traumatic osteoarthritic mice.

P O S T E R   # 1 3 4

Mechanical properties of Osteoarthritis

Steve Gad (Macaulay Honors College)

Faculty Mentor: Professor Jean-Philippe Berteau
Department of Physical Therapy

Animal joints are junctions made up of cartilage and subchondral bone. Mechanically, cartilage is an elastic type of tissue that connects bones in a joint and prevents two bones from rubbing upon each other. Subchondral bone is the layer of bone directly below the cartilage in a joint; it is a main shock absorber. Osteoarthritis (OA) is a joint disease that causes cartilage to degenerate and exposes bones to each other. Many people suffer from this degenerative disorder and the consequences of the disease can be studied mechanically. However, the time wise degradation of mechanical properties of bone and cartilage remain unknown during the process of OA. OA can be introduced into mice via a non-invasive loading machine. This can be accomplished using an ex vivo mechanical loading technique on the knee. The machine applies an external force to the knee and causes osteoarthritis.

The goal of this study is to characterize a protocol that efficiently introduces OA into mice knee joints by loading. This was accomplished and confirmed via histology on six CD1 mice that were two months old. The technique consists of an application of a nine-newton force, with a threshold of two newtons, for forty cycles.

Once OA is confirmed in a knee joint, the nano-mechanical properties can be assed using an Atomic Force Microscope (AFM). Nano mechaincal refers to the study of composition and the features associated with our samples on a nano-scale. In this study, our goal is to assess the elastic modulus of osteoarthritic bone compared to that of healthy bone samples. Our method of characterization is based on the Oliver and Pharr equation to obtain modulus of elasticity. The Poisson ratio has been set to 0.30 for subchondral bone. Calibration of our AFM has been performed with known samples of mica and PMMA. Our result of PMMA nano-indentation, around 5.0 GPA, is consistent with Andriotis et al. (2014).

Histomorphometry and Comparison of Fibular

Brandon Lei (Macaulay Honors College)

Faculty Mentor: Professor Jean-Philippe Berteau
Department of Physical Therapy

Bone is a multiscale material made of a composed of tropocollagen molecules and mineral crystals derived from hydroxyapatite. The complex organization of the collagen and mineral phases from atomic scale to the organ level make a composite that combines the optimal properties of both constituents and form a material that is both strong and tough. In the last few years, the optimization of modeling codes and the improvement of computational power allowed the development of multiscale models based on bottom-up approach. The idea is to quantify model the interactions between all the components of the material of interest at one scale and to use the results to build a coarser model at a larger scale.

Wild-type mice are induced with osteoporosis and are given experimental treatment to decrease its effects. The affected osteoporotic bone are then dissected from the mice and embedded using PMMA polymer, and are subsequently cut for histomorphometry and staining. Qualitative analysis of these images allow characterization and qualification of the experimental treatment's effects on this osteoporotic sample.

P O S T E R   # 1 5 8

The Difference in Step Length of Mice with Osteoarthritis

Liya Thomas (The Verrazano School)

Faculty Mentor: Professor Jean-Philippe Berteau
Department of Physical Therapy

Physical Therapy treatment is important for patients suffering from Osteoarthritis that is when connecting tissues starts deteriorating and causes severe pain in the joints. Osteoarthritis (OA) is a type of arthritis disorder. Arthritis is a defect in the cartilage (smooth tissue that helps sliding between the joints) when there is no cartilage present, inflammation of pain occurs which then leads to surgery and joint replacement. OA appears especially in the joints near the hands, knees, and hips. Although OA is a cyclic disease, the treatment for this disorder is continuous exposure to related exercise to have a decrease in the growth of OA pain. The primary focus is to investigate whether there will be a gait change between mice with OA compared to mice without OA. There is two parts hypothesis to the research: we hypothesize that after OA artificial loading in mice, there will be an increase in asymmetry than those without loading. Also, we propose that the step length will be smaller after OA in mice. Visual results were observed through the DiGigait that is the recording of the mice before and after applied loading. The gait of each mice from 3 different groups was recorded three different days. After conducting statistical analysis, it can be concluded that there was no change in gait symmetry of mice with OA when three different days were compared to each other of each group. However, the result showed some change when three different groups were compared to each other in the gait symmetry of mice with OA of the same day. Therefore, mice with OA showed some decrease in step length when compared to the group without OA.

POLITICAL SCIENCE AND GLOBAL AFFAIRS

CONFERENCE LOCATION: BOTTOM CENTER

POSTER #56

Drug War In South America

Omar Abdllatif, Jianqi Long, Caroline Kelley

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

The United States has been fighting a "War on Drugs" since the 1970s. President Nixon was the first president to declared the "war" and many Presidents after him all vowed that they will continue to support the "war". Although the focus "War on Drugs" is in the United States, it is also important to the lives of the people of Latin America. The fact that many drugs trafficked into the United States either grown in Latin America or transported from the Area has also became as strain in the relationship between the United States and Latin America. To closer examine in the effect of the "war" on Latin America we will look several factors and determine wither or not the "War on Drugs" been beneficial for Latin America and its people. We believed that while it has had both positive and negative effects, the "War on Drugs has been overall beneficial for Latin America. We will look at several factors across Brazil, Columbia, and Mexico. We will assert that the "War on Drugs" has been beneficial based on the following factors: the number of drug/drug trafficking related deaths before and after the "war". We will also compare the before and after incarceration rates. Changes in Economic factors (such as GDP and poverty rates) due to the "war" in area heavily influenced or controlled will also be examined. We will also look at how has the relationship between the United States evolve with these three countries in the years of the "War on Drugs".

POSTER #95

Modern Day Slavery in Latin America (Human Trafficking, Sexual Exploitation, and Forced Labor)

Nadia Assani, Crismelly Caso

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Human Trafficking is generally an issue all over the world, however, it has been a raising dilemma in Latin American for the past decades. Because of its region that contains easy transit and destination countries, peoplebeing trafficked from Latin America are sexually exploited and forced into labor. Research has shown that the ones who are mostly trafficked are women and children. According to the Walk Free Foundation, the two countries with the highest percentage of human trafficking in Latin America and the Caribbean are Haiti and the Dominican Republic. There are many factors that contribute to human trafficking in the region; many are individual factors as well as outside factors. There are some organizations that promote the awareness of human trafficking in the region, but even with the organizations the crime continues. The United Nations Office on Drugs and Crime (UNODC) is one of the organizations that try to stop the crime from happening. They also promote awareness in the region, and support. Although there have been several attempts to combat it by raising the anti- human trafficking law to international standards, it is still not enough. Why is human trafficking a prevalent matter in Latin America? What are the steps being taken by local government and international to reduce it? Are these efforts effective or not?

P O S T E R # 2 2 6

Revisiting the State's Perspective on Globalization: U.S.-Mexican Relations and NAFTA

Victor Benavidez

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Economic integration has been the dominant framework for the overwhelming majority of the world's economies since the late 20th century. Yet, therecent rise in nationalism that has grasped most of the developed economies of the West promotes a realignment of this economic globalization. This study will approach US-Mexican relations within the framework of NAFTA and will show the rhetorically evolving roles of states vis-à-vis the global system. I assert that this shift has been the result of the economic crisis of 2008. The disparity between developed and emerging markets will be defined by both Mexico and the US. As such, the globalized context of recent decades has been challenged in a way that is causing a significant political economic paradigm shift, and this research seeks to identify, define, and analyze the emerging binational relationship -- as well as related changes in the global arena.

P O S T E R # 8

Global Cross Cultural Communications

Cheyenne Clardy, Bertrice De Los Santos

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

My focus is on global cross cultural communications. In this study, I will be doing research on telecollaborations, International Class Partnerships, Virtual Exchange, and learning about how it can help understand global perspectives. This will also include doing research on other cultures and analyzing their differences and similarities to the United States. My hopes is to be able to create a bridge for many groups outside of the U.S to learn about one another while being in a class setting. As a former participant in this exchange, I will be explaining the experiences and common struggles that I along with my classmates and professor during the virtual exchange.

P O S T E R # 5 1

Finding Peace in Colombia

Corey Coronel, Aldo Rodriguez, Mary Albero

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Colombia has had the bad luck to be considered one of the most dangerous countries in the world. Due to organized crime, Colombia has been divided among three different radical groups, the most famous for popularity is the Revolutionary Armed Forces of Colombia abbreviated (FARC) the second group is Army of National Liberation Abbreviation (ELN) and United Self-Defense Forces of Colombia Abbreviation (AUC). These groups have their own ideas of how to govern the country, the crime has reached such a high level that the residents of Colombia, especially in the city of Cali, (one of the most dangerous cities in the country), have had to decide to split the city itself in too two different governing bodies. This is because of how radically different its residents of the city are, based on their ideas of how the country should be governed.

Recently the ELN has decided that an agreement must be made with FARC. Such a peace talk would bring Columbia into a completely harmonious state; the problem is the residents that reside within the beliefs of ELN do not want no such talks. We present to you both sides of the plate, the views of FARC and of ELN and why this two groups have had so much trouble in unifying Colombia. One of the most important questions that we will try to answer is "why are the ELN followers against peace talks with the FARC"? is it because they would feel less powerful than the FARC? Our most important question and what we want our project thesis to be based on is: how can ELN and FARC come together to unify Colombia in a way that both parties would benefit?

POSTER #58

The Border Wall

Devon Deriu

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

President Trump and his administration have decided on moving forward with his plans to crack down on immigration and border control along the southern border with Mexico. During the now President's campaign Donald Trump promised the American people that the new Border Wall would be paid in full by the Mexican government and as such, the Mexican people. As President Trump continues to act on his promises while in office, following a ban on refugees entering from Muslim countries, does this mean the Border Wall with Mexico will be a reality? If we really are facing such actions what is the cost of it all and how can we analyze the impact on the health, welfare and security of Americans and Mexicans? As we know right now, The Mexican government has responded to the American government by stating that "The Mexican people will pay for no such border wall." Obvious this wall is a point of contingency between the two nations as of late, but harsher policies presented by the Trump administration could also be a factor in making the U.S look more and more as an aggressor towards its Southern neighbor. Lately, President Trump has also made claims that NAFTA (North American Free Trade Agreement) is a "raw deal" for Americans (the U.S). President Trump plans on dismantling the plan that has brought the U.S, Canada and Mexico together and them more prosperous than ever before. As it is, the issue with rewriting or even dismantling NAFTA would isolate the U.S' largest trading partner. However, this contention is actually helping a nationalism crisis in Mexico. Due to Trump's claims, the Mexican people have rallied behind their President, Peña Nieto with deciding to not visit the U.S and the "Bully" who is Donald Trump. This can be a positive because Peña has not had the greatest popularity record with the Mexican people. It is without a doubt a issue pending disaster for everyone involved. Whether the threat of a border wall comes true and the Mexican economies falls, or NAFTA gets dissolved and Mexico's economy still falls. Either way you can look at it, it seems as if Mexico is the one getting a "raw deal."

POSTER #59

What Political Events Led Up to the Economic Downfall of Venezuela?

Nura Doleh, Joseph Abdel, Ribhe Tayeh, Mohammad Shahout

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Oil in Venezuela has been discovered and was used long before the discovery of the Americas. Oil has always been Venezuela's only and major export. In the 1970's Venezuela was the wealthiest country in Latin America. It had one the most stable economies in the Americas. In recent years, Venezuela's economy started to collapse. Today, Venezuela has one of the worst economies the world. Inflation keeps rising and there are food and medicine shortages. Crime rates have increased drastically, as well as the number of riots. The current President of Venezuela's, Nicolas Madura, position is being threatened, as many want him out of office. The country's current state has reached an all-time low, even forcing people to give their children away in hopes for a better life. How did Venezuela go from being one of the world's wealthiest countries in the world, to the world's poorest and economically unstable country? In this research study, we walk through Venezuela's history and what events led up to Venezuela's downfall. We examine the economic state of Venezuela and the effect it has on its people and how they are currently dealing with the economic recession. The research question we're going to identify is what political events led up to the economic downfall of Venezuela and what could have prevented it?

POSTER #76

Women's Rights 9er Labor Law: A Comparative Study of Maquila Workers in Mexico

Sylvia Hernandez, Charlie Contreras

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

This study attempts to prove that although the increasing role of women in the workplace has visibly improved, the value of their work is rarely value or acknowledge at the level as is men's work. Women have historically been subjected to discrimination and abusive conditions in the workplace. Women tend to be less visible, powerful, and the work that they do is less valued. For instance, women continue to earn considerably less than men which has denied women the opportunity for upper mobility, and which has also place women in an ever more vulnerable position. For the purpose of this study, we first look at the historical trends of the North American Free Trade Agreement (NAFTA) relations between Mexico and the United States, which uprise the movement of many transnational owned companies (maquilas) throughout the so called third world countries. Here we look at two companies: Sanyo and Foxconn, both electronic manufacturer corporations in Ciudad Juarez, Mexico. In terms of economic,political, and social context we are focusing in 1)Violation of women's rights as protected by law. 2)The lack of benefits such as health care. 3)Unequal/Low wages for women. 4)Unstable environmental and health conditions affecting women's community in the area. Finally, we look at 5)The lack of union representation in such factories as well as the possible uprising of women's movement in the state to demand the acknowledge of their rights as workers and as women. In addition, the mobilization of women's awareness has organized and gathered people together from local factories to improve their conditions and their ways of live.

POSTER #61

Palestinian Migrants in Chile

Nadine Kawas, Nicholas Bertone, Victor Cruz

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Latin America is the largest host of Palestinian migrants outside of the Arab world. The largest fluctuation of immigration we see is between 1900-1930, which was a tumultuous time in Palestine. When thinking of Palestine or Palestinians we often overlook Latin America, but there is an estimated half-million people of Palestine just in Chile. This research paper is going to focus on the reasons for the large migration into Latin America, why they chose Latin America, and why the clear majority are now in Chile.

Along with the question on why they are now in Chile we will also view their assimilation into the region. We can do this by focusing on areas which have a larger focus of those Palestinian descent and comparing the average incomes, crime rates, poverty levels, and other data; against cities which have larger populations of natives. Also, there are conferences often held in Chile to fight for the human rights of Palestinians. In these conferences, many indigenous residents are involved which may show a concern and acceptance by the Chilean-natives.

To summarize, we will look at why there was an influx of Palestinians into Latin America, why they chose Latin America, and why they are in Chile. Also how they assimilated and how they were accepted. We will look at primary and secondary sources such as articles and newspapers during the influx. Good books to discuss include: Constructing Identities: The Interaction of National, Gender, and Racial Borders by Antonio Medina-Rivera. Also, Migration and New International Actors: An Old Phenomenon Seen with New Eyes, by Maria Eugenia Cruset; but these are just examples and we are exploring more source material.

