Ramapo College’s Eighth Annual

SCHOLARS’ DAY

A CELEBRATION OF STUDENT CREATIVITY & SCHOLARSHIP

Join us for our Virtual Scholars’ Day on
FRIDAY, APRIL 17, 2020

Posters and oral presentations will be viewable at
https://www.ramapo.edu/scholarsday/

Synthesize, synchronize and spark!
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Faculty Mentor: Eman Abdelfattah

IN APPRECIATION

SCHOLARS’ DAY COMMITTEE
Ramapo College’s Eighth Annual “Scholars’ Day: A Celebration of Student Creativity and Scholarship,” is an opportunity for the entire community to celebrate the creative and scholarly achievements of our students. Sponsored by the Office of the Provost, Scholars’ Day showcases some of the finest faculty-mentored student creativity and scholarly activities undertaken in 2019-20. The event includes both poster and oral presentations. This year 20 student submissions were accepted for the Scholars’ Day presentations. Five of these students were selected by the Dean of each of the College’s schools from finalists nominated by faculty through Conveners, to make oral presentations of their work. Seventeen of these 20 students were able to submit their work, overcoming the obstacles posed by the unusual times in which we live. Fourteen majors are represented, with project topics ranging from “The Monster that is A Man: A Feminist View of William Shakespeare’s *Much Ado About Nothing* and *A Midsummer Night’s Dream*” to “Impact of Virtual Reality on Brand Development and Recognition” to “Cis-regulatory G-quadruplex Motifs are Preferentially Associated with Splice Sites in the Protein-Coding Human Genome.”

This is a juried event and each poster was recommended by the convening group of the major or minor associated with the project. In addition, the Dean of each school selected one poster to be given as both a poster and an oral presentation. Scholars’ Day is an annual event held near the end of each spring semester. You may view all posters, and the video-taped presentations at www.ramapo.edu/scholarsday
Dear Students, Faculty, and Friends,

Scholars' Day was established eight years ago to bring together students and faculty from across the schools in celebration of our students’ creative work and scholarly research. Like you, I was sincerely looking forward to hearing the presentations, talking with students and their faculty mentors, and meeting family and friends at this year’s event. While we cannot gather in the same room as originally, I am thrilled that the Scholars' Day Committee has organized a way to showcase the oral and poster presentations. It speaks to our community's perseverance and inventive ways we are now connecting with one another.

I invite you to watch the videos and read the posters online. This year’s Scholars’ Day presentations embody Ramapo’s mission of interdisciplinarity and experiential learning. There is a tremendous variety in the work presented: where else can you explore, in one place, topics such as DNA and genome research, an analysis of economy and social disparity in Chile, virtual reality impacts on brand recognition, animations representing common bacteria, a literary analysis of The Divine Comedy, and more?

I am immensely proud to be part of the Ramapo community and am thoroughly impressed by the way we have all adapted. Thank you to Professor Joel Weissman, Chair of the Committee, and the entire Scholars’ Day Committee, for their hard work: Professors Carrie Miller, Dolly Sacristan, Malavika Sundararajan, and Marta Vides Saade. Thank you to all faculty mentors, for your tireless efforts and support of your students. Thank you to all the friends and family members who will celebrate with us.

Finally, thank you to all Ramapo students who submitted an abstract and congratulations to all those accepted for Scholars' Day. This is a wonderful academic achievement, and I applaud you for your persistence and dedication.

