Queensborough Community College's

9th Annual Undergraduate Research and Creative Works Day

Friday

Dec 6th, 2024

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Undergraduate Research and Creative Works Day Planning Committee Welcome Remarks

December 6, 2024

Welcome to Queensborough Community College's 9th Annual Undergraduate Research and Creative Works Day! This event showcases *faculty-mentored undergraduate research and creative works efforts across the disciplines* at the college. The conference allows undergraduate students to present and discuss the results of their hard work in various fields.

In addition to providing the experience of presenting research posters and performances, the conference is an opportunity to learn about research and creative works projects carried out by other students and faculty across the disciplines on our QCC campus and to allow students to network with their peers and college faculty. It also aims to provide information on the various programs and opportunities on campus that provide funding and support for students and faculty to engage in such projects. We are delighted to share 80 *presentations*, showcasing the work of 149 *students mentored by 43 faculty members* over the past year. We gratefully acknowledge the efforts of faculty mentors, who have prioritized engaging students in research and creative works activities during this time. We also acknowledge the student participants, who despite many academic obligations take the time to participate in such projects and work very hard to bring us this exciting event. We would also like to thank *the Office of Academic Affairs, the CUNY Research Scholars Program at Queensborough Community College, the Office of Grants and Sponsored Programs, and the Student Government Association* for generously supporting the organization of this event.

The college is proud of the hard work and dedication of our faculty mentors and students participating in undergraduate research and creative works activities, and we are pleased to offer each of you the opportunity to participate in this excellent learning experience. Students that are presenting, we hope that you enjoy sharing the results of your hard work with the campus community. Students that are attending, we hope that the accomplishments of your peers will serve as an inspiration, and you will seek out similar opportunities and experiences on campus to participate in, as well!

To every student, congratulations on your achievements!

Sincerely,

Dr. Sarbani Ghoshal & Dr. Roumen Vragov, Co-chairs of the QCC Research Committee
Prof. Rezan Akpinar, Associate Professor, Health, Physical Education & Dance Department
Dr. Andrew Bulawa, Associate Professor, Mathematics & Computer Science
Dr. Patrick Byers, Assistant Professor, Social Sciences Department
Prof. Jennifer Chabra, Research Compliance Specialist, OAA
Ms. Christina Denny, Program Coordinator, QCC CRSP
Dr. Matthew Lau, Associate Professor, English Department
Dr. Paul Sideris, Associate Professor, Chemistry Department
Dr. Regina Sullivan, *QCC* CRSP Director & *Associate Professor,* Biological Sciences & Geology Department
Dr. Zhou Zhou, Assistant Professor, Chemistry Department