POSTER #109

The Politics of Gun Control and its Effects on Crime in Federal and Unitary States

Teddy LaBarca (The Verrazano School)

Faculty Mentor: Professor Halil Ege Ozen
Department of Political Science and Global Affairs

This paper explores the relationship between gun ownership and crime trends in the context of comparative relations between different countries. By analyzing the variation across countries with respect to their party systems and political polarization within their institutions, it became apparent that some legislatures took immediate action to pass gun control measures in response to mass shootings, whereas others were divided and couldn't reach consensus. The United States, for example, has experienced a string of gun atrocities that have triggered national debate over the need for stricter gun reforms, but did not move legislators to put their political differences aside in an effort to strengthen the gun control framework for the country. Gridlock constrained the parties in their ability to find common ground on what was certainly a practical rather than political issue. However, other countries with unitary systems, including the United Kingdom, in which political power is a lot more centralized in one institution, have acted more expeditiously in toughening regulations and experienced less gun violence as a result. The goal of my research endeavor, therefore, is to make a theoretical explanation as to whether the stringency or leniency of gun policies enacted by political institutions is the causal mechanism that drives the variation between federal and unitary countries with respect to their rate of gun-related crime.

POSTER #50

The Drug Trade in Latin America

Nicholas Pascone (The Verrazano School), Jonathan DiFilippo

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

In Latin America there is an ongoing problem with drugs, namely in Mexico and Columbia. Mexico is the largest supplier of marijuana to the United States. Columbia is the largest exporter of cocaine. The drugs are surrounded by violence and crime, both from the sellers and users. Trafficking these drugs is a huge industry. In order to understand this issue we have viewed documentaries and studied how the issue has impacted all countries involved. From our studies it is clear to see that the drug war in these countries is not working and efforts need to be changed. Many lives have been taken in the fight against drugs. How can the war on drugs be changed so that there is less of a loss of life and should there even be a war on drugs? This is the question we set out to solve. There are several answers. The war on drugs has been unsuccessful. What policies do Columbia and Mexico need to implement to stop these drugs from spreading?

POSTER #55

How are Cuba's Small (but growing) Private Businesses Affecting the Lives of Cubans?

Juan Pena

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

This poster will focus on how Cubans make money for themselves besides their government job. It is estimated that around 8 percent of Cubans currently do work for themselves. This ranges from taxi drivers to restaurants. As Cuba's economy has worsened since the fall of the Soviet Union, Cuba has given self-employed licenses to few citizens, allowing for some small private enterprises. This will continue to grow as Cuba has recently lessened the restrictions of these business (such as importing) in hopes to increase the economy and tourism. The poster would focus on how Cubans are benefitting from these loosened restrictions and a more open economy. This includes comparing the lives of those who work for the government and those who freelance. What jobs are open in this small growing business sector and how does the government benefit from allowing these small businesses to flourish?

POSTER #125

Council Internship: District 51

Rachel Postiglione (The Verrazano School)

Faculty Mentor: Professor Richard Flanagan
Department of Political Science and Global Affairs

This paper explores the history of the New York City Council and discusses its responsibilities to the community today.   I will supplement this research with my own experiences as an intern for Councilman Joe Borelli, who represents New York City's 51st council district on the South Shore of Staten Island. In addition, my paper examines some of the broad issues that the councilman's office faces, and how he and his staff address these problems.   It also provides information about the

legislative process in New York City and includes examples of some proposed bills that I worked on during my internship.   Furthermore, census information for the 51st district is examined for purposes of comparison and analysis. By looking at this data, I'm able to compare its demographics to other New York City Council districts, and Staten Island as a whole. This allows for further understanding of the community that Councilman Borelli represents, and in turn, determines the needs of District 51. This information also explains the reasons that this particular district differs from other districts throughout the city.

P O S T E R   # 6 0

Police Corruption in Columbia from 1980s to Present

Bianca Randazzo, Joseph Chiorazzi, Adekunle Adeyemo

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

The corruption in the Colombian police in the 1980's were at an all time high and it was practically unstoppable due to a weak state and the prominence of narcotic drug rings. This research will be based on the Columbia police and their improvements becoming less corrupt today vs 1980's and what steps were taken or being taken to improve the Colombian police by the government. What approaches have the governments taken to improve the police either by enforcing military strategy of a different approach. Columbia for most of it's history has been a country with a weak government which has gave way to conflict, the national police force being created in the late 19th century has had its roles changed since. The police plays a big role in the downfall of Columbia they were supposed to a be force enforcing the laws and upholding the constitution, to being an extended branch of the military. The national police force has been an institution plagued with conflict and corruption from high officials to lower ranked officers. In this paper we want to trace the development of the police force from the mid 1980's which was an era entangled with narcotic corruption to today. There have been some type of improvements been made even though there have been improvements there are still traces of corruption within the police forces of Columbia. We will also elaborate on whether the police made the narcotic trafficking more powerful because they turned their blind eyes to the crime once they are paid off.

P O S T E R   # 5 7

Participation, Power and Place: Roots of how Women President Make it to Power in Latin America

Wendy Rodriguez, Nancy Almazo

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Homemakers, is a term that has been used to classify women. Their role has mainly been involved with the care of a family, cooking, cleaning and the bearing of children. Men are the ones who have been perceived as the financial providers, not women. Machismo has played a big role in the reason why women have been perceived in such mentioned ways. However, many women in Latin America have drastically progressed in obtaining some form of leadership. Ranging from becoming presidents to prime ministers. However, we wonder how is it that women president make it to such position? The question relies on how is it that these outstanding women have risen to power and who is involved in the process? We studied the path that women president's from Nicaragua, Panama,

Argentina, Chile, and Costa Rica have taken in Latin American politics. It could be argued that women are definitely taking a much active role in national politics. These women who have aspired to public positions often used their upper-class position or their family ties to a famous father or husband to gain access to power. Many times the position of their major supporters enables them to acquire visibility and power in their own right. In Politics of Latin America by Vanden and Prevost, we find examples of women in Latin America that have taken more active roles in politics if not as president, as competent politicians that have been assigned roles as ministers of education,or ministers of social welfare

POSTER #71

How are Human Rights Violated Around the World by Corporations and how are they being Held Accountable for their Actions?

Kared Sampedro

Faculty Mentor: Professor Anat Niv-Solomo
Department of Political Science and Global Affairs

Human rights violations occur all over the world, often the government is to blame for the poor treatment of its citizens but what people often overlook is how private corporations have created an increase of violations of such rights. Corporations and the lack of blame for rights violation is largely due to the increase of corporations shifting their production abroad where laws on employment are less regulated than in the United States. For the most part the United States has lead the movement towards creating regulations between corporations and employees. Over the last 20 years there has been an increase of government laws such as the 1996 "No Sweat" campaign created by the Department of Labor which was designed to force foreign factories to comply with U.S laws. The creation of such laws was meant to improve the treatment of employees all over the world but making sure those laws are implementing abroad has been proven unsuccessful. The lack of awareness of the general public is mostly because people expect cheap prices and good brands and are used to a certain quality of life. Even though the general public says they will never shop at stores that violate human rights their actions say the complete opposite. All of this has lead to an increase of violations from major corporations such as Nike, Starbucks and Coca-Cola all who are rarely held accountable for their actions.

POSTER #85

Human Trafficking in El Salvador

Keirra Smith, Peunde Gaye, Conny Gordon

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

El Salvador is a destination for children and women who are victims of human trafficking. They are forced to engage in prostitution and manual labor. The victims are usually young women or young girls who live in low income areas due to poverty. Other adults and children are forced to participate in agricultural and domestic work. Some of the victims are from other countries near by such as, Honduras and Nicaragua. The victims that migrated to El Salvador were in search of jobs to make a better living for themselves. Throughout my research I will be discussing conditions in El Salvador that link to human trafficking. The question at hand will be what has the government in El Salvador done to advocate against Human trafficking? Thus far the government has ignored the standards for

the elimination of Human trafficking. Although they have failed at following the standards, they have made efforts to place limitations on trafficking. The government has also created anti-trafficking law enforcement and provided care services to the children involved in sexual exploitation during trafficking. The government has failed to prosecute people for incidents of forced labor, however El salvador is working with NGO's and other organizations to assist the victims of Human Trafficking. El salvador is working to help these victims substantially.

POSTER #94

Why Does Drug Trafficking Disproportionately affect Women in Latin America?

Alex Soto, Brenda Lazar

Faculty Mentor: Professor Jane Marcus-Delgado
Department of Political Science and Global Affairs

Although men make up the majority of those involved in the drug trafficking trade in Latin America, as well as the majority of the populations overall, statistics show that it is women who are increasingly facing much higher rates of incarceration for their involvement. On average, women make up 70% of the drug related arrests in Latin America. In our research, we have found that the toll that sexism, poverty and other oppresive institutions has had on women involved in the drug trade (frequently against their own will) is profound. In examining articles on female incarceration rates and the outstanding factors that lead to women being most frequently used as drug mules in this dangerous trade, there is no denial as to who is truly paying the ultimate price in the massive narcotic black market. Level of education and the history of violence against women (including sexual) has created an immense and inhumane slew of ramifications in regards to the wellbeing and general protection of women in Latin America, and it is because of these many factors that they are easy targets for drug transportation in these countries. We will use a variety of sources and statistics to compare just how severe the consequences are for women vs men in the drug trade, and why it is that the numbers continue to go up rather than down in regards to women's incarceration.

PSYCHOLOGY

CONFERENCE LOCATION:
BOTTOM FRONT

Organization of Attention in Novice and Expert Sitters

Fatima Aman

Faculty Mentor: Professor Sarah Berger
Department of Psychology

Cognition–action trade-offs in behavior occur as cognitive and motor demands compete for the attentional resources required to complete a task. Infants learning new motor skills often devote attention towards that new skill. For example, 13-month-old novice walkers and crawlers had difficulty inhibiting in a locomotor task, whereas expert crawlers of the same age could inhibit in the same task (Berger, 2010). Difficulty level was higher for novices than experts because they lacked the attentional resources available to experts . The aim of this study was to observe the nature of cognition-action trade-offs over the course of new skill acquisition To address this, we documented novice and expert sitters' compensatory balance control strategies during a reaching task. 27 full-term, pre-crawling infants were assessed for sit stage based on duration of stability during independent sitting without support. 12 were novice "Stage 2" sitters; 15 were expert "Stage 3" sitters. All infants participated in a reaching A-Not-B task: infants reached for a hidden toy 5 times at one location (A), then the hiding location switched (B). In one condition infants sat on a hard inelastic foam and in the other on a soft compliant foam. Primary outcome measures were whether infants could inhibit reaching to A on the B trial and compensatory balance control strategies during the task.

We found significant interactions between condition and sit stage for failure to inhibit (perseveration) and compensatory posture strategies. Stage 2 sitters perseverated to a greater extent on soft foam than did Stage 3 sitters. Stage 3 sitters perseverated to a greater extent on firm foam than did Stage 2 sitters. Stage 3 sitters used more compensatory posture strategies in the soft foam condition.

Expert sitters used compensatory balance control strategies to cope with threats to balance when attempting to sit upright on an unstable surface. Compensatory strategies relieved attentional load, thereby allowing infants to devote more attentional resources to inhibition.

Connecting Through Kinect: Designing and Evaluating a Collaborative Game with and for Autistic Individuals

Rayan Arab (The Verrazano School)

Faculty Mentor: Kristen Gillespie-Lynch
Department of Psychology

Autism Spectrum disorder is a neuro-developmental disorder that restricts an individual's ability to communicate and interact. According to Jon Baio from the national center on birth defects and developmental disabilities "One in every sixty-eight children are affected with an Autism Spectrum Disorder" (CDC, 2014). Autism creates complexity with processing normal behaviors and these difficulties decrease when interactive social communication skills are practiced. Individuals on the autism spectrum disorder are highly drawn to technology. Therefore, serious games, which are designed to entertain gaming users while teaching useful skills, may be beneficial for autistic people. Throughout my research, I have worked on developing a serious game to help autistic people collaborate with their siblings and peers while improving their social skills, specifically emotional recognition. A unique aspect of how we are designing this serious game is that we are involving autistic college students from a mentorship program, Project REACH, in game development and evaluation. Mentees and mentors in Dr. Gillespie-Lynch's mentorship program, Project REACH, are providing feedback on game development by testing the game and contributing to the storyline. As an

assistant researcher/qualitative coder and Project REACH mentor, I also work with a graduate student, Ariana Riccio. When giving feedback on the game, autistic college students are asked about the game and video recorded playing it. Ariana and I are then able to code facial expressions, requests for assistance, engagement with the game and with partners. Both students' verbal responses and our coding of their game play informs inform ongoing improvements in the game. Early in game development, the participants rarely looked at their partners during game play although most of the players did look at them at least once and communicated verbally. All five of the students expressed positive emotion at least once during game play and three autistic students exhibited explicit turn taking behaviors. Through coding schemes, we concluded various developments to increase engagement and a promising foundation to develop clearer incentive systems with mentees.

P O S T E R   # 1 3 2

Income Inequality as a Predictor of Depression 6 Months Post-ACS

Marco Costanza (Macaulay Honors College), Manar Ibrahim

Faculty Mentor: Professor Ellen-ge Denton
Department of Psychology

Income inequality refers to how evenly or unevenly income is distributed in a society. Growing research has indicated income inequality is positively associated with depression, which can lead to a subsequent heart attack and mortality. (Filho, Kawachi, Wang, Viana, Andrade 2013). The impact of income inequality on cardiovascular health may vary depending on individual income and wealth of the neighborhood. In a longitudinal study, we aim to examine how income inequality impacts depressive symptoms post-acute coronary syndrome (ACS). Subjects were studied from a sample of (N=944) patients recruited from Columbia University Medical Center. Depressive symptoms were measured by the Beck Depression Inventory (BDI) at 6 months' post-heart attack, and income inequality was measured by the Gini coefficient. Gini coefficient and neighborhood income within a 4-block radius were measured by the American Community Survey 2010 Census. We hypothesize a positive association between income inequality and depression. Results show that income inequality predicted 6 month depressive symptoms, differently, for patients who lived in high-income neighborhoods versus low-income neighborhoods (p <0.05). For patients in a neighborhood classified as having high household income, there was a positive association between incoming equality and depression. On the other hand, for patients classified as living in low-income neighborhoods, there was a negative association between income inequality and depression. Our findings depict the impact of neighborhood and income inequality on depressive symptoms and subsequent cardiac health. Ultimately, these findings highlight the impact of neighborhood on depression, particularly the risk for depression and post-ACS recovery for patients who reside in high-income neighborhoods and are exposed to increasing income inequality.

POSTER #139

Hippocampal Neuropeptide-Y in Relation to Social Behavior

Cynthia Dunne-Jaffe

Faculty Mentor: Professor Dan McCloskey
Department of Psychology

The Naked Mole Rat (NMR) is a mammalian eusocial animal that expresses social behavior/role analogous to non-mammalian eusocial species. This also transcends to them having the same expressed neuropeptide-Y (NPY) in these species. We measured social behavior of NMR (n=47) and used the most superior/inferior animals (i.e. top 3 most social & 4 of the least social). We stained for NPY in neuronal slices followed by confocal analysis to visualize the amount of NPY located in the CA1 area of the hippocampus. Preliminary data suggest that each individual displayed a unique axonal expression processing. Up to this point, we find that the pro-social animals on the inferior end of the social scale exhibit a decreased NPY expression in this region of the hippocampus.