Wishing you all the best,

Dr. Susan Gaulden
Interim Provost & Vice President
for Academic Affairs
ORAL PRESENTATIONS
The oral presentations are available as viewable videos on the website at https://www.ramapo.edu/scholarsday/

ANISFIELD SCHOOL OF BUSINESS
“The Economic Impact of Ramapo College on Surrounding Communities”
KEVIN DUQUE, ROBERT J. WALSHE
(Faculty Mentor: Charles Steindel)

SCHOOL OF CONTEMPORARY ARTS
“Pathogens & Large Microbial Diversity found in Source-to-Distribution Drinking Water of Remote Communities in Northern Australia (2017-2019)”
EDUARDO CERMENO
(Faculty Mentor: Ann Lepore)

SCHOOL OF HUMANITIES AND GLOBAL STUDIES
“A Phenomenological Approach to Transgender Erasure in the United States”
MEGAN ROSE
(Faculty Mentor: Marta Vides Saade)

SCHOOL OF SOCIAL SCIENCE AND HUMAN SERVICES
“Establishing Protection for Muzzled Victims: Confronting “the Link””
TAYLOR PULUSE
(Faculty Mentor: Sanghamitra Padhy)

SCHOOL OF THEORETICAL AND APPLIED SCIENCE
“Virulence factors of Pseudomonas aeruginosa: Investigating the differential regulation of the pyocyanin pigment in a polymicrobial setting”
MICHAEL GRUNE, SHAMALA RAJA
(Faculty Mentor: Kokila Kota)
ABSTRACTS

The following abstract and poster presentations are available for viewing on the website at https://www.ramapo.edu/scholarsday/

ANISFIELD SCHOOL OF BUSINESS

STUDENT PRESENTERS:
Kevin Duque, Robert J. Walshe

FACULTY MENTOR:
Charles Steindel

MAJOR:
Economics

SCHOOL:
Anisfield School of Business

PROJECT TITLE:
The Economic Impact of Ramapo College on Surrounding Communities

ABSTRACT

With the academic assistance and guidance from Dr. Steindel of the Anisfield School of Business (ASB), we (Kevin Duque and Robert Walshe) have prepared data that examine Ramapo College’s direct and indirect local and state-wide economic impacts since 2016. The project focuses on deriving Gross Domestic Product (GDP) calculations by utilizing three diverse methods. The first takes into account the difference between an economic entity’s sales and purchases, otherwise denoted as the value added that inputs into production have accumulated through business operations. The second method permits an examination of the organization’s generated income – for our case in particular, we had to accumulate and consider the salaries and wages of the staff over the past four years. The last and most inclusive method, required collecting salary data from the Bureau of Labor Statistics (BLS) and GDP estimates from the Bureau of Economic Analysis (BEA). Considering that Ramapo College is a public institution associated with the state government, the salaries at the college had to be compared, year by year, to the aggregated salary amounts earned by Bergen County employees who provide educational services, as well as those of New Jersey as a whole. Each of these three methods of calculating Ramapo College’s direct impacts presented indistinguishable results.

In order to successfully calculate the indirect impact of Ramapo College, the multiplier effect had to be considered – how does the institution’s existence affect consumer spending behaviors in Bergen County and New Jersey, and do the services provided attract more individuals than if the college itself had been replaced with another organization? These are the types of questions that we tackled with the inclusion of the multiplier effect. We will make it our priority to present the data with sincerity, in that we will avoid overstating the impact of the College.
ABSTRACT
A variety of trends related to Virtual Reality (VR) and its application in the field of advertising have been predominantly positive, yet there are instances where it has had a negative impact on consumer buying decisions. Even though people who use VR in relation to a brand tend to support and invest more money with the brand, in certain instances the simulation is not realistic, and in other cases, it could be overwhelming and elicit a negative brand image. My study thus aims to specifically understand if VR based advertising can reduce brand value. The study will hence propose a VR simulation for a top online retail brand founded on prior research and discuss its research design model to study its impact on brand reputation.
ABSTRACT
In Northern Australia, remote communities receive their drinking water from bores that access groundwater. In the wet season, these aquifers contain high levels of iron, which is natural, yet not safe for human consumption. This gives iron bacteria and other pathogens the opportunity to thrive in these waters. Because of this microbiological issue, many in Northern Australia and Southeast Asia have fallen ill to Melioidosis, also known as Whitmore’s disease. Many studies have been conducted and published in order to bring attention to the management for water supplies in the wet-dry tropics.
On October 18, 2019, high school students in Santiago, Chile initiated a revolt that was triggered by the government’s transportation fare increase of thirty pesos to travel by metro. What began as a student protest quickly extended to violent protests across the country that led to the death of 36 people, 2,500 injuries and 2,840 arrests. My capstone thesis explores how these protests go beyond the transportation fare increase; in fact, Chileans’ anger originates from decades of social class inequality in Chile.