Undergraduate Research and Creative Works Day Schedule
December 6, 2024

11:00 am   **Registration & Poster Set-up**   **Student Union Lobby**

12:00 pm   **Welcoming Remarks**   **Student Union Lobby**

URCW Day Planning Team

Dr. Phyllis Curtis-Tweed, Provost & VP of OAA, QCC

Dr. Linda Bastone, Dean of Faculty, OAA, QCC

Dr. Ruth E Stark, Distinguished Professor, City College of New York

Dr. Ron Nerio, Research Program Director, CUNY Office of Research

Undergraduate Research –HIP Coordinators

12:25 pm   **Group Photo**   **Stairs between Library & Admin. Buildings**

12:40 – 2:45 pm   **Poster & Presentations**   **Student Union Lobby**

Panel Discussions   **Male Resource Center, SU**

2:45 – 3:00 pm   **Closing Remarks & Networking**   **Student Union Lobby**

Dr. Michael Pullin, Dean for Academic Initiatives, OAA, QCC

Undergraduate Research and Creative Works Day
Planning Committee

Sarbani Ghoshal
Biological Sciences & Geology
RC Co-Chair

Roumen Vragov
Business
RC Co-Chair

Rezan Akpinar
Health, Physical Education, and Dance

Andrew Bulawa
Mathematics & Computer Science

Patrick Byers
Social Sciences

Jennifer Chabra
Research Compliance Specialist, OAA

Christina Denny
Programming Coordinator, CRSP

Matthew Lau
English

Paul Sideris
Chemistry

Regina Sullivan
QCC CRSP Director

Zhou Zhou
Chemistry

QCC's Research Committee- Faculty Representatives by Department

Dr. Phyllis Curtis-Tweed, Provost and Vice President of Academic Affairs

Dr. Linda Bastone- Dean of Faculty & IRB Coordinator

Professor Moni Chauhan, Academic Affairs, Research Integrity Officer

Professor Kat Griefen, Art and Design Department

Professor Sarbani Ghoshal, Biological Sciences and Geology Department

Professor Roumen Vragov, Business Department

Professor Paul Sideris, Chemistry Department

Professor Kahlil Garner, Communication, Theatre, & Media Production Department

Professor Guozhen An, Engineering Technology Department

Professor Matthew Lau, English Department

Professor Carolina Chaves-O'Flynn, Modern Languages and Cultures Department

Professor Rezan Akpinar, Health, Physical Education and Dance Department

Professor Stephanie Rost, History Department

Ms. Laura Cohen, Kupferberg Holocaust Center

Professor Quintis Pinder, Library Department

Professor Lyubomir Boyadzhiev, Mathematics and Computer Science Department

Professor Michelle Rossi, Nursing Department

Professor Sunil Dehipawala, Physics Department

Professor Jacqueline Mulone, Social Sciences Department

Ms. Christine Spicknell, Office of Grants/Sponsored Programs

Professor Jennifer Chabra, Research Compliance Specialist

Professor Urszula Golebiewska, Undergraduate Research as a High-Impact Practice Coordinator, STEM & Social Sciences

Professor Heather Huggins, Undergraduate Research as a High-Impact Practice Coordinator, Arts & Humanities

2024 Research Committee Members

Kat Griefen
ART & DESIGN

Sarbani Ghoshal
BIOLOGICAL SCIENCES & GEOLOGY

Roumen Vragov
BUSINESS

Paul Sideris
CHEMISTRY

Kahlil Garner
COMMUNICATION, THEATRE, & MEDIA PRODUCTION

Guozhen An
ENGINEERING TECHNOLOGY

Matthew Lau
ENGLISH

Carolina Chaves O'Flynn
Modern LANGUAGES AND CULTURES
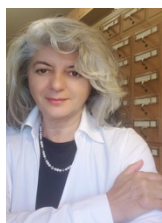
Rezan Akpinar
HEALTH, PHYSICAL EDUCATION, & DANCE

Stephanie Rost
HISTORY

Laura Cohen
KUPFERBERG HOLOCAUST CTR.

Quintis Pinder
LIBRARY

Lyubomir Boyadzhiev
MATH & COMPUTER SCIENCE

Michelle Rossi
NURSING
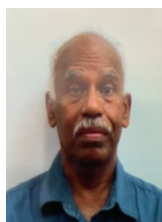
Sunil Dehipawala
PHYSICS

Jacqueline Mulone
SOCIAL SCIENCES

Urszula Golebiewska
BIOLOGICAL SCIENCES & GEOLOGY
UR-HIP STEM & SS

Heather Huggins
COMMUNICATION, THEATRE, & MEDIA PRODUCTION
UR-HIP A & H

Phyllis Curtis-Tweed, PROVOST AND VP OF ACADEMIC AFFAIRS

Linda Bastone
DEAN OF FACULTY AND IRB COORDINATOR

Moni Chauhan
RESEARCH INTEGRITY OFFICER/ OAA

Christine Spicknell
GRANTS/ SPONSORED PROGRAMS

Jennifer Chabra
RESEARCH COMPLIANCE SPECIALIST/ OAA

QCC's 9th Annual URCW Day

High-Impact Practices at Queensborough

Dr. Meg Tarafdar
Interim Director
Center for Excellence in Teaching and Learning (CETL)

The high-impact practices (HIPs) are teaching strategies that promote deeper learning and greater persistence. The Association of American Colleges and Universities (AAC&U) has identified 11 distinct HIPs and has published extensively on the HIPs and their documented benefits with regard to student retention, academic performance, and students' self-reported deeper learning. The HIPs have been instituted as a key component of *Queensborough Academies* Model. The integration of high impact practices into the curriculum promotes integrative learning and supports the achievement of the General Education Outcomes.

Each of the following HIPs are supported by one or more Faculty Coordinators, all of whom work with the Center for Excellence in Teaching & Learning to oversee the HIPs at Queensborough. The College formally offers six HIPs. Please visit the webpage for more information about HIPs.

Academic Service-Learning/ Experiential Learning involves class assignments that take students' work out into the community, encouraging civic engagement and reflective practices that promote learning. Faculty development in design and implementation occurs throughout the semester. Coordinator: Jennifer Maloy, Associate Professor, English.

The Common Read (CIE) is a common intellectual experience that promotes integrative learning across the curriculum through multi-disciplinary approaches to a common text. Participating faculty members are able to incorporate the text in a way that aligns with their individual interests and disciplines. Students have the opportunity to participate in cross- disciplinary events that encourage increased social and academic engagement while supporting the learning that takes place in the classroom. Coordinator: Jody Resko, Assistant Professor, Social Sciences.