POSTER #159

All in a Day: A Look at Infants' Daily Routine

Wai Sum Alzina Fok (Macaulay Honors College), Martina Zakir, Tirza Lehrfield

Faculty Mentor: Professor Lana Karasik
Department of Psychology

Infants' daily activities during the first two years are important for developing balance, posture, and locomotion, yet little is known about how infants spend their time throughout the day. Cultural practices determine infants' daily routines. We are interested in how infants spend their time throughout the day and whether their daily activities relate to age at onset of motor skills. To examine effects of culture on infants' daily activities, in our first study, we observed infants 0 to 24 months in Tajikistan. Using time-diaries, Tajik mothers reported where infants spend time throughout the day and what they do in these locations. We found that all caregivers use a traditional cradle—"gahvora"—in which infants' limbs are bound and movement is restricted. Younger infants spend the majority of their day in the gahvora presumably because of its adaptive function—in the gahvora infants sleep, eat, and toilet. Older infants spend less time in the gahvora and use it primarily to sleep. Although caregivers in the U.S. do not use gahvoras, they use other devices to contain infants (e.g., highchairs, strollers, car seats). In our second study, we are investigating how and where infants (0–24 months) in the U.S. spend their time. We will use time-diaries for mothers to give an hour-by-hour account of their infants' previous day. Additionally, we will ask about infants' locomotor histories: The first day that mothers witnessed their infants sitting independently, crawling, and walking. We are interested to see when and how often infants have opportunities to freely move around their environment, and if these opportunities for movement affect their motor development.

Pathologizing Gender Nonconforming Youth

Kaitlin Frazier (The Verrazano School)

Faculty Mentor: Professor Darryl Hill
Department of Psychology

Prejudice against trans-identified people can be identified in the language professionals use in their publications. In 2008, the American Psychological Association encouraged psychologists to reduce the amount of prejudicial language around trans-identified people. To test if this policy had an effect, this study examined three main kinds of prejudice—transphobia (fear and disgust of people who don't conform to gender roles), genderism (an ideology disparaging of non-binary gender), and pathologizing cisgenderism (characterizations of gender variance as abnormal)—in a historical analysis of case studies on children and adolescents that mental health professionals described as having gender dysphoria or gender identity disorder. One hundred and forty-five case studies in the psychological literature, published from 1964-2015 were coded for prevalence of anti-trans prejudice. There was clear evidence of parents, peers, and therapists using genderist language. Similarly, parents, peers, and therapists used transphobic language; and the gender variant children used transphobic language about themselves. Less evident, but also present, was pathologizing cisgenderism, or statements that characterized the youth as abnormal, sick, and perverted. In contrast to previous research that suggested prejudice against trans youth was prevalent and stable from 1999-2008 in professional discourse (Ansara & Hegarty, 2011), this study found that there was a sharp decrease in prejudicial statements after the 2008 APA statement on gender variant people, and afterwards it rebounded and increased once again in the following five years, along with the genderism and transphobia. Clearly, trans youth still encounter mental health professionals who view them as pathological and in prejudicial terms.

Effects of Sleep in Motor Problem-Solving in Infants

Dana Friedman, Pascale Saad (The Verrazano School)

Faculty Mentor: Professor Sarah Berger
Department of Psychology

Infants spend more time asleep than awake. Sleep has a positive effect on declarative memory in infants (Konrad et al., 2016) and is also positively associated with language development in infants (Lukowski & Milojevich, 2013). However, studies addressing the effects of sleep on motor problem solving in infancy are practically non-existent. The primary goal of this project was to test whether sleep affected motor problem solving in infants, and, if so, whether the timing of naps relative to learning mattered. Infants (n=11) who were within their first week of walking as their primary locomotor method participated. Once infants have given up crawling, it can be a struggle to switch between walking and crawling, making navigating a tunnel a challenge. Infants were placed on two feet at the opening of a round tunnel and encouraged to reach a caregiver at the other end. Prompts such as being placed on hands and knees, and rolling a toy through the tunnel helped train infants to solve the tunnel task. After training, infants were tested on the same task. Infants were randomly assigned to 1 of 5 conditions varying on the length of a delay between training and test, whether they napped during the delay, and if there was a nap, the timing of the nap relative to training and test.

Preliminary data suggests that infants in all 5 conditions improved, from pre-test to post-test, in how long it took them to enter the tunnel. Infants who did not nap had the most improvement; whereas infants who had a delay before their nap improved least. In addition, infants who did not nap

required fewer prompts at test, which reflects an improvement in performance. The infants who napped, required more prompts, which reflects a decrease in improvement.

Surprisingly, these results were contrary to our predictions, but due to a small sample size, it is still too early to draw conclusions. There are two explanations that may contribute to these results. Perhaps the effects of naps were not captured by the methodology used. Additionally, in this random sample, 46% of infants had tunnel experience before participating. Future work should take this into account because infants who have this prior experience may find this task less challenging.

POSTER #92

Generalization of Emotional Tone of Voice across Speakers in Youth with Autism Spectrum Disorders

Naomi Gaggi (Macaulay Honors College)

Faculty Mentor: Professor Patricia Brooks
Department of Psychology

This study employed a discrimination task, embedded in a custom-made video game to evaluate whether youth with ASD would readily generalize speech perception of content and affective prosody across male and female speakers. Twelve youth with ASD (7 to 21 years) and twelve age-matched typically developing (TYP) controls heard pairs of pre-recorded sentences varying in lexical content and emotional prosody (e.g., enthusiastic "Dave rode a bike" vs. grouchy "Mark held a key"). After training to reliably selecting one of the two sentences, participants heard test probes comprising re-combinations of the content and prosody features of the two sentences, with generalization trials using an unfamiliar voice of opposite gender from the voice used in training. Although youth with ASD were less accurate than TYP youth in discriminating sentences based on emotional prosody, they showed no decrements in generalizing to the unfamiliar voice. The observed deficits in prosody discrimination contrast with prior findings and suggest that the added demands of processing multiple voices may have reduced attention to affective prosody in youth with ASD.

POSTER #112

Social Isolation-Induced Stress: Influence on Medial Prefrontal Cortex Neurons in African Naked Mole-Rats

Naomi Gaggi (Macaulay Honors College)

Faculty Mentor: Professor Dan McCloskey
Department of Psychology

The African naked mole-rat, Heterocephalus glaber, provides an unique opportunity to study how different areas of the mammalian brain process complex social behavior. In order to adapt to the harsh environmental conditions below ground in East Africa, naked mole-rats were the first mammals to develop a eusocial organization, where there is only one queen, one to three male breeders, and the other members of the colony -up to 300 animals- are non-reproductive workers (Sansone et al., 2015). In the laboratory, we can study and manipulate the social interactions of naked mole-rats and measure how brain cells are modified by social experience. One manipulation we have found to be particularly strong is social stress, which occurs when a naked mole-rat is isolated from its native colony. We found this social stress increases fecal cortisol levels over a three-week period. At baseline, the cortisol levels of the social isolated animals were lower (M = 1.5 ±0.6 ng/dl) than after being isolated for one week (M = 3.2±2.3 ng/dl) and cortisol levels rose significantly after the second week

of being isolated (M = 9.7±1.6 ng/dl) This demonstrates that cortisol levels rise significantly as a result of social isolation over time, F(2, 5) = 51.11, p = 0.000526. In this study, we aim to assess the effects of social stress on the medial prefrontal cortex, which is a social area of the brain involved in fear and emotional processing (Radley et al., 2004). Using advanced methods in behavioral tracking, physiological measurement, and measuring the morphology of nerve cells, we can begin to understand the complex "social brain." Data from the first cohort indicates that social isolation may cause reduction in the length of neuronal dendrites and in the density of dendritic spines. Completion of the second cohort will allow us to understand the neuronal response to social stress in this species.

P O S T E R   # 1 1 7
Examining the Writing Skills and Writing Self-Efficacy of College Students with and without Autism
Naomi Gaggi (Macaulay Honors College)

Faculty Mentor: Professor Kristen Gillespie-Lynch
Department of Psychology

Although difficulties with language are not part of the current diagnostic criteria for autism, language difficulties are well documented among autistic individuals (Kanner, 1943); language difficulties are often associated with reduced Theory of Mind (ToM; Happe, 1933). Studies that have examined the writing performance of autistic school-age children have shown that they are at-risk for a diverse set of writing difficulties across graphomotor, spelling, and written expression areas (Brown et al., 2014; Dockrell et al., 2014; Mayes & Calhoun, 2008; Zajic et al., in press). The writing skills of autistic college students have received very little research attention. This study explores writing skills, writing self-efficacy, and Theory of Mind (ToM) in autistic college students and non-autistic mentors enrolled in a mentorship program, Project REACH. Standardized measures and a writing prompt were used to compare writing skills, self-efficacy, and ToM between autistic and non-autistic mentors and to examine associations between measures among autistic students in particular. Relative to non-autistic mentors, autistic students reported heightened autistic traits and belief in writing conventions (a subscale of the writing self-efficacy measure), wrote fewer words and sentences, and had lower RME scores. ToM was unrelated to writing skills. Higher autistic traits were correlated with heightened word comprehension but reduced goal-oriented writing performance. Replicating findings with autistic children/adolescents, autistic college students produced shorter texts than non-autistic mentors. Although some variability was apparent in the writing samples of autistic students and non-autistic mentors, there were few differences in the quality of the writing (i.e., presence of a thesis) but there were differences in the quantity of the writing (i.e., number of words and sentences). This may be in part due to a perfectionist attitude towards writing amongst the autistic students. Many individuals with autism are artistically inclined. Therefore, writing interventions with a drawing aspect and no time pressure could help autistic students produce longer texts.

P O S T E R   # 8 1

"Masking and Consolidation in Working Memory"

Tiffany Galbo, Khadega Imam

Faculty Mentor: Professor Timothy Ricker
Department of Psychology

Working memory is a cognitive system with a limited capacity that is responsible for temporarily holding information available for processing. We seek to understand of the relationship between masking and working memory consolidation. Masking is the presentation of a stimulus to remove the traces of a preceding stimulus from the retina and visual system. Short-term consolidation stabilizes fragile memory traces by directing attention toward the internal representation of a just-presented stimulus. We test two theories of visual working memory consolidation. The first theory, the attentional blink, states that presentation of a masking stimulus slows working memory consolidation. The second theory, working memory encoding, states that masking removes sensory memory for the brain, preventing further entry of new stimuli into working memory while leaving the consolidation process unaffected. To test these theories we manipulate memory item presentation. Specifically we manipulate the time amount of time after memory item presentation that the masking stimulus appears and the total amount of time form consolidation between the presentations of each memory item. The attentional blink hypothesis predicts that we should observe an effect of mask onset time and time for consolidation, as well as an interaction between these two factors. The working memory encoding hypothesis also predicts that we should observe an effect of mask onset and consolidation time, but no interaction between these factors. Our results indicate evidence for the that there was not any interaction effect with the masking item and consolidation duration, in agreement with the working memory encoding hypothesis.

P O S T E R   # 3 6

Exploring Lexical-Semantic Organization in a Community Sample of School-Aged Children

Alexandria Garzone, Fabienne Geara (The Verrazano School), Rita Obeid

Faculty Mentor: Professor Patricia Brooks
Department of Psychology

This research explores semantic development of school-age children using a repeated word association task. Vocabulary development is a fundamental aspect of language acquisition (Brooks & Kempe, 2012). Although many studies have explored how children acquire words, less is known about how they link concepts together. A current framework for understanding semantic development assumes that children build a network of associations that link together the words in their vocabularies (Steyvers & Tenenbaum, 2005). We aimed to understand children's lexical-semantic organization by asking them to generate the first word that came to mind in response to a list of cue words (18 nouns and 18 verbs), with the list repeated three times. We piloted this procedure with 25 children of ages 6 to 11 years. We used two databases (LSA: Landauer & Dumais, 1997; CBOW: Mandera, Keuleers, & Brysbaert, 2017) that provide estimates of semantic relatedness for words in the English language to measure the relatedness of children's responses to the cue words. Based on prior work using this task (Sheng & McGregor, 2010), we expected that semantic relatedness of children's responses would decrease as the task progressed (over list repetitions). That is, children would start off with responses that were highly related to the cues, and gradually produce more unrelated, random responses. We also hypothesized that younger children and those with smaller vocabularies would generate responses that were less related to the cues that older children and those with larger

vocabularies. Once we have a corpus of children's word associations, we intend to graphically represent their responses to the cues as a network, as a model of how children's vocabularies are organized.

Parental HIV/AIDS and Psychological Effect on Preschoolers in Rural South Africa

Anthony Gelardi

Faculty Mentor: Professor Comfort Asanbe
Department of Psychology

South Africa continues to deal with the impact of HIV/AIDS on its citizens. We assessed the psychological health of a sample of South African orphans and vulnerable children (OVC) due to parental HIV/AIDS to determine if there were significant differences between non-orphans (OVC1; n = 21); those orphaned by AIDS (OVC2; n = 16); those orphaned by other causes (OVC3; n = 11). The hypotheses that guided the study were that OVC2 will be at a greater risk for psychological health issues than OVC1 and OVC3, and girls will be at increased risk for emotional problems than boys. Our sample consisted of 48 children ranging from 2-5 years old, with an average age of 3.8; 23 males and 25 females. Caregivers or teachers completed the child behavior checklist (CBCL) preschool questionnaire on each child to determine their psychological functioning on the CBCL scales. The CBCL questionnaire consisted of 100 specific problem items. Raw scores were converted into standardized clinical scale T-scores, using the ASEBA Assessment Data Manager (ADM) computer software. Results showed that OVC2 were at a higher risk for oppositional defiance and aggressive behavior problems when compared with OVC1 and OVC3. For gender, female participants showed higher scores on anxiety problems than males. Although it was not statistically significant, females also showed higher scores on emotional and internalizing problems, and males showed increased scores on somatic and externalizing problems.

A Qualitative Examination of Racial Stress among Black Americans

Alah Ghanim, Niaife Homer, Samantha Cruz

Faculty Mentor: Professor Collette Chapman-Hilliard
Department of Psychology

Many studies have documented that racism and discrimination influence mental health and well-being among Black Americans (Perry, Harp, & Oser, 2013). Using a qualitative research design, the present study examined respondents' narrative reports of racial stress in the context of the community-wide stressors associated with the failure to indict the officers involved in the shootings of Michael Brown and Eric Garner cases. Although there has been previous research that has quantitatively assessed race related stress among Black Americans, there has been little research describing the narrative experiences associated with racial stress. In this study, a sample of 180 self-identified Black Americans between the ages of 18-50 years old. The participants were recruited via social media platforms using a snowball sampling procedure and completed an online questionnaire. Participants were instructed to describe a race related event that occurred in the past month. Data were analyzed using a consensual qualitative research (CQR) approach (Hill, 2012), and the results suggest multiple domains of racial stress that appear to impact Black Americans in this sample

POSTER #161

Social Justice and Mental Health – A CBPAR Informed Conceptual Framework for Interactions between Race and Socioeconomic Status

Jessica Gonzalez

Faculty Mentor: Professor Collette Chapman-Hilliard
Department of Psychology

Research regarding mental health and its intersection with social justice has highlighted how socioeconomic status and race influence the mental well-being of marginalized community members. In my poster, I present a conceptual model to further explore the interconnections between socioeconomic status, perspectives on oppressed minority identity status, and the influence of these statuses on exploring mental health resources. I introduce, three attitudinal outcomes that represent approaches to exploring mental health resources among diverse community members. The three attitudinal outcomes motivated, unmotivated and ambivalent. A motivated attitudinal outcome reflects a secure access approach to seeking mental health services. An unmotivated attitudinal outcome, on the other hand, represents insecure or apprehensive access approach to seeking mental health services. Finally, the attitudinal outcome ambivalent represents unresolved decision about seeking mental health services. This conceptual model was developed to inform an ongoing Community Based Participatory Action Research (CBPAR) study where Staten Island community leaders and activists from diverse communities shared their perspectives on motivating their constituents to seek mental health resources. Implications for the model in the context of the ongoing research study and for understanding approaches to seeking mental health services will be discussed.