For a long time, Chile had been considered an economic model in Latin America. The reason for this status is that, in economic terms, Chile occupied first place in South America for a long time with a gross domestic product (GDP) of $24,588. President Sebastián Piñera, current president in Chile for a second mandate, promised the country he would initiate social and economic reforms for problems such as affordable medical insurance, reduction of drug prices and stabilization of electricity prices. However, Chilean citizens found themselves struggling to pay their bills and expenses each month. My presentation will compare Chile’s past and present economic situation and evaluate the social class disparity in Chile.
SCHOOL OF HUMANITIES AND GLOBAL STUDIES (continued)

STUDENT PRESENTER:
Gina Gerbasio

FACULTY MENTOR:
Rosetta D’Angelo

MAJOR:
Literature

SCHOOL:
School of Humanities and Global Studies

PROJECT TITLE:
Dante’s Journey to Find Balance within Duality in The Divine Comedy

ABSTRACT
Dante Alighieri’s, The Divine Comedy, is widely regarded as one of the most influential pieces of poetry in World Literature. Aside from introducing the poetic style of Terza Rima, the trilogy established the importance of changing and expanding language to fit evolving and more complex themes and character development. As the events of the trilogy play out, Dante finds himself facing more difficult challenges and decisions, and the way in which these events are introduced and dealt with define yet another unique feature of Dante’s work that shapes much of the future of writing itself.

Perhaps the most crucial manner of dealing with challenges in the trilogy is the way in which Alighieri chose to present them. He writes from the point of view of himself, the poet, describing a pilgrim who goes by the same name experiencing a journey indicative of the one he, himself, went through: the main difference being that, while Alighieri faced a metaphorical journey, Dante the pilgrim faces a literal journey from the depths of Hell to Purgatory to Paradise. This dual version of Dante, himself, is only the first of many dualities presented in the trilogy.

This paper explores the dualities of Dante’s existence, intellect and emotion, love and sin, and sin and sinner in connection to the way in which they make evident the importance of establishing and maintaining balance between both aspects of each duality to ensure an understanding of one’s identity as a flawed human with the capacity to grow and develop.

This paper concludes that this use of multiple dualities chronologically presents Dante’s metaphorical and literal journey as he rediscovers himself and his connection to God, as well as the overall importance of maintaining duality in all aspects of life.
“The Monster that is A Man: A Feminist View of William Shakespeare’s "Much Ado About Nothing" and "A Midsummer Night’s Dream"”

ABSTRACT

“The Monster that is A Man: A Feminist View of William Shakespeare’s "Much Ado About Nothing" and "A Midsummer Night’s Dream"” explores the feminist aspects hidden within Shakespeare’s comedies. Women during sixteenth-century England depended on men both emotionally and physically. They were expected to obediently complete the duties of housewives and bear their husbands plenty of children. However, even during this time individuals of both genders fought for women’s equality, and promotion of this equality was usually seen through the arts, or more specifically, through literature. One example of this can be seen in William Shakespeare’s comedic plays, through which he promoted feminist values during the late sixteenth century. The actions and dialogue of the female characters within his comedies, specifically "Much Ado About Nothing" and "A Midsummer Night’s Dream", show how Shakespeare provides direct and discreet parallels with the feminist theories of the twenty-first century. Examples from the written versions of both plays and literary criticism sources allow the audience to explore Shakespeare’s use of symbolism through characters’ words and actions. The metaphorical verbiage used within the plays is also a tool that Shakespeare uses to promote feminism. Examining these ideas is important because they represent a woman’s struggle to find a voice and speak truth to power against current societal biases, expectations, and stereotypes towards them. Through his works, Shakespeare has exposed the struggles of women in the sixteenth century in ways that are relatable to contemporary women. For example, women today are still criticized for not keeping their virginity and remaining “pure” before marriage, and many are still manipulated into making decisions that they do not want to like Beatrice in "Much Ado". It is the continuing relevance of this issue that shows that a woman’s struggle for freedom from men is truly timeless.
STUDENT PRESENTER:
Audrey Miller