Global & Diversity Learning (GDL) provides a framework for exploring multiple perspectives on viewing the interdependent world. Students participate in experiences that promote an awareness of global issues, engagement with diverse perspectives, and transformative approaches towards learning. Queensborough's cultural resources provide opportunities for students to interact with the Kupferberg Holocaust Resource Center and Archives, QCC Performing Arts Center, and the Art Gallery. Coordinator: Meg Tarafdar, Associate Professor, English.

Students Working in Interdisciplinary Groups (SWIG): The SWIG project is, in effect, a virtual learning community. A SWIG experience is a Collaborative Assignments or Projects that allows students from two or more courses to create a shared student-centered online space, in which they can share their work with others, offer audience response and constructive feedback. Coordinator: Rezan Akpinar, Associate Professor, HPED.

Undergraduate Research as a High-Impact Practice (UR-HIP) emphasizes process and reflection. The Council for Undergraduate Research defines undergraduate research as: a mentored investigation or creative inquiry conducted by undergraduates that seeks to make a scholarly or artistic contribution to knowledge. UR-HIP faculty participants design an undergraduate research activity and reflection. These activities may be implemented through research in the classroom, one-to-one / small group mentorship, or an internship. Coordinators: Urszula Golebiewska, Professor, Biological Sciences and Heather Huggins, Associate Professor, Communication, Theatre, & Media Production.

**Writing Intensive Courses (WI)** courses are designed to improve students' critical thinking, engagement with and mastery of course content, and writing ability through all academic disciplines. Two writing-intensive courses are required to graduate. Specific Writing Intensive Certification training is needed. Coordinators: Melissa Dennihy, Associate Professor, English; Monica Rossi-Miller, Lecturer, Foreign Languages and Literature.

Academic Service Learning/Experiential Learning

Faculty Coordinator: Jennifer Maloy, Associate Professor, English Department

Academic Service-Learning at QCC is:

- A pedagogical practice that aligns course learning objectives with community service
- Mutually beneficial for students and community partners
- An activity that reinforces curricular concepts through project-based learning and experiential learning opportunities
- An activity that advances the notion of life-long learning and civic engagement
- An activity that engages empathic awareness
- Reflective in nature and promotes deep learning
- An emerging practice that is rich with publication and presentation possibilities
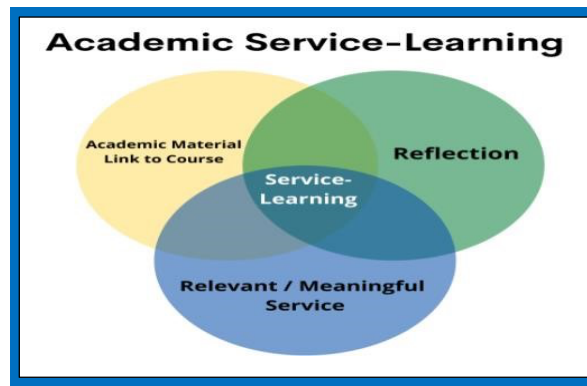
Some projects implemented during the 2023-2024 year include:

- Class project regarding immigration advocacy with Make the Road in an English course, Fall 2023
- Students working as business consultants with QPAC as the community partner in an accounting course, Spring 2024

Possible Future Projects:

- Working with classes at NYC public schools
- Collaborating with local businesses and community organizations (including non-profit and arts organizations)
- Supporting programming for on-campus organizations/offices such as the Holocaust Resource Center, Art Gallery, QPAC, CUNY Start, and CLIP
- Creating informational/supplemental materials for QCC classes and offices
- Designing campus-wide service-learning projects that bring together faculty and students from across academic disciplines and integrate other HIPs
- Designing digital-based projects that incorporate emerging technologies and raise awareness of humanitarian issues locally and globally

To join the training program for Academic Service Learning/Experiential Learning, or to speak about other potential projects, please contact Jennifer Maloy at jmaloy@qcc.cuny.edu.

The Common Read/Common Intellectual Experience (CIE)
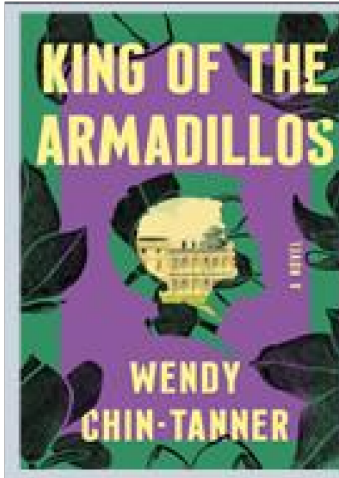
The Common Read is a Common Intellectual