POSTER #210

The Role of Autonomic Activity in Relation to Aspects of Social Acume

Mohammad Hashimi

Faculty Mentor: Professor Jennifer Wagner
Department of Psychology

The autonomic nervous system (ANS) provides an unfiltered look at our innermost sentiments. Sympathetic ANS responses increase when the nervous system is aroused, allowing us to gain insight into hidden emotional responses that may occur without conscious awareness (Boucsein et al., 2012). Measuring physiological responses has allowed researchers to gain important insights into sympathetic arousal, which has been seen through studies of electrodermal activity (EDA), which assesses changes in the electrical activity taking place on the skin. EDA measures are thought to be the most reliable indicators of change in the context of sympathetic responses (Dawson et al., 2007), and some work has found heightened EDA responses in individuals with difficulties in social and emotional processing, such as those with autism (Joseph et al., 2008). Further, recent work by Fenning et al. (2017) found that greater variability in EDA was associated with higher levels of autism symptoms. The current study extends past work to look at EDA, as well as heart rate (HR) responses, to assess sympathetic arousal and examine its relation to social functioning in the general population. Subjects were shown sixty semi-randomized images on a computer monitor comprised of neutral, negative, and positive stimuli while EDA and HR were recorded. Following this task, participants filled out a series of questionnaires to assess social and emotional processing, including the Reading the Mind in the Eyes Test (RMET), a test showing black and white images of eyes along with four adjective response options, and subjects were asked to select the word that best described the emotion that the person in the picture was feeling. The present analyses will look at EDA and HR responses to positive and negative stimuli (i.e., valenced images) in relation to scores on RMET, to see

how these ANS measures correlate with social abilities. This work will help further our understanding of relations between physiological responses and social-emotional abilities.

Examining Relations between Heart Rate Variability, Interoceptive Accuracy, and Socio- Emotional Processing in Adults

Cailen Jennings (The Verrazano School)

Faculty Mentor: Professor Jennifer Wagner
Department of Psychology

Several studies have pointed to a relationship between the autonomic nervous system (ANS) and socio-emotional processing. One area of this research has focused on heart rate variability (HRV), which is the variation in time between heartbeats. Reduced HRV represents poor regulation of the ANS, which in turn, may influence social impairments. Related work has found reduced HRV in individuals with autism spectrum disorders, a group known for social difficulty. Another portion of the literature focuses on interoceptive accuracy (IA), or the perception of physiological activity (e.g., heart rate) as it relates to emotional experience. Work has shown that individuals scoring higher on IA experience emotions with heightened affective and physiological intensity.

The present study will evaluate how HRV and IA relate to social and emotional processing in typically-developing adults. Participants first completed a heartbeat perception task, and then baseline HR was measured for 5 minutes. Following the physiological recordings, subjects completed the Reading the Mind in the Eyes Test (RMET) and the Toronto Alexithymia Scale (TAS-20) as measures of emotion processing, as well as the Broader Autism Phenotype Questionnaire (BAPQ) and the Social Responsiveness Scale (SRS-2) as measures of social behavior. IA will be calculated as the mean percent difference between perceived and actual heartbeats during the heartbeat perception task, and mean HRV will be calculated across the baseline period.

Correlations will then be performed between the physiological measures and the questionnaires measuring social and emotional processing. Based on past work, it is hypothesized that individuals with high HRV and better IA will have stronger emotion processing skills and will be less likely to display traits related to social difficulty. This work will help us further understand how physiological activity contributes to variations in socio-emotional abilities.

Mentors' Perspective on Mentorship

Kamal Kaur (The Verrazano School)

Faculty Mentor: Professor Kristen Gillespie-Lynch
Department of Psychology

Ever impacted someone and in return you felt great about yourself? That's the idea of mentorship. Having a mentor is extremely helpful, especially in a world outside of high school where you don't have a guidance counselor to keep you on track. An article by Elina Birmingham and Nicole Roberts (2017) focused on understanding the process of mentoring university students with autism. Mentors reported that a stronger trust bond developed with their mentee over the course of time spent with each other. In 1997, Georgia T. Chao described the last phase of mentorship as Redefinition –a bond of trust and friendship between the mentee and mentor. A second article by Opportunity Nation (2012) interviewed mentors about their experiences as a mentor. The majority of mentors reported a

positive aspect to mentorship. Using personal experience to help another person in need can be satisfying. Therefore, I hypothesized that mentors inProject REACH, a mentorship program for college students with autism and other disabilities, would exhibit positive changes in perspective towards mentorship when comparing the mentor's perspective before the mentorship began and after a semester of mentorship. After establishing reliability, we are coding interviews collected from mentees and mentors in Project REACH at the beginning and end of the spring of 2016. A unique aspect of Project REACH is that some mentees transition into being mentors. Eight mentors' answers were considered in the coding process. Coding of mentors' responses revealed that mentors often play the role of a friend for their mentee. Majority of mentors reported along the lines of, "…being able to express things that were either good or bad between me and [my mentee were easiest] because we kind of built that foundation in our first semester working together so this time it was a lot easier to continue that and progress." In future work, we will code mentors' and mentees' responses to additional questions to see if mentors' perspectives align with the perspectives of their mentees.

P O S T E R   # 1 2 0

African Naked Mole-Rats: Mammalian Capnophiles?

Shahrukh Khan (The Verrazano School)

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Department of Psychology

Certain strains of bacteria fill an environmental niche by demonstrating an attraction to high levels of carbon dioxide (CO_2; termed "capnophilia"), but animals are typically capnophobic and avoid environments with heightened CO_2. Previous work in a unique mammalian species, the African naked mole-rat has demonstrated the ability of this species to tolerate heightened carbon dioxide which accumulates in their underground burrows.   The present study was designed to test the hypothesis that naked mole-rats not only tolerate heightened conditions of CO_2, but, in fact, prefer them. This study utilized radio frequency identification to track the movements and space utilization of naked mole-rats within two captive colonies.   Results showed a clear aggregation of animals in the nest chamber of each colony, with all animals spending more than 60% of their daily activity in the nest chamber regardless of age, sex, or colony role. Measurement of CO_2 concentrations throughout the colony environment showed a high level of CO_2 in the nest chamber compared to other chambers that were visited less frequently. Infusing a high concentration of CO_2 away from the nest chamber caused an increase in emergence of animals from the nest chamber and towards the CO_2 source. These data suggest that African naked mole-rats may have adapted to prefer the CO_2 exhaled from their colony mates in the nest chamber; an adaptation which may explain how their eusociality has evolved.

P O S T E R   # 1 6 4

Assessment of Stigma toward Autism and Developmental

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Levels of stigmatization have increased over the years despite growing knowledge and awareness of disabilities in societies (Link et al. 1999, Phelan et al. 2000). Previous research has examined characteristics leading to stigmatization (Feldman and Crandall, 2007) as well as the level of stigma towards several mental illnesses (Hinshaw and Stier, 2008). This study examines stigma toward

college students with autism and other disabilities. A previous study showed that stigma towards autism may be lower than stigma towards other disabilities such as anorexia and drug addiction (Feldman and Crandall, 2007). Nonetheless, lower autism stigma in prior work may have resulted from confounding variables such as the fact that the vignette used about autism featured a child while the vignettes used about many other disabilities featured older people. The current study was designed to minimize possible confounding variables. College students participated in an online survey powered by Qualtrics. Participants were randomly assigned to read either vignettes without diagnostic labels, labels without associated behaviors or both. Survey questions asked participants to report their knowledge pertaining to the corresponding disabilities and previous encounters with each disorder. Measures of stigma such as a social distance scale and semantic differentials were adapted from previous studies. We hypothesized that participants assigned to a label would demonstrate less stigma compared to those assigned to vignettes without a label, that participants who have experience with a disability will show less stigma towards as well as increased recognition of it (Wright, 1983), and that participants who rate themselves as more similar to the specified individual will report lower stigma (Nevill & White, 2011). Initial analyses showed stigma toward autism to be highest in response to vignettes, followed by the vignette and label, with the lowest stigma toward just the label. Additionally, stigma was higher toward autistic individuals who were disruptive as compared to reserved.

Terror Management Theory towards Donald Trump's Favor in the 2016 Presidential Election

Wendy Lee

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This study looks at the four conditions of this study to find the effects of terror management theory in Donald Trump's favor during the 2016 presidential election. Based on the research of terror management theory, people who thought about death related thoughts, were prone to view positively towards Donald Trump as a strong charismatic leader after a series of terrorist attacks in 2015. In a previous study, people who thought about death related thoughts, viewed positively to President Bush as a strong charismatic leader as well prior to the 2004 presidential election regarding to terrorist attacks from Iraq. This experiment was split into four conditions (pain, immigration, mosque, and death) and each participant was exposed to one of these four conditions while answering a series of questions on a survey. The results show that the immigration, mosque, and death conditions were affected due to the participants' positive viewpoints on Donald Trump.

Relations between Children's Pattention to Eyes and Recognition of Threat-relevant Facial Expressions

Aviva Lehrfield (Macaulay Honors College)

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Department of Psychology

Reading facial expressions is important in detecting information about our surroundings. Children learn to scan facial features for signals about emotional states, which convey meaningful information about the environment. Studies show that children pay most attention to eyes when scanning faces,

and that this preferential attention relates to better social functioning (Wagner et al., 2013). Understanding emotional facial expressions is also important in sensing information about the environment. Studies have found that children show an attentional bias towards threat-relevant facial expressions (e.g., anger, fear), indicating a visual system that has evolved to quickly detect danger signals (LoBue, 2009). Little work has examined how a child's attentional bias to core facial features might relate to performance on emotion recognition tasks; the present study will analyze looking patterns across two eye-tracking tasks to look for relations between preferential attention to eyes and accuracy detecting threat-relevant facial expressions.

The present study included 31 children between the ages of 2 and 5 years. In Task 1, children looked at one face at a time, each with a different emotion (happy, sad, fearful, angry, and neutral). In Task 2, children saw four faces at once, three neutral and one with an emotion. An SMI Red 120Hz eye-tracker was used to record looking patterns. To analyze looking patterns in Task 1, areas of interest (AOIs) were drawn around the eyes and the whole face, and the proportion of time spent on eyes out of looking at the whole face will be calculated. For Task 2, AOIs were drawn around each of the four faces, and the duration of time spent on the non-neutral face (e.g., anger, fear) out of time spent on all four faces will be calculated, as well as the latency to look at each non-neutral face. Correlations between attention to eyes in Task 1 and detection and recognition of threat-relevant faces in Task 2 will be examined. We hypothesize that children who spend a greater proportion of time on eyes will detect threat-relevant faces faster, and spend more time looking at these faces. This work will help us better understand how children's scanning of faces relates to how well they recognize expressions of emotion.

P O S T E R   # 1 2 6

Racial Differences in Academic Performance

Jessica Longo (Macaulay Honors College)

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Racial stereotypes inform and guide behaviors and it is important to quantify and investigate the impact of racial stereotypes in academic settings.1 In this study, I seek to examine Black and White expectations of Black and White students' academic performance when given a hypothetical performance evaluation. As per the Expectation Violation Theory2 when set expectations about an individual are violated, the evaluation of that individual will be more extreme and in the direction of the expectation violation. The three research questions are as follows: What are the differences between Black evaluators and White evaluators on the academic expectation standard? I hypothesize that Black evaluators will have higher mean evaluation scores than White evaluators on the Academic Expectation Standard. Are cross-race evaluations and same-race evaluations different on the Academic Expectation Standard? I expect to see a difference between cross-race evaluations on the Academic Expectation Standard, but not between same-race evaluations on the Academic Expectation Standard. What are the differences between cross-race and same-race evaluations? I hypothesize that there will be greater differences in cross-race evaluations on the Academic Expectation Standard than in same-race evaluations. In a sample of 120 students, 60 identifying as White and 60 identifying as Black, there were 60 total same-race evaluations and 60 total cross-race evaluations. Evaluators were asked to rate students on a scale of 1 to 7, with 1 being the worst academic rating and 7 being the best. The total mean for academic evaluation scores in the sample was [M=3.92]. I found that White evaluators' ratings were higher than Black evaluators' ratings on the Academic Expectation Standard. The data supports EVT in that when Blacks did better than expected, and violated White academic expectation, I observed the highest academic evaluation score [M=4.76]. I observed the lowest academic evaluation scores for White students who academically performed worse than expected [M=3.13] and had White evaluators. The data shows that there was little difference between same-race and cross-race evaluations for White evaluators (Mean difference = .14) when compared to Black evaluators (Mean difference = .25).

Evaluating a Performance Based Intervention Strategy and Its Impact on ASD Stigma and Knowledge

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The reduction of stigma that is associated with mental illness is an ongoing priority. Approaches to address this stigma, including "arts- and contact-based approaches" (Michalak et al., 2014), represent promising methods of intervention available. Research has shown that the nature of the contact to address this stigma and the quality and quantity of previous exposure to ASD have had a significant impact on how much the intervention reduces previously held stigmatizing attitudes. This present study is designed to address the ongoing issue of stigma toward the ASD community through a performance-based intervention to see if the nature of theater-based intervention, through immersive monologue, will reduce stigma and increase ASD knowledge. The performance piece was created to target societal misconceptions of autism by gathering anonymous writing samples from the Staten Island community involving their previous experience and exposure to ASD stigma. The audience's stigma and knowledge of ASD were analyzed before and after the performance to assess any changes due to the nature of the intervention. This current study also compared the performance-based intervention approach to another mode of intervention, an online fact-based autism training, to see which approach yielded stronger results in reducing stigma and increasing ASD knowledge. This study demonstrates the importance of higher quality contact intervention approaches and their effect in reducing stigmatizing attitudes toward ASD and increasing ASD knowledge. This can help future intervention approaches incorporate more arts-based contact to create more immersive and entertaining ways of addressing societal misconceptions. Keywords: Autism Spectrum Disorder (ASD); Stigma; Self-Advocacy; Interventions; Theatre

Predicting Early Developmental Difficulties in Younger Siblings of Children with ASD

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Autism spectrum disorder (ASD) is a developmental disorder characterized by impaired communication, social interaction, and restricted interests/repetitive behaviors. ASD affects 1 in every 68 children, and recent studies of younger siblings of children with autism have found that family recurrence rates are 18.7%, meaning that about 1 in 5 of these younger siblings will be diagnosed with ASD (Ozonoff et al., 2011). Longitudinal research with these infant siblings aims to identify early predictors of ASD through the use of advanced methods such as eye-tracking (e.g., Young et al., 2009) as well as assessing family risk status and genetic analysis (Constantino et al., 2010; Ozonoff, 2011). One infant sibling study measured the level of quantitative autistic traits (QAT) that family members exhibited (i.e., older siblings, parents) to ask how it could aid in predicting outcome in these infant siblings (Shwichtenberg et al., 2010), and the present study extends this past work to examine how QAT, IQ, and social communication in the older sibling ('proband') and QAT in the parents could relate to outcomes in the infant. The present work is part of a longitudinal project with infant siblings of children with ASD that was conducted at Boston Children's Hospital. Based on clinical judgment at 24 or 36 months, infants were divided into high-risk ASD with ASD (HRA+) and high-risk ASD without ASD (HRA-). Probands were tested for a) cognitive functioning using the Kaufman Brief

Intelligence Test (KBIT) and b) QAT through the Social Responsiveness Scale (SRS), and parents were tested for QAT through the Broader Autism Phenotype Questionnaire (BAPQ). Data analyses examined whether groups differed in QAT in probands and parents or in cognitive functioning in probands. Preliminary findings show that HRA+ had older siblings with higher levels of social communication difficulties and autistic mannerisms, as measured through the SRS subscales. No differences were found for HRA+ and HRA- in proband verbal or non-verbal IQ, nor in levels of QAT in the mother or father. This study will contribute to the body of literature aiming to identify predictive markers of later developmental difficulties in infant siblings of children with ASD.