FACULTY MENTOR:
Marta Vides Saade - College Honors Program

MAJOR:
Accounting

SCHOOL:
School of Humanities and Global Studies – Submitted for Philosophy via College Honors Program

PROJECT TITLE:
Ethically Managing Power Imbalances in Divorce Mediation

ABSTRACT
Divorce is a life-changing, often emotional time. Some couples desire compassion and kindness that is lacking in a competitive, adversarial justice system. Alternative dispute resolution processes, like collaborative law and mediation, are alternatives in practice and taught in law schools. Ideally, divorce mediation is a process where two parties work out mutually beneficial agreements for their divorce. However, power imbalances (which could stem from gender, wealth, and other variables) could allow the more powerful party to influence the negotiation unfairly. Mediators elicit the parties to communicate with each other and practice active listening, but also need to direct the conversation at times for the session to be constructive. I researched how a mediator can ethically manage power imbalances in divorce mediation and I applied the tactics to a hypothetical case study.
ABSTRACT

It can be wholly beneficial for a reader to understand a writer’s cultural and historical background while analyzing a text. Even more, it is useful for readers to apply biographical and historical approaches while comparing two texts. Specifically, it seems worthwhile to use the biographical contexts of Palestinian writer, Laila Al-Sa’ihih, while comparing her poem, *Intimations of Anxiety*, to French writer, Jean Follain’s poem, *Face the Animal*, because both writers construct their poems in a way that highlight postwar emotion. For starters, Al-Sa’ihih was born in 1936 in Palestine (Cooke 16). According to one of her written biographies, “*Intimations of Anxiety* taken from her latest work, *Roots That Do Not Depart* (1984) is her poetic diary about the 1982 Israeli invasion of Beirut” (16). Similarly, Follain’s poem, *Face the Animal*, also includes historical influence from war in France. Follain was born in Normandy, France, living from 1903-1971 (Poetry Foundation). Living through both World Wars where France was a world power, it becomes clear that “Jean Follain’s work is inextricably linked to Canisy, the small Normandy town where he was born in 1903... World War I changed the social patterns and the psychic landscape of Europe beyond recognition” (Bankier 28). Therefore, both Al-Sa’ihih and Follain infuse their poetry with personal and historical context from their respective cultural experiences in their respective countries. However, *Intimations of Anxiety* and *Face the Animal* are comparable in themes of anxiety and fear while also different in terms of the poems’ tone and outlook.
ABSTRACT
In this paper I will argue that the historical and continued suppression and attempted erasure of transgender individuals in America may be explained as an on-going process through the use of phenomenology. Especially since the election of Donald Trump, many issues surrounding the LGBTQ+ community, once considered resolved, have re-arisen, including the rights and visibility, or lack thereof, of transgender individuals; from police brutality, to serving in the military, and, most recently, whether they may be legally terminated from their jobs on the basis of their identities and expressions of them. I have chosen to research the historical and current trends of transgender erasure, as it seems the current administration is attempting to dissolve any autonomy these people currently possess. Within my research I have discovered interesting helpful distinctions such as the necessity of visibility before invisibility, which is self-imposed, and erasure, which is imposed by others, and the effect of Western suppression of gender fluidity such as the insistence for individuals to fit in one of the two binary gendered “boxes.” My key insight was to see the usefulness of phenomenology as an explanation for the persistence of re-emerging discussions of visibility and basic rights for those who are transgender within the United States. Up until this point there has been little to no philosophical discussion on this topic, especially by transgender philosophers. Most philosophical discussion has been on the periphery of more general gender work.
ABSTRACT

Animal abuse and domestic abuse are not contained in any specific social sphere but rather, such abuses claim the lives of victims everyday around the world. Recent studies conducted by animal advocates in South Carolina and Texas, have unveiled the dominant connections between the horrific abuse against the family pet and domestic abuse experienced by women, children, and the elderly. The connection between the abuse of an animal and violence towards individuals, more modernly known as “the Link,” has been studied by numerous philosophers and scholars for centuries. In a modern context, “the Link” is a concept that is under-recognized by law enforcement, healthcare professionals, and society as a whole. It is evidently clear that animal abuse, more specifically the abuse of a family pet, is a disturbing phenomenon whose “spillover effects” increases violence and threatens both individuals and society. This study will utilize various legal, ethical, qualitative, and empirical studies to evaluate the underlying factors that contribute to the crime of animal cruelty in the United States. Additionally, this study will analyze the Link between animal abuse and domestic abuse to unveil the phenomenon that occurs at micro-levels against companion animals. Factors such as masculine power structures, psychological disorders, exposure to domestic abuse, subjection to corporal punishment, and the lack of recognition for animal rights will all be highlighted as they each possess an inherent causality of animal cruelty. Moreover, this study will offer recommendations how animal abuse against the family pet can be prevented and addressed properly through the appointment of legal guardianship for companion animals. To allow the abuse of the family pet to go unhindered in society is to allow for a toxic environment to thrive and threaten the lives of humans and animals alike.
ABSTRACT
Gun violence is a subject that receives widespread news coverage across the United States and is something that can affect the quality of life of American citizens adversely. This study focuses on the geographical and sex-related trends of gun violence in the United States. A dataset provided by the US Gun Violence Archive (GVA) was analyzed for the years 2013-2018 and findings were visualized using the pandas, folium, and matplotlib libraries in Python 3. This study found that although some states have strict gun laws, it does not mean there are fewer gun violence incidents in those states. It was also observed that gun violence deaths are generally present in cities and densely populated areas. Additionally, a majority of gun violence involves males.
SCHOOL OF THEORETICAL AND APPLIED SCIENCE (continued)

STUDENT PRESENTERS:
Kaelea Composto, Jonathan Gajewski

FACULTY MENTOR:
Suma Somasekharan

MAJOR:
Biology

SCHOOL:
School of Theoretical and Applied Science

PROJECT TITLE:
Expression of membrane transporters in Sertoli cells

ABSTRACT
Sertoli cells in the testes play a pivotal role in spermatogenesis. Mice deficient in the transporters Sodium Potassium chloride cotransporter-NKCC 1 failed to produce sperm indicating a role for NKCC1 and possibly other membrane transporters in spermatogenesis. Defects in the CFTR gene are also associated with loss of fertility. The long-term goal is to understand the relative expression patterns and the role of NKCC1 and other membrane transporters namely Sodium Hydrogen exchanger- NHE1, the ceramide transporter ABCA12, and the Sodium bicarbonate transporter NBCe1 and CFTR in spermatogenesis. In this poster, we will present protocols that are being developed to study the expression of these transporters. A mouse Sertoli cell line -TM4 was cultured. Total RNA was extracted from these cells. Primers were designed and obtained for NKCC1, NHE1, CFTR, ABCA12, NBCe1 and the housekeeping protein GAPDH (Glyceraldehyde-3 phosphate dehydrogenase). Initial studies were carried out using RT-PCR (reverse transcriptase-polymerase chain reaction) to determine the basal expression of NKCC1, ABCA 12 and the housekeeping protein GAPDH (Glyceraldehyde phosphate dehydrogenase).
STUDENT PRESENTERS:
Luke Connell, Narayan Pokhrel, Michael Logan, Craig Voss