POSTER #162

African Americans' Racial Identification and Correlates to Academic Achievement

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There is a large gap in postsecondary accomplishment in the African American race compared to other ethnic groups. Furthermore, there is an academic achievement gap between males and females in the African American community. The present study will help to understand the differences in academic achievement between African American men and women. Research shows that less African American males graduated from high school, went to college and received their bachelor's degrees when compared to African American females (Hudley & Graham, 2001). This information suggests that it is important to explore the dynamics that will improve and promote positive educational outcomes for African Americans. The present study aims to answer two questions; what are African American female's academic expectations for African American students? And what are African American male's academic expectations for African American students? I hypothesize that African American males will have lower academic expectations of African American students and African American females will have higher academic expectations of African American students. To test these hypotheses, 15 African American males and 15 African American females were asked to evaluate African American students on a hypothetical task. Precisely, these men and women were asked to rate, on a scale of 1-7, African American student' academic performance when compared to other students in the class, their expectation of the student and the student's previous academic performance. Results of the present study showed that African American men had higher academic expectations when compared to African American women (M= 1.696) on the normative, expectation (M=1.726) and ipsative academic standard. Although it appears that men had higher academic evaluations when compared to women, these African American men did not have high academic evaluations of themselves. In contrast to our study findings, the literature shows that men academically under perform when compared to African American women. Therefore, there needs to be a way to improve African American male's motivation for their academic success.

Mommy-Say, Baby-Say: Crawling and Walking Infants' Interactions with Mothers

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First words and first walking steps are the crowning achievements in infancy. In Western cultures, mothers engage in "conversations" with infants from birth and look forward to their upright steps with anticipation and delight. In typically developing infants, first words and steps appear by the end of the first year. Researchers have asked whether these skills do co-occur by examining motor and language gains from maternal reports and observations, but the findings have been inconsistent. Some researchers found that as infants transitioned from crawling to walking, mothers reported gains in receptive and productive language. Similarly, as infants transition from prone to independent sitting, they show increases in babbling and gestures during naturalistic observation. In contrast, other researchers have reported inhibitory effects; as infants transitioned from pre-crawling to crawling, they emitted fewer vocalizations initially but increased vocalizations over time when observed during free play. But in these studies, researchers had not compared infants who are all the same age but differ on motor ability.

We asked 50 mothers of 11-month-olds to report on their infants' receptive and productive language, and gestures on the MCDI. We followed up with mothers 2 months later–by 13-months, 26 infants have started to walk–and asked about infants language. Analyses are ongoing. We hypothesize that mothers may report more language to their walkers as compared to mothers of crawlers, perceiving their walkers to be more advanced. Alternatively, mothers of crawlers and walkers may not differ on reported language abilities or mothers of walkers may report a smaller vocabulary as their infants first figure out their new walking skill. Findings from this study will expand our understanding of developmental cascades—the idea that skills in one domain of development may have consequences for other areas of development far afield—in this case, motor and language development.

Cognitive Load in Visual Reproduction Tasks

Johna Palladino, Cinthya Ramirez

Faculty Mentor: Timothy Ricker
Department of Psychology

Working Memory is an area of memory research that is subject to much controversy. This is the type of memory you use to perform math problems in your head or maintain a conversation. In our current research we investigate how attention is used to maintain visual memories. Past research has shown that distracting attention away form working memory maintenance with a secondary task during retention reduces memory performance. This is generally done by requiring participants to engage in a secondary task that varies in the amount of time it distracts attention. Larger proportions of time distracted by the secondary task lead to larger memory deficits. This indicates that attention is needed for successful memory maintenance. While this finding is robust in the verbal memory literature some research indicates that we may be unable to use attention to maintain non-categorical or non-verbal stimuli. In our first experiment we test this prediction by presenting non-categorical memory stimuli that vary in their orientation continuously around the entire 360 degrees of a circle. We find no effect of the amount of time attention is distracted by a secondary task, indicating that attention is not used in maintaining non-categorical memories. In a second experiment we test

whether presenting the same stimuli in clear categorical locations allows attention to be used in their maintenance. We again find no effect of how long the secondary task distracts attention during maintenance. This indicates that attention is not used in the maintenance of visual working memory.

POSTER #104

A-maze-ing Variability! Attention to Motor Demands Impacts Pre-schooler's Problem-Solving in Manual and Pedal Maze Task

Jose Ramirez, Danilo Benipayo

Faculty Mentor: Professor Sarah Berger
Department of Psychology

The process of acquiring new problem-solving skills involves trying out a variety of strategies, distinguishing between effective and ineffective strategies, ultimately settling on the most effective (Oakes & Plumert, 2002). Although 18 month olds were more likely to choose the safer descent strategy of scooting down a set of stairs than 13.5 month olds, both age groups implemented several strategies when descending stairs (Berger, Chin, Basra, & Kim, 2015). Similarly, school-aged children increasingly used a more efficient strategy for solving simple addition problems, drawing maps, or in recall tasks (Coyle & Bjorklund, 1997). The aim of the current study is to investigate the development of efficient problem solving by studying young children's choice and pattern of strategies in manual and pedal motor tasks.

Twenty-four children (4 to 6 years old) have participated. Their task was to roll a ball through a plastic maze by manipulating a maze board. A foam insert blocked sections of the maze to alter difficulty by varying the number of levels the ball passed through. Sessions were videotaped to document participants' maze-solving strategies. Coders documented the types of strategies, transitions between strategies, and the duration for the children to complete the maze.

In both manual and pedal conditions, older children tended to have fewer strategies and transitions than younger children. For all ages, there were fewer transitions in the manual condition than the pedal condition. Moving the ball into the middle of the board was generally harder than moving the ball out from the middle. Children used more strategies and transitions on trials where they moved the ball into the middle of the board than the opposite direction.

Patterns of transitions and types of strategies suggest that older children honed in on the most efficient strategies and most effective sequence to use those strategies whereas younger children tended towards trial-and-error. Younger children could not attend to the motor demands of the novel pedal task while keeping intact high-level cognitive skills, such as planning. Documenting real-time variability revealed the possible role of increased attentional load in the development of young children's problem solving

POSTER #52

Are Psychology Textbooks Gender-Biased?

Sydney Resto

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In 1975, the American Psychological Association recommended that there should be no gender bias in reports of psychological research. Research in the 1970s and 80s showed there was a gender bias in the field's textbooks: both genders were depicted stereotypically, men were referred to more often

than women, but women would represent disorders more often, and men were more likely to be pictured as therapists. This study questioned whether introductory psychology text books have become gender equal and have improved greatly over the years. Believing psychology to still be androcentric, we predicted that pictures representing people would be overly biased toward men, that it hasn't improved since the 1980s, and that the depictions of psychological disorders would be gender stereotyped. A convenience sample of 24 introductory psychology textbooks, published between 2000 and 2017 were examined. Specifically, we looked at 249 pictures depicting people with a psychological disorder, or therapists, in the chapters on psychology disorders. Pictures were coded for gender, type of diagnosis, year of publication. In the last 17 years, more men are shown than women in psychology textbook chapters on psychological disorders. And it is not necessarily becoming more gender balanced over the years. A test of the third hypothesis suggests that effect of gender represented in pictures (man vs. woman) across psychological disorders, revealed significantly more pictures of men used to illustrate people diagnosed with OCD, PTSD, and people who were homeless or therapists, and more pictures of women used to illustrate people diagnosed with depression, anxiety, and eating disorders. This study found that there is not gender parity in pictures in the psychological disorders chapters of Introductory Psychology textbooks, and has not improved in the last 17 years.

Are Russian Children Better at Case and Word Order Processing than German Children?

Svetlana Rozigov

Faculty Mentor: Professor Irina Sekerina
Department of Psychology

In the ongoing debate on whether German preschoolers can comprehend case markers correctly in the reversible OVS sentences, there are two positions: no, they cannot do it until the age of 7 and yes, they can and as early as of 4. More recently, Sauermann & Höhle demonstrated again that 4,5, and 7-year-old German-speaking children make a lot of errors in a sentence-movie matching task. In contrast, Özge showed that German 4-year-olds can use the ACC case marker predictively when tested using in a Visual World Paradigm eye-tracking study. Özge found the same predictive use of case markers in Turkish in both OVS and OSV word orders and argued that less prominent case markers and restrictions on word order in German are not critical for processing. We set out to test how early case markers can be used by Russian-speaking children in a VWP study using the materials modified from Özge. Russian grammatical case system, with 6 cases, multiple paradigmatic forms, and case concord, is very robust and is usually in place before children reach the 2;0 MLU stage. The design was 2x2, with Word Order crossed with Type of Presentation, with 3 items in each cell interspersed with 10 fillers. The trial always started with a preamble in which all the objects were named followed by a spoken sentence paired with either a forced-choice 2-picture presentation or 3 single referents in a blocked design. For the 2-pic presentation, children had to select the correct picture; for the 3-ref presentation, they accepted or rejected an action picture in a sentence-picture matching task. The goals of the experiment were to (1) test comprehension of case markers in the OVS word order in Russian, (2) investigate the role of methodology, and (3) compare the results in Russian with those in German. The children in all age bands performed above chance, and there were no differences in accuracy as a factor of Word Order and Type of Presentation, with the only significant effect between the 5-6-yos (98%) and 4-yos (86%) in the OVS conditions. Thus, the Russian children demonstrated seemingly perfect and early comprehension of case markers and word order aligning our results better with those of Özge than Sauermann & Höhle. However, a closer look warrants caution in reaching such a conclusion.

POSTER #122

Quantitative Analysis of Input in Bilingual Acquisition of Heritage Language

Svetlana Rozigov

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Department of Psychology

In this study, we present the results of the first 6 months of a 1-year longitudinal study of a bilingual HL Russian-English-speaking 2-year-old child, Uliyana. We have been recording Uliyana for one full day once a week for 50 weeks until she turns 3. The recordings span different contexts, take place at home as well as at the nursery, during shopping, and at the playground. The sheer amount of data precludes us from manual coding and requires us to rely on the AWC produced automatically by the LENA algorithms. However, we face a serious challenge: the speech in our recordings is in two languages, and there is no LENA evaluation for Russian. Thus, to (1) assess whether the input in the HL Russian is reduced, and (2) describe its restructuring, if any, we need to first evaluate accuracy of LENA's AWC for Russian and bilingual input. For our initial evaluation of accuracy of the LENA system for AWC, we compared an early 1-hour recording with a later 1-hour recording chosen as two representative samples by the LENA algorithm. We split each recording into 12 5-min sections and compared the AWC produced by the LENA automatic algorithms with manual transcription by a trained linguist. LENA has provided significantly lower estimates for AWC than the human coder for both recordings. Correlational analyses also revealed inconsistencies between the two recordings: for the earlier one, the correlation between LENA AWC and human count was strong, whereas for the later one, there was none. We hypothesize that the main reason why the LENA algorithms do not estimate correctly AWC in Russian has to do with its reliance on short bisyllabic sequences of CVCV characteristic of English, but not of Russian. As far as the inconsistencies are concerned, we argue that they are due to noise that affects recordings in natural circumstances. If the signal variation is ±2 or more dB, its maximum variance can reach 18%. These results caution against the reliance on the LENA automatic algorithms as a primary tool for quantitative assessment of input in HL Russian. The additional controls should be implemented in the LENA software for randomized choice of representative recordings that are used for estimates of the amount of input.

POSTER #48

Psychology of Littering

Jessica Scicchigno

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Island explores people's opinions on the condition, location, and possible solutions to littering. This is a first look at the answers collected by this survey. Ninety first year college students participated by taking an online questionnaire. Early results indicate a support for fines for those who litter. These results also indicate a support for education in public schools, as well as increasing the amount of trash containers. According to respondents, littering is most common at bus stations, curbs, and parks. However, respondents also believed businesses should not be held responsible for litter related to products they are selling.

P O S T E R   # 1 5 7

Dying to Vote: Mortality Salience Affects Support for Donald Trump

Miriam Sedrak (Macaulay Honors College)

Faculty Mentor: Professor Florette Cohen
Department of Psychology

Thoughts about the acts of terrorism in Paris, France, Berlin, Germany, and Orlando, Florida have all contributed to the increased support for presidential candidate Donald Trump, similarly to how the events of September 11, 2001 led to increased support for 2004 presidential candidate George W. Bush. Terror management theory implicates that during times of crisis and terror, people will look for a charismatic leader to take charge. Previous studies have shown that when mortality is made salient, compared to an aversive control condition, people favored a compelling leader such as President Bush before the 2004 elections. This study compared the favorability for the two presidential candidates when participants were given a pain control condition or the mortality salient condition. We found that Hillary Clinton was viewed more favorably than Donald Trump in the pain control condition, but Mr. Trump was viewed more favorably in response to a death. It was also found that reminders of death did not affect impressions of Mrs. Clinton.

P O S T E R   # 6 3

Masking Effects in Visual Working Memory

Liya Thomas (The Verrazano School), Mabel Etuknwa

Faculty Mentor: Professor Timothy Ricker
Department of Psychology

In two experiments we examine the nature of capacity limits in visual working memory. Working memory is temporarily stored information that is instantly available to carry out ongoing thought processes. There are two competing theories that addresses the nature of capacity limits in working memory, the discrete-slots model, and the continuous-resource model. The discrete-slots model, argues that we can only remember a fixed number of items, about 3 or 4 on average. When we don't remember an item we must guess. The continuous resource model, argues that memory can be divided up into an unlimited number of items, but that the continuous resource itself is limited. The smaller the proportion of the continuous we devote to an item, the worse our memory will be. We test each of these theories and also propose that both are too simplistic in their approach. The two leading models of visual memory only propose memories perfect, but noisy, memories for the exact item presented. We suggest that people also maintain gist memories of general item categories. Our analyses indicate support for predictions from both the discrete-slots and continuous-resource models. We also show that gist memories exist in addition to memory for precise memory item features.