FACULTY MENTOR:
Daniela Buna

MAJOR:
Engineering Physics

SCHOOL:
School of Theoretical and Applied Science

PROJECT TITLE:
Thermal Characterization of Semiconductor Bi2Te3 Alloys using Differential Scanning Calorimetry- preliminary study

ABSTRACT
Thermoelectric generators are a simple, robust and attractive option for harvesting thermal waste. Due to the increasing global demand for energy, climate change and a need for sustainable energy solution, thermoelectric generators are a very appealing, clean option. Despite their relatively low efficiency, recent developments in nanotechnology prove that their response can be improved. Therefore, a resurgence of research projects have been dedicated to increasing their thermopower while reducing the thermal conductivity and increasing the Seebeck coefficient and electric conductivity of the electrical contacts. The most common thermoelectric material is Bismuth Telluride Bi2Te3 doped with various impurities such a Selenium, antimony, etc. Numerous fabrication and characterization methods have been studied in order to increase the Seebeck coefficient. Two of the most common start with a hot alloy of Bi2Te3 (most common) or a mechanical (cold) alloy of Bi2Te3. The goal of this work is to test whether various fabrication methods of cold alloys lead to similar heat capacity values for the alloy, therefore offering a simpler, less expensive method of fabrication.
STUDENT PRESENTERS:
Jonathan Gajewski, Kaelea Composto

FACULTY MENTOR:
Suma Somasekharan

MAJOR:
Biochemistry

SCHOOL:
School of Theoretical and Applied Science

PROJECT TITLE:
Cloning of a His-tagged Firefly Luciferase gene into a pET expression vector

ABSTRACT
Luciferase is an enzyme that catalyzes the ATP dependent-oxidation of luciferin resulting in the generation of light. We are interested in affinity purification of the Firefly luciferase using a bacterial overexpression system. We used the cloning vector pGEM-luc. The goal of the project is to generate a recombinant DNA construct of a His-tagged luciferase gene in a pET expression vector that can be overexpressed in E.coli and the luciferase protein purified using Affinity purification. The pET 30a vector an expression vector with an N-terminal His-tag was chosen as the expression vector of choice. To clone the luciferase gene into the pET vector in the proper orientation, PCR was used to obtain the luciferase gene fragment with restriction sites for Bam H1 and Sac1 flanking the gene. The gene was then ligated into the pET vector.
STUDENT PRESENTER:
Vanesa Getseva

FACULTY MENTORS:
Scott Frees and Paramjeet S. Bagga

MAJOR:
Computer Science

SCHOOL:
School of Theoretical and Applied Science

PROJECT TITLE:
Cis-regulatory G-quadruplex Motifs are Preferentially associated with Splice Sites in the Protein-Coding Human Genome

ABSTRACT
Expression of mammalian genes involves regulated RNA splicing. Most human genes undergo alternative splicing during gene expression. As a result, the human protein-coding genome provides a rich variety of proteins with complex and diverse functions. It is estimated that up to one-fifth of human diseases are associated with altered splicing.

Our lab studies the role of cis-regulatory motifs, such as Quadruplex forming G-Rich Sequences (QGRS) in RNA processing. We focus on computationally identifying QGRS distribution patterns near splice sites in the human protein-coding genome and investigate their role in regulated splicing. Our dataset consists of 19,948 genes, 451,323 exons, 406,201 introns, and 365,167 unique splice sites based on the GRCh38 Homo sapiens assembly extracted from the Human Ensembl database. We have developed scripts in Python3 and C++, based on our previously established QGRS Mapper program, to map QGRS motifs.

Our analysis discovered a preferential association of QGRS motifs with splice sites in exons and introns. We observed differential QGRS distribution patterns between 5’ and 3’ splice sites. RNA QGRS motifs in the vicinity of specific splice sites may be involved in modulating splicing via interactions with regulatory proteins that bind G-rich sequences and influence splicing events. QGRS motifs were significantly more likely to overlap the alternatively spliced sites as compared to the constitutive sites, suggesting their role in regulated alternative processing. Our data shows that QGRS motifs are likely involved in influencing splicing of the human protein-coding genes on a genomic scale.

We are creating a UCSC Genome Browser Track Hub based on our mapped data to visualize the QGRS motifs and their prevalence on the human genome. Developing this freely accessible online Bioinformatics tool allows the world to be able to map QGRS motifs and analyze their distribution patterns on a genomic scale.
STUDENT PRESENTERS:
Michael Grune, Shamala Raja

FACULTY MENTOR:
Kokila Kota

MAJOR:
Biology

SCHOOL:
School of Theoretical and Applied Science

PROJECT TITLE:
Virulence factors of Pseudomonas aeruginosa:
Investigating the differential regulation of the pyocyanin pigment in a polymicrobial setting

ABSTRACT
Bacteria almost always exist in polymicrobial communities where communication or quorum sensing between intra-species and inter-species is very important in regulating their virulence gene expression. The focus of our research is to understand the differential regulation of quorum sensing genes in the bacteria Pseudomonas aeruginosa. P. aeruginosa is an opportunistic bacterium that often results in serious infections in health-care settings especially in immune compromised patients. This nosocomial opportunistic pathogen produces many virulence factors which are under the regulation of the quorum sensing gene circuit. One of the very important virulence factors of P. aeruginosa is the production of the blue-green pigment pyocyanin. We are using the pyocyanin production of the bacteria as phenotype readout to understand how the bacterium responds and regulates the gene expression in a polymicrobial setting. We co-cultured P. aeruginosa with various strains of gram positive and gram negative bacteria (Klebsiella pneumonia, Escherichia coli, Staphylococcus aureus, Enterococcus faecalis) which again are commonly found in nosocomial infections. Our preliminary results indicate that the expression of pyocyanin by the bacteria P. aeruginosa is highly dependent on the specific bacterial population that Pseudomonas encounters. We are currently quantifying the pyocyanin expression under various polymicrobial conditions using a colorimetric assay by a spectrophotometer. We are also working on generating the P. aeruginosa knockout strains for the pyocyanin production with a goal to compare the relative gene expression differences between the wild type and mutant strains. Our findings would help understand how several other virulence factors of P. aeruginosa are co-regulated with pyocyanin production. This could eventually provide valuable insight on the surveillance mechanisms of quorum sensing for Pseudomonas in detection of its bacterial neighbors and response by producing antimicrobial factors. Our findings can also suggest novel therapeutic strategies for treating P. aeruginosa dominated polymicrobial infections.
This research investigates three machine learning models and a comparison was conducted using different performance measures to determine which algorithm would effectively predict protein classifications based on residue count, structure of molecular weight, and protein sequences. Decision Trees, Random Forests and Extra Trees models are applied on a structural protein sequences dataset. This dataset also contains other features for extraction methods and details on protein structures. Based on the experiments that were conducted on these models, it was demonstrated that Extra Trees model had comparable results but marginally better than the Decision Trees and Random Forests models.
IN APPRECIATION

Thank you to all faculty mentors, Deans, students who participated, and staff who stood ready for the in-person event, and staff who made this transition online so seamlessly possible as well as to all of you who will view and enjoy these creative and scholarly achievements!

*With Special Appreciation to the Provost for her encouragement in these unusual times*

SCHOLARS’ DAY COMMITTEE

Joel Weissman, Chair (School of Contemporary Arts)
Carrie Miller (School of Theoretical and Applied Science)
Dolly Sacristan (School of Social Science and Human Services)
Malavika Sundararajan (Anisfield School of Business)
Marta Vides Saade (School of Humanities and Global Studies)