Determinants of Dogs' "Guilt" Response as a Theory of Mind Behavior

Anna Trotta (The Verrazano School), Samantha Escobedo

Faculty Mentor: Professor Parvene Farhoody
Department of Psychology

According to Premack and Woodruff (1978), Theory of Mind (ToM) is demonstrated when an animal "imputes mental states to himself and others" (p. 155). When a dog exhibits behaviors such as averting its eyes, lowering its head and tail, and putting its ears back, this has been accepted as anecdotal evidence that the dog "feels guilty" (a ToM behavior) for having committed some wrongdoing about which the owner will be displeased. Therefore, these guilt behaviors would imply that dogs impute mental states to others (the owner is angry) and that dogs alter their behavior (exhibit guilt behavior) in response to "knowing" how others feel. The purpose of this study was to investigate the guilt behavior of dogs and its determinants. Neutral objects were identified by preference assessment. One object was paired with appetitive ("happy") owner behavior and the other with aversive ("unhappy") owner behavior when the owner entered a room. The owner's entrance was signaled by 10 s of noise (keys jingling, door movement). The noise stimulus served as the second component of a compound stimulus, which came to control the guilt behavior of the dogs. In this study the dogs' guilt behavior occurred while owners were still outside the room and unable to provide any cues to the dogs about outcomes. The experiment demonstrated that (a) Pavlovian conditioning is sufficient for dogs to acquire guilt behavior, (b) dogs can exhibit guilt behavior without having engaged in any wrongdoing and, (c) guilt behavior can be controlled by stimuli other than owner behavior.

Does Intervention Improve Cognition and Motor Development: A Case Study with A Developmentally Delayed Infant

Emily Vaughn (The Verrazano School), Layla Aburmeileh

Faculty Mentor: Professor Sarah Berger
Department of Psychology

Sitting is an important milestone in infant development. Upon no longer needing their hands for support, infants are free to explore the world. Healthy, typical infants who are categorized as good sitters, spend more time actively touching and observing their environment. In contrast, infants who have some type of developmental motor delay, and who are considered "poor sitters", show more passive engagement. Through object exploration, infants learn about object permanence, and about object textures, shapes, and colors. Our aim is to explore whether an intervention would improve a motor-delayed infant's sitting and, in turn, his object exploration.

In this case study, a newly sitting infant with a non-specified developmental delay was observed twice at home. He sat on the floor with a toy in front of him, and wore an eye-tracker device which recorded gaze. To compare two types of intervention, coders were blind to which type this infant received hence avoiding any bias. We used video coding software to code where and how long the infant looked. We also coded where, how (active or passive), and how long the infant touched the toy. There was a decrease in active touching and an increase in passive touching from the first to the second session. The proportion of active touching decreased from 75.43 percent at the first session to 34.73 percent at the second session, although the total amount of time that the infant touched the toy increased from the first to second session from 69 seconds to 107.42 seconds. Duration of looking at the toy, increased from 102.84 seconds to 112.04 seconds from the first to second session. As we carry

out additional analyses and increase our sample size, we will investigate whether different types of intervention improve infant's sitting and active motor control. Going forward, we expect intervention focused on self-initiated, active movement to advance developmental skills by increasing independent mobility and motor-based problem solving skills so that more children will be able to benefit from intervention services.

P O S T E R   # 1 1

PSYCH+Feminism: A Wikipedia Initiative for Introductory Psychology Students

Sabrina Walters

Faculty Mentor: Professor Patricia Brooks
Department of Psychology

This study introduced students in an Introductory Psychology course to Wikipedia editing with the purpose of expanding Wikipedia content about women who have made major contributions to the field of psychology as part of a PSYCH+Feminism initiative sponsored by the Wikipedia Education Foundation. We sought to engage students in writing for a public audience and developed supports to make the assignment feasible. These supports included creating a list of psychologists to write articles about whose work was referenced in the Introductory Psychology textbook, identifying relevant websites, downloading articles written by the psychologist that exemplified their line of research, creating a template for a Wikipedia "stub" biography, and uploading these materials to Blackboard and students' Wikipedia accounts. In total 43 students created Wikipedia accounts and worked on 18 new Wikipedia articles, with some working in pairs and others opting to work individually. Prior to the assignment, students expressed a variety of emotions, including being overwhelmed, excited, and confused, yet most were successful in completing Wikipedia training modules and editing text in their Wikipedia sandbox. We hope that engaging students in the PSYCH+Feminism supported their research and writing skills as they learned how to use their textbook and other source materials to get information for their articles. We identified challenges associated with learning how to paraphrase rather than plagiarize content and cite sources, and offered feedback through the Wikipedia talkpages. By giving feedback and requiring them to revise their work, the students experienced the "revise-and-resubmit" process that is essential to academic research.

P O S T E R   # 6 5

The Effects of Short-Term Consolidation on our Working Memory System

Anthony Wong, Sochima Ezeude

Faculty Mentor: Professor Timothy Ricker
Department of Psychology

Understanding how we maintain information within our working memory system is vital to our everyday life. This memory is used remember directions in your head, do math problems, or remember visual images over a brief span of time. In this experiment, we investigated the relationship between short-term consolidation and attention. Short-term consolidation is the means through which our stable working memory representations are constructed. We presented a series of visual memory items and asked participants to remember their orientation for recall a few seconds later. During item presentation, we manipulated brief periods of time between the presentations of each memory item to observe the effects of short-term consolidation. We have two competing theories of how this

variation should affect memory performance, namely, the attentional blink and the flexible attention approaches. According to the attentional blink, when we consolidate memory attention gets stuck for a brief period and we are unable to shift attention to new items. This means there should be an effect on the item immediately following the manipulated consolidation period. The flexible attention approach predicts that when a new item appears we stop consolidating the old item and move attention to the new item. This means we should see an effect on the item preceding the manipulated consolidation period. Our results show that after a manipulated consolidation period, but not before, the mean response error decreases as more consolidation time is given after each memory item. This indicates an attentional blink explanation of short-term consolidation.

POSTER #131

The Influence of Faith Based Practices and Ethnic Identification among Veiled Muslim Women on Body Image and Eating Pathology

Nisma Zakria (Macaulay Honors College)

Faculty Mentor: Professor Collette Chapman-Hilliard
Department of Psychology

Despite a growing amount of research on body image and eating concerns among racially and ethnically diverse women, there remains a gap in the literature exploring how women of different racial and ethnic backgrounds may differ in how they view their body because of culturally specific stigmas, practices, and experiences (Grabe & Hyde, 2006). Specifically, there is a limited amount of research examining Muslim American women's body image and eating concerns (Edman & Yates, 2004), and even less literature examines these mental health concerns in the context of ethnic group affiliation and religious practices that have been identified as significant to Muslim women (Ali, Humedian & Liu 2004). To date, most research on body image and eating pathology has focused largely on Christian populations while neglecting other faiths such as Islam (Swami et al, 2014). Islamic religiousness has been associated with measures of well-being, including life satisfaction, having positive relations with others, and physical health (Abu- Raiya et al, 2008). The use of the Islamic head covering, hijab, is relevant to a Muslim women's corporeal experience (Mahmud & Swami, 2010) possibly influencing a women's self-perception in areas such as body image. Separately, other research suggests that ethnic identification and affiliation are also related to body image and eating concerns (Franko & George 2010), and this identification with one's ethnic group may further be protective for women with regard to perceptions of body image (Cash, Morrow, Hrabosky, & Perry, 2004; Wildes, Emery, & Simmons, 2001) and, by extension must be considered in an examination of eating pathology. Thus, in the current study, I examined the relationship between body image and eating pathology as influenced by faith based practices and ethnic identity among Muslim American women. I present study findings in my poster that describe body image and eating pathology among Muslim women who veil and I discuss implications for research and clinical practice.

P O S T E R   # 9 9

Object Exploration in Infancy: A Cross-Cultural Study

Juliana Zaloom (Macaulay Honors College)

Faculty Mentor: Professor Lana Karasik
Department of Psychology

Objects are ubiquitous in infants' worlds. Western infants are encouraged to explore objects almost from birth. Parents provide numerous toys and give their infants the freedom to move and space to move in. While this may be the norm in Western culture, it is not the case in other societies with unique childrearing practices. In Tajikistan, a country in Central Asia, parents use a "gahvora" cradle. In the cradle, infants are strapped in with binds and covered with drapes restricting infants' movement and vision. I asked whether Tajik infants will actively explore objects when given the opportunity. I examined object exploration in 97 Tajik infants from 0 to 24 months who have used the gahvora since birth. Infants were tested on the floor sitting with support, if necessary. A researcher presented a novel, engaging toy with multiple sides to explore for 2 minutes. I coded 10 actions on the object: mouth, bang, lift, rotate, locomotion, hand-rotate, finger-rotate, hand-push, finger-push, and hold. On average, the number of actions performed on the object increased with age. Moreover, proportionally, advanced motor actions (hand-rotate and lift) increased with age and basic exploratory actions (bang) decreased with age. Older infants (16-, 20-, and 24-month olds) produced significantly more lifting than 8- and 12-month-olds, presumably because they were more stable in the sitting posture. In this culture where infants have limited object opportunities, Tajik infants show developmental increases in object exploration and type of actions on objects similar to studies with Western infants.

WORLD LANGUAGES AND LITERATURES

CONFERENCE LOCATION:
BOTTOM CENTER

"Vamos al tiatro": Vowel Closure of Mexican Spanish in New York City

Steven Arriaga (The Verrazano School), Nancy Almazo, Gabriela Pineda

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

In the Spanish language, the vowels in its phonological system can be separated into two distinct categories: open and closed vowels. This distinction is made with regards to the degree of openness of the vocal tract upon pronunciation of the vowel. The vowels /e/, /a/, and /o/ are known as the open vowels, with /i/ and /u/ comprising the closed vowels. In the Mexican Spanish variety, within phonological variation, when two vowels are in contact, there is a tendency to close the open vowels in order to facilitate formation of diphthongs, e.g., teatro > tiatro. Previous research has shown that vowel closure can be attributed to the influence of neighboring consonants. However, we also propose that English-Spanish bilingual speakers, whose dominant language is English, will exhibit vowel closure in Spanish, due to the influence of English pronunciation, e.g.: theater > teatro > tiatro.

The research comprises two subgroups with equal distribution regarding gender: six participants who have received formal instruction of Spanish at a university level, and six participants who have not received the same form of instruction. This study focuses on middle class, second generation (G2) speakers of Spanish who are between 18 and 25 years old. Within a variationist framework for data collection and analysis, the present study is a qualitative and quantitative investigation of oral data, which are elicited respectively through sociolinguistic interviews, reading passages, and images with participants. This analysis provides insights into the nature of a vowel process that has been overlooked in the Mexican Spanish in New York City and further contributes to our understanding of how social factors play a role in phonological variation.

"¡Este chichí me hace pensal tanto!" Substitution of /l/ for /r/ among Dominican Spanish Speakers in Washington Heights

Keyla M. Brazao, Eric Garcia, Katherine Moreno, Raul Sisalima

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

Within the Dominican Spanish, there are dialectal variations of the Spanish rhotic. Previous research concerning dialectal variation of Dominican Spanish rhotics has focused primarily on coda resolution: vocalization (/com.prai/ for /com.prar/) in the Cibao region, and lateralization (/com.pral/ for /com.prar/) in the capital Santo Domingo. The aim of this project is to provide an examination of trill variation of urban middle class speakers based on acoustic measurements for the Santo Domingo Dominican Spanish speakers in the Washington Heights section of Manhattan. For the current study, a total of 16 participants served as informants, who were divided into two groups: first generation (G1) and second generation (G2) speakers of this variety. While G1 comprises individuals between 35 and 55 years old, G2 ranges from 18 to 15 years of age. Each participant was engaged in an informal interview about him or herself to solicit natural conversation prior to performing an additional linguistic task, which was based on describing a series of pictures containing specific items to elicit the production of /l/ in coda position. Preliminary analysis shows that dialectal variation of the Santo Domingo Dominican Spanish trill across generations did not reveal major differences. The comparison between the two generations suggests a degree of consistency in the production of /l/ in coda position among Dominican Spanish Speakers in Washington Heights.

"Conservar mis raíces es mi manera de representar a mi gente": A Sociolinguistic Look at the Velar R in Puerto Rican Spanish in New York City

Selena Jaquez, Maria Lorena Flores, Dominick Leon

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

Posterior articulations of the traditionally apico-alveolar trill /r/ have been recognized as one of the most noticeable features of the Puerto Rican Spanish. Research shows that R is often described as a stigmatized pronunciation. While regional differences in the frequency of R's usage have been extensively examined, questions remain regarding R's social meaning. The goal of this project is to analyze the social factors that determine the distribution of R pronunciation in Puerto Rican Spanish. Specifically, this pilot study looks at the social meaning of velar R among Puerto Rican Spanish speakers in New York City.

To that end, individual interviews were conducted with individuals (N=20) from the island. While 10 participants represent Puerto Rican speakers from the first generation (G1), the second generation (G2) of speakers of this Spanish variety is composed of the remaining 10 participants. While G1 ranges from 35 to 55 years of age and are Puerto Rican Spanish speakers who were born in the island where they learnt Spanish, G2, conversely, comprises individuals between 18 and 25 years old who were born in New York City where they learn Spanish.

The present study is a qualitative and quantitative investigation of oral data. This analysis provides insights into the nature of the velar R production that has been overlooked in the Puerto Rican Spanish in New York City and adds knowledge to our understanding of how social factors play a role in phonological variation.

"Me fascina la canne mechada": The Dropping of the /r/ in Final Syllable Position and the Doubling of the Following Consonant among Cuban Spanish Speakers in New York City

Briana Lopez, Jennifer Padilla, Samantha Salcedo, Jon Aucaquizhpi

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

"Me fascina la canne mechada": The Dropping of the /r/ in Final Syllable Position and the Doubling of the Following Consonant among Cuban Spanish Speakers in New York City

The Caribbean Spanish is composed of Cuban, Dominican, Puerto Rican, Panamanian, Venezuelan, and a coast Caribbean of Colombia varieties. These Caribbean dialects have features in common, but Cuban Spanish is somewhat different. Unlike other Caribbean Spanish varieties, the Cuban dialect is unique in ways that make it stand out. Specifically, Cuban Spanish is known for the gemination process, i.e., dropping syllable final /l/ and /r/ and doubling the following consonant, e.g.: Alberto > /a.bbe.to/ and carne > /ka.nne/.

For the current study, a total of 16 participants served as informants, who are divided into two groups: first generation (G1) and second generation (G2) speakers of the Cuban Spanish dialect. G1 comprises individuals between 35 and 55 years old and G2 ranges from 18 to 15 years of age. In order to solicit natural conversation, each participant is engaged in a semi-structured interview that aimed to elicit the production of /r/ in final position. Sociolinguistic variables, including age, education, socioeconomic status, and sex, are tested in this study.

The preliminary results provide insights into the nature of this gemination process that has been overlooked in the Cuban Spanish in New York City and adds knowledge to our understanding of how extralinguistic factors play a role in phonological variation.

Censorship in the Decameron's 3.10

Kevin Mione (The Verrazano School)

Faculty Mentor: Professor Gerry Milligan
Department of World Languages and Literatures

The Decameron, written by Giovanni Boccaccio in the mid 1300's, is an Italian Epic containing one hundred stories. Considered "scandalous" for the time period it was written in, The Decameron's stories often included sexually explicit content/topics. Although there are numerous stories within the piece, which contained explicit mature content, controversy surrounded a specific story more than any others- "Day 3: Story 10". In many translations throughout centuries, this story has been censored for no explicit reason. By analyzing the history of censored literature, as well as why this specific story has been perceived in such a negative way, the reasoning behind the censorship of "Day 3: Story 10" will become increasing clearer. This will allow for a deeper understanding of why this story has been attempted to be censored, and will ultimately shed light upon the reasoning that pieces of literature get censored/banned.

The Heheo Phenomenon among Honduran Spanish Speakers in New York City's Staten Island Borough

Chelsea Morales, Sandy Palaguachi, Elaine Vasquez

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

The Spanish language is one of the most diverse languages in the world. Latin America has many different countries that have taken their own spin on it. This research focuses on a country in Central America. Central America is made up by Guatemala, El Salvador, Costa Rica, Nicaragua, Panama and Honduras. Out of all the different countries, this investigation is based on the Honduran Spanish variety. The main focus of this research is to examine the linguistic phenomenon heheo, which is the tendency to aspirate initial or intervocalic /s/, e.g., [hí heñór] for "sí, señor."

For the current study, a total of 12 participants served as informants, who were divided into two groups: first generation (G1) and second generation (G2) speakers of the Honduran Spanish variety. While G1 comprises individuals between 35 and 55 years old, G2 ranges from 18 to 15 years of age. Each participant was engaged in an informal interview about him or herself to solicit natural conversation prior to performing an additional linguistic task, which was based on describing a series of pictures containing specific items to elicit the production of /s/ in initial and intervocalic positions. Sociolinguistic variables, including age, education, socioeconomic status, and sex, are tested in this study. Our hypothesis is that while the G1 will maintain the heheo, the G2 will produce it to a certain extent. G2 may use it in some situations, but may not use heheo most of the time. This research provides insights into the nature of this consonant production that has been overlooked in the Honduran Spanish in New York City and adds knowledge to our understanding of how social factors play a role in phonological variation.

The Use of Ustedes vs. Vosotros among Peninsular Spanish Speakers in New York City

Alexa Moran, Jacinta Andrade, Oscar Bustamante, Iker Vidals

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

From 2000 to 2010, Spaniards have been immigrating to the United States at an alarming rate of 635,000, which places Spain on the fifth largest Spanish-speaking country in the USA. Based on the census, most of these immigrants come from Castilian-speaking regions in Spain. As to the grammar of the Spanish pronouns, vosotras/os and ustedes are the plural counterparts of tú and usted, respectively. While in Latin American Spanish varieties ustedes is used for both the informal and formal plural you, the standard pattern in Castilian Spanish, conversely, distinguishes vosotras/os, which is used to address more than one person in an informal context, from the ustedes form, which is reserved for formal use, with people the speaker does not know or with whom there is no close relationship. This pilot study aims to examine the degree to which Castilian Spanish speakers use this pronominal distinction when they speak.

To that end, the present research is comprised of two groups: first generation (G1) and second generation (G2) speakers of Castilian Spanish. While G1 ranges from 35 to 55 years of age, G2 comprises individuals between 18 and 25 years old. Within a variation framework for data collection and analysis, the present study is a qualitative and quantitative investigation of oral data, which are elicited respectively through sociolinguistic interviews with participants. Preliminary results show that dialectal variation of the Spanish pronominal paradigm across Castilian speakers does reveal major differences. This analysis provides insights into the nature of a pronominal system that has been overlooked in the Peninsular Spanish in the United States –and, particularly, in New York City– and further contributes to our understanding of how social factors play a role in morphosyntactic variation.

"Ana estudiaba en CSI fue español": The Case of the Focalizing Ser among Colombian Spanish Speakers in New York City

Jessica Quiroz, Jennifer Hernandez

Faculty Mentor: Professor Francisco Salgado-Robles
Department of World Languages and Literatures

A cleft construction is commonly used in Spanish to focalize arguments within a sentence. A sentence such as "Ana estudiaba español en CSI" can be transformed into a cleft sentence such as "Lo que Ana estudiaba en CSI fue español". In several dialects of Spanish (e.g., Venezuelan, Ecuadorian, Panamanian, Colombian, and Dominican), a sentence involving a similar focus interpretation can also be created without the relative pronoun and the complementizer que ('that') as in "Ana estudiaba en CSI fue español". This latter structure is called focalizing ser. Previous research has shown that the use of the focalizing ser structure diminishes among those people who speak more than one language from birth. However, there is still little evidence that examines the use of this construction among English-Spanish bilingual speakers. Thus, this pilot study aims to examine the extent to which the focalizing ser structure is used among Colombian Spanish speakers in New York City. To that end, the research is comprised of two groups: first generation (G1) and second generation (G2) speakers of this variety. While G1 ranges from 35 to 55 years of age, G2 comprises individuals between 18 and 25 years old. A total of 20 participants evaluated 40 sentences containing both focalizing ser and cleft structures, presented in two acceptability judgment tests which were given out in both audio and

written formats. The sentences were part of mini-dialogues and participants were asked to evaluate them based on how (un)familiar it seemed to them. Preliminary results show the vitality of this construction among the scarcely studied Colombian Spanish speakers in the United States.

P O S T E R   # 8 0

Quantificational Duration and Frequency Phrases in Mandarin Chinese

Tsz Yan So

Faculty Mentor: Professor Chao Li
Department of World Languages and Literatures

This project investigates the distribution and interpretation of quantificational duration and frequency phrases in Mandarin Chinese. Quantificational duration phrases (QDP) like liang xingqi 'two weeks' and quantificational frequency phrases (QFP) like yici 'once' can appear preverbally or postverbally (e.g. wo liang-ge xingqi meiyou shangke 'for two weeks I did not attend class' and wo shang-le liang-ge xingqi ke 'I attended class for two weeks'). My hypothesis is that QDPs and QFPs must appear preverbally when a sentence is in its negative form. To test this hypothesis, I collect and analyze data from the CCL Corpus (the Center for Chinese Linguistics of Peking University), and sort out the true QDPs and QFPs from the potential QDPs and QFPs. The significance of this project lies in its documenting how QDPs and QFPs are distributed (and interpreted) as well as formulating generalizations about the use of frequency phrases and duration phrases in Mandarin, generalizations that can be used as a basis for future crosslinguistic comparison.

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17	Anastasia Hayes	Peter Kabachnik	Political Science and Global Affairs
184	Virgil Hayes	Mayra Humphreys	Social Work
218	Lauren Brian McKenna Spagnoli	David Gerstner	Media Culture
136	Kenneth Morella	Peter Costa	Psychology
170	Krystal Raiford-Sanchez	Esther Son	Social Work
219	Winston Richardson	Susan Smith-Peter	History
9	Beren Sabuncu	Ashley Dawson	English
83	Pharlande Saint Juste Gaspard	Fatoumata Seck	World Languages and Literatures
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147	Hye Seung Yoo	Esther Son	Social Work

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187	Joseph Curcio	Dan Zhang	Marketing
190	Toufic Eid	Dan Zhang	Marketing
193	Caitlin Fontana	Dan Zhang	Marketing
185	Kimberly Hayes	Dan Zhang	Marketing
191	Sydney Mojica	Dan Zhang	Marketing
192	Margot Noyola	Dan Zhang	Marketing
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56 Omar Abdllatif	Jane Marcus-Delgado	Political Science and Global Affairs
198 Layla Aburmeileh	Sarah Berger	Psychology
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60 Adekunle Adeyemo	Jane Marcus-Delgado	Political Science and Global Affairs
155 Dea Aga	Ralf Peetz	Chemistry
84 Kathryn Agner, AAS	June Como	Nursing
18 Sheriff Akanmu, AAS, RN	Regina Lama	Nursing
111 Magdy Akramy	Alan Lyons	Chemistry
	Alfred Levine	
113 Mohamed Al Sharif	Jimmie Fata	Biology
64 Sakib Alam	Alfred Levine	Engineering Science and Physics
51 Mary Albero	Jane Marcus-Delgado	Political Science and Global Affairs
57 Nancy Almazo	Jane Marcus-Delgado	Political Science and Global Affairs
211 Nancy Almazo	Francisco Salgado-Robles	World Languages and Literatures
113 Dina AlSharif	Jimmie Fata	Biology
206 Cecilia Alva	Chang Min Kim	Engineering Science and Physics
195 Fatima Aman	Abdeslem El Idrissi	Biology
197 Fatima Aman	Sarah Berger	Psychology
214 Jacinta Andrade	Francisco Salgado-Robles	World Languages and Literatures
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91 Nicholas Ciardiello, AAS	June Como	Nursing
38 Marissa Citera, AAS, RN	Regina Lama	Nursing
8 Cheyenne Clardy	Jane Marcus-Delgado	Political Science and Global Affairs
178 Christina Colucci	Cheryl Craddock	Curriculum and Instruction
76 Charlie Contreras	Jane Marcus-Delgado	Political Science and Global Affairs
51 Corey Coronel	Jane Marcus-Delgado	Political Science and Global Affairs
4 John Cosentino	Dwight Richards	Engineering Science and Physics
28 Sara Costa	Stephanie Rayan	Curriculum and Instruction
132 Marco Costanza	Ellen-ge Denton	Psychology
61 Victor Cruz	Jane Marcus-Delgado	Political Science and Global Affairs
128 Samantha Cruz	Collette Chapman-Hilliard	Psychology

Undergraduate Conference on Research, Scholarship, and Performance— Student Scholars (cont.)

POSTER#/STUDENT	FACULTY	DEPARTMENT
91 Bianca D'Aguanno, AAS, RN	June Como	Nursing
208 Bianca D'Aguanno, AAS, RN	Regina Lama	Nursing
137 Brooke Dahl	Susan Smith-Peter	History
34 Alexandra Davis	Lisa Manne	Biology
50 Jonathan DeFilippo	Jane Marcus-Delgado	Political Science and Global Affairs
30 Marcus Del Valle	Lara Saguisag	English
38 Anna DeLeonardis, AAS, RN	Regina Lama	Nursing
16 Paige DePrimo, AAS, RN	Regina Lama	Nursing
58 Devon Deriu	Jane Marcus-Delgado	Political Science and Global Affairs
204 Pin Desilva	Alan Lyons	Chemistry
6 Jaclyn DiBello	Chang-Hui Shen	Biology
173 Zachary Diemer	Susan Imberman	Computer Science
4 Jeffrey Dietrich	Dwight Richards	Engineering Science and Physics
15 Michael DiNicola	Gloria Gianoulis	English
59 Nura Doleh	Jane Marcus-Delgado	Political Science and Global Affairs
82 Greata Dreyzina, AAS, RN	June Como	Nursing
103 Albana Duka, AAS, RN	Nora Maloney	Nursing
33 Albana Duka, AAS, RN	Regina Lama	Nursing
139 Cynthia Dunne-Jaffe	Dan McCloskey	Psychology
171 Richard Durante	Aleksander Haber	Engineering Science and Physics
90 Vitaliy Dvorkin	Alfred Levine	Engineering Science and Physics
13 Toufic Eid	Daniel Gagliardi	Marketing
206 Nadia Elattar	Chang Min Kim	Engineering Science and Physics
91 Natalie Elias, AAS	June Como	Nursing
231 Hassan Elsherbini	Deborah Sturm Kristen Gillespie-Lynch	Computer Science
167 Samantha Escobedo	Parvene Farhoody	Psychology
63 Mabel Etuknwa	Timothy Ricker	Psychology
65 Sochima Ezeude	Timothy Ricker	Psychology
133 Hassan Fares	Alfred Levine	Engineering Science and Physics
26 Michael Farina	Alfred Levine	Engineering Science and Physics
153 Joseph Ferreti	Aleksander Haber	Engineering Science and Physics
33 Allison J. Filomeno, AAS, RN	Regina Lama	Nursing
96 Monica Fining	Jean-Philippe Berteau	Physical Therapy
225 Christine Fisher	Shi Jin	Chemistry
216 Maria Lorena Flores	Francisco Salgado-Robles	World Languages and Literatures
203 Xena Flowers	Jeffrey Goodman	Biology

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POSTER#/STUDENT	FACULTY	DEPARTMENT
159 Wai Sum Alzina Fok	Lana Karasik	Psychology
150 Kaitlin Frazier	Darryl Hill	Psychology
220 Angela Fried	Probal Banerjee	Chemistry
102 Dana Friedman	Sarah Berger	Psychology
151 Rachel Furhang	Alejandra Alonso	Biology
134 Steve Gad	Jean-Philippe Berteau	Physical Therapy
92 Naomi Gaggi	Patricia Brooks	Psychology
112 Naomi Gaggi	Dan McCloskey	Psychology
117 Naomi Gaggi	Kristen Gillespie-Lynch	Psychology
81 Tiffany Galbo	Timothy Ricker	Psychology
213 Eric Garcia	Francisco Salgado-Robles	World Languages and Literatures
36 Alexandria Garzone	Patricia Brooks	Psychology
85 Peunde Gaye	Jane Marcus-Delgado	Political Science and Global Affairs
36 Fabienne Geara	Patricia Brooks	Psychology
149 Anthony Gelardi	Comfort Asanbe	Psychology
128 Alah Ghanim	Collette Chapman-Hilliard	Psychology
53 John Gioeli	Aleksander Haber	Engineering Science and Physics
183 Jennifer Giordano	Jonathan Sassi	History
161 Jessica Gonzalez	Collette Chapman-Hilliard	Psychology
85 Conny Gordon	Jane Marcus-Delgado	Political Science and Global Affairs
160 Toniann Grossman	Christina Hagedorn	English/Linguistics
7 Elina Grunkina	Rebecca Chamberlain	Biology
26 Peter Guerriera	Alfred Levine	Engineering Science and Physics
114 Nicole Guzman	Lisa Manne	Biology
210 Mohammad Hashimi	Jennifer Wagner	Psychology
101 Sana Hassan	Greg Phillips	Biology
171 Edward Heavey	Aleksander Haber	Engineering Science and Physics
84 Dziana Herasimenia, AAS, RN	June Como	Nursing
76 Sylvia Hernandez	Jane Marcus-Delgado	Political Science and Global Affairs
155 Edgar Hernandez	Ralf Peetz	Chemistry
217 Jennifer Hernandez	Francisco Salgado-Robles	World Languages and Literatures
128 Niaife Homer	Collette Chapman-Hilliard	Psychology
132 Manar Ibrahim	Ellen-ge Denton	Psychology
163 Shaima Ikhmayes	Abdeslem El Idrissi	Biology
81 Khadega Imam	Timothy Ricker	Psychology
222 Md Zahirul Islam	Christine Martorana	English
216 Selena Jaquez	Francisco Salgado-Robles	World Languages and Literatures

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POSTER#/STUDENT	FACULTY	DEPARTMENT
156 Cailen Jennings	Jennifer Wagner	Psychology
1 Monique Johnson	Nancy Liu Sullivan	Biology
93 Adonia Johnson	Jane Marcus-Delgado	Political Science and Global Affairs
100 Roseana Jolly	Lana Karasik	Psychology
5 Arjon Kapica	Alfred Levine	Engineering Science and Physics
93 Jessica Kauapirura	Jane Marcus-Delgado	Political Science and Global Affairs
166 Kamal Kaur	Kristen Gillespie-Lynch	Psychology
61 Nadine Kawas	Jane Marcus-Delgado	Political Science and Global Affairs
56 Caroline Kelley	Jane Marcus-Delgado	Political Science and Global Affairs
120 Shahrukh Khan	Dan McCloskey	Psychology
164 Spogmay Khan	Kristen Gillespie-Lynch	Psychology
231 Michael Kholodovsky	Deborah Sturm Kristen Gillespie-Lynch	Computer Science
12 Joon Kim	Xiaowen Zhang	Computer Science
207 Yearnsun Kim, AAS, RN	June Como	Nursing
35 Dhana Kindelpitiya	Sara Guariglia	Biology
24 Regina Klimchuk	Krishnaswami Raja	Chemistry
179 Tulay Kocer	Judit Kerekes	Curriculum and Instruction
221 Sandra Kurylonek	Alejandra Alonso	Biology
4 Michelle Kushnir	Dwight Richards	Engineering Science and Physics
109 Teddy LaBarca	Halil Ege Ozen	Political Science and Global Affairs
208 Rebecca Larkin, AAS, RN	Regina Lama	Nursing
94 Brenda Lazar	Jane Marcus-Delgado	Political Science and Global Affairs
177 Wendy Lee	Florette Cohen	Psychology
97 Aviva Lehrfield	Jennifer Wagner	Psychology
159 Tirza Lehrfield	Lana Karasik	Psychology
89 Brandon Lei	Jean-Philippe Berteau	Physical Therapy
82 Ardijana Lekperic, AAS, RN	June Como	Nursing
216 Dominick Leon	Francisco Salgado-Robles	World Languages and Literatures
20 Hanjia Li, AAS, RN	Regina Lama	Nursing
56 Jianqi Long	Jane Marcus-Delgado	Political Science and Global Affairs
126 Jessica Longo	Collette Chapman-Hilliard	Psychology
215 Briana Lopez	Francisco Salgado-Robles	World Languages and Literatures
66 Tayla Lugo	Lara Saguisag	English
135 Mohamed Mahmoud	Greg Phillips	Biology
54 Tony Mai	Natacha Gueorguieva	Computer Science
82 Valeriya Malysheva, AAS, RN	June Como	Nursing

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POSTER#/STUDENT	FACULTY	DEPARTMENT
101 Aliya Mambetalieva	Greg Phillips	Biology
29 Cathy Marra, AAS, RN	Regina Lama	Nursing
140 Johnathan Martinez	Aleksander Haber	Engineering Science and Physics
39 Anthony Massa	Kristin Gillespie-Lynch	Psychology
168 Laryna Matskiv	Grozdena Yilmaz	Biology
196 Marina Matta	Jennifer Wagner	Psychology
207 Marketta McGarrell, AAS, RN	June Como	Nursing
162 Christine McWatt	Ellen-ge Denton	Psychology
5 Julio Mezarina	Alfred Levine	Engineering Science and Physics
202 Sabrina Mines	Abdeslem El Idrissi	Biology
138 Kevin Mione	Gerry Milligan	World Languages and Literatures
78 Sidhartha Mishra	Xiaowen Zhang	Computer Science
133 Heba Mohareb	Alfred Levine	Engineering Science and Physics
84 Valerie Molinari, AAS, RN	June Como	Nursing
14 Christopher Morabito	Matt Brim	English
212 Chelsea Morales	Francisco Salgado-Robles	World Languages and Literatures
75 Alexa Moran	Heidi Bertels	Management
214 Alexa Moran	Francisco Salgado-Robles	World Languages and Literatures
199 Andrew Morchik	Dwight Richards	Engineering Science and Physics
213 Katherine Moreno	Francisco Salgado-Robles	World Languages and Literatures
229 Alyssa Morganti	Matt Brim	English
100 Tamara Moseley	Lana Karasik	Psychology
123 Ziya Movsumov	Alfred Levine	Engineering Science and Physics
91 Siobhan Murphy, AAS	June Como	Nursing
146 Shanee Navon	Beatrix Reinhardt / Chris Verene	PCA
38 Jamie Nichilo, AAS, RN	Regina Lama	Nursing
194 Vincent Nicoletta	William Wallace	Biology
64 Dylan Niquette	Alfred Levine	Engineering Science and Physics
36 Rita Obeid	Patricia Brooks	Psychology
37 Ayomiku Ojetola	Patricia Galletta	Accounting and Finance
230 Kasie Okpala	Deborah Sturm / Dan McCloskey	Computer Science
22 Daniel Orozco	Claudia Mitzeliotis	Nursing
201 Margot Otavalo	Abdeslem El Idrissi	Biology
33 Henryka Paczkowski, AAS, RN	Regina Lama	Nursing
215 Jennifer Padilla	Francisco Salgado-Robles	World Languages and Literatures

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POSTER#/STUDENT	FACULTY	DEPARTMENT
208 Lori Pagano, AAS, RN	Regina Lama	Nursing
212 Sandy Palaguachi	Francisco Salgado-Robles	World Languages and Literatures
119 Johna Palladino	Timothy Ricker	Psychology
69 Christopher Paradiso	Natacha Gueorguieva	Computer Science
205 Soyean Park	Yumei Huo	Computer Science
108 Katherine Park, AAS, RN	Regina Lama	Nursing
50 Nicholas Pascone	Jane Marcus-Delgado	Political Science and Global Affairs
53 Dimitrios Pavlidis	Aleksander Haber	Engineering Science and Physics
153 Dimitrios Pavlidis	Aleksander Haber	Engineering Science and Physics
55 Juan Pena	Jane Marcus-Delgado	Political Science and Global Affairs
141 Mark Perelman	Paolo Cappellari	Marketing
46 Ashley Perry	Dan Zhang	Marketing
84 Jaime Petrosino, AAS	June Como	Nursing
107 Nicole Pillarella	Krishnaswami Raja	Chemistry
211 Gabriela Pineda	Francisco Salgado-Robles	World Languages and Literatures
47 Christopher Pinto	Alan Benimoff	Engineering Science and Physics
33 Carla Piscitello, AAS, RN	Regina Lama	Nursing
125 Rachel Postiglione	Richard Flanagan	Political Science and Global Affairs
2 Peter Principe	Sebastien Poget	Chemistry
101 Albert Ptashnik	Greg Phillips	Biology
232 Alyssandra Marie Puglisi	Andrew Lambert	Philosophy
15 Annalise Puntorno	Gloria Gianoulis	English
35 Yohanna Quezada	Sara Guariglia	Biology
230 Zhi Qui	Deborah Sturm Dan McCloskey	Computer Science
217 Jessica Quiroz	Francisco Salgado-Robles	World Languages and Literatures
111 Dardan Ramadani	Alan Lyons Alfred Levine	Chemistry
104 Jose Ramirez	Sarah Berger	Psychology
119 Cinthya Ramirez	Timothy Ricker	Psychology
200 Victor Ramirez	Cesar Arenas-Mena	Biology
22 Lucia Ramirez Ruiz	Claudia Mitzeliotis	Nursing
60 Bianca Randazzo	Jane Marcus-Delgado	Political Science and Global Affairs
84 Jennifer Randuazzo, AAS	June Como	Nursing
115 Mahwish Razi	Alexandru Voicu	Economics
33 Alyssa Reilly, AAS, RN	Regina Lama	Nursing
52 Sydney Resto	Darryl Hill	Psychology

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POSTER#/STUDENT	FACULTY	DEPARTMENT
229 Rebecca Ritz	Matt Brim	English
57 Wendy Rodriguez	Jane Marcus-Delgado	Political Science and Global Affairs
18 Sebastian Rodriguez Gómez	Regina Lama	Nursing
51 Aldo Rodriquez	Jane Marcus-Delgado	Political Science and Global Affairs
224 Shantel Rowe	Ava Chin	English
163 Svetlana Rozigov	Abdeslem El Idrissi	Biology
79 Svetlana Rozigov	Irina Sekerina	Psychology
122 Svetlana Rozigov	Irina Sekerina	Psychology
38 Phyllis Rubin, AAS, RN	Regina Lama	Nursing
108 Cindy Rucabado	Regina Lama	Nursing
31 Sarah Lina Saad	Jimmie Fata	Biology
102 Pascale Saad	Sarah Berger	Psychology
25 Rodina Sadek	Probal Banerjee	Chemistry
106 Andrew E. Sadek	Krishnaswami Raja	Chemistry
215 Samantha Salcedo	Francisco Salgado-Robles	World Languages and Literatures
71 Kared Sampedro	Anat Niv-Solomon	Political Science and Global Affairs
1 Brianna Sampson	Nancy Liu Sullivan	Biology
38 April Scarcella, AAS, RN	Regina Lama	Nursing
145 Amanda Schettini	Nora Santiago	GIS Services
22 Alexis Sciarrino	Claudia Mitzeliotis	Nursing
48 Jessica Scicchigno	Valkiria Duran-Narucki	Psychology
157 Miriam Sedrak	Florette Cohen	Psychology
59 Mohammad Shahout	Jane Marcus-Delgado	Political Science and Global Affairs
207 Fatima Shaikh, AAS, RN	June Como	Nursing
29 Amy Shao, AAS, RN	Regina Lama	Nursing
1 Abisola Shittu	Nancy Liu Sullivan	Biology
73 Scott Shouldis	Alfred Levine	Engineering Science and Physics
200 Sarun Shrestha	Cesar Arenas-Mena	Biology
223 Sabina Shukurova	Abdeslem El Idrissi	Biology
91 Patricia Sirsick, AAS, RN	June Como	Nursing
213 Raul Sisalima	Francisco Salgado-Robles	World Languages and Literatures
72 Saleh Smadi	Abdeslem El Idrissi	Biology
85 Keirra Smith	Jane Marcus-Delgado	Political Science and Global Affairs
200 Nyah Smith	Cesar Arenas-Mena	Biology
80 Tsz Yan So	Chao Li	World Languages and Literatures
1 Norhan Sobhi	Nancy Liu Sullivan	Biology
94 Alex Soto	Jane Marcus-Delgado	Political Science and Global Affairs

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POSTER#/STUDENT	FACULTY	DEPARTMENT
44 Jessica Spensieri	Jason Bishop	English/Linguistics
20 Angela Spitalieri, AAS, RN	Regina Lama	Nursing
91 Kaitlin Sullivan, AAS, RN	June Como	Nursing
171 Melvin Summerville	Aleksander Haber	Engineering Science and Physics
40 Timothy Sweeney	Mikael Vejdemo-Johannson	Mathematics
143 Timothy Sweeney	Nora Santiago	GIS Services
32 Palwasha Syar	Jimmie Fata	Biology
42 Irteza Syed	Natacha Gueorguieva	Computer Science
140 Anastasia Tataru	Aleksander Haber	Engineering Science and Physics
59 Ribhe Tayeh	Jane Marcus-Delgado	Political Science and Global Affairs
16 Rocio Mora Tencio, AAS, RN	Regina Lama	Nursing
182 Sean Thatcher	Jane Alexander	Engineering Science and Physics
63 Liya Thomas	Timothy Ricker	Psychology
158 Liya Thomas	Jean-Philippe Berteau	Physical Therapy
16 Diana Tlatenchi, AAS, RN	Regina Lama	Nursing
16 Gorhanny Torres Rojas	Regina Lama	Nursing
208 Jacqueline Travolino, AAS, RN	Regina Lama	Nursing
82 Jacqueline Travolino, AAS, RN	June Como	Nursing
167 Anna Trotta	Parvene Farhoody	Psychology
165 Jonathan Vanmanen	Jimmie Fata	Biology
212 Elaine Vasquez	Francisco Salgado-Robles	World Languages and Literatures
154 Tetiana Vasyleva	David Lindo-Atichati	Engineering Science and Physics
198 Emily Vaughn	Sarah Berger	Psychology
207 Edna Vega, AAS, RN	June Como	Nursing
214 Iker Vidals	Francisco Salgado-Robles	World Languages Literatures
29 Maria LourdesVillalobos Ruiz	Regina Lama	Nursing
181 Gabrielle Viso	Christopher Anderson	Media Culture
6 Fina Vitale	Chang-Hui Shen	Biology
180 Viktoriya Volkova	Abdeslem El Idrissi	Biology
11 Sabrina Walters	Patricia Brooks	Psychology
41 Michael Weitzman	Alan Lyons	Chemistry
127 Christian Winston	Christina Tortora	English/Linguistics
74 Pasini Withanage	Edward Miller	Media Culture
88 Ewa Wojciechowska	Christina Tortora	English/Linguistics
27 Steven Wojcik	Louis Petingi	Computer Science
65 Anthony Wong	Timothy Ricker	Psychology
87 Suki Wong, AAS, RN	Barbara Schiano	Nursing

Undergraduate Conference on Research, Scholarship, and Performance— Student Scholars (cont.)

POSTER #/STUDENT	FACULTY	DEPARTMENT
121 Pi Yan	Alfred Levine	Engineering Science and Physics
229 Janell Yik	Matt Brim	English
169 Arslan Younis	Alfred Levine	Engineering Science and Physics
199 Arslan Younis	Dwight Richards	Engineering Science and Physics
176 M. Achraf Youzbachi	Alfred Levine	Engineering Science and Physics
207 Vicki Yu, AAS, RN	June Como	Nursing
159 Martina Zakir	Lana Karasik	Psychology
130 Bahtiyr Zakirov	Allen Tesdall	Mathematics
131 Nisma Zakria	Collette Chapman-Hilliard	Psychology
99 Juliana Zaloom	Lana Karasik	Psychology
142 Xuan Zhan	Patricia Galletta	Accounting and Finance
230 Yoni Zomick	Deborah Sturm Dan McCloskey	Computer Science
105 Nicole A. Zubrich	Krishnaswami Raja	Chemistry

Chair

Mel Pipe
Associate Provost for Graduate Studies,
Research and Institutional Effectiveness

Planning Committee	Department
Janice Awerbuch	Design Services
Bill Bauer	Performing and Creative Arts
Jonna DeSantis	Associate Provost for Graduate Studies, Research and Institutional Effectiveness
Danielle Dimitrov	Diversity and Compliance
Tony Gallego	Media Services
Donna Garambone	Alumni Relations
Manny Gonzales	President's Office
Betsy Greene	Campus Planning
Philip Halsey	Reprographics
John Jankowski	Center for the Arts
Debbie Mahoney	President's Office
George Mallon	Public Safety
Jessica Stein	Academic Affairs
Jennifer Straniere	Performing and Creative Arts
Joyce Taylor	Web/Technical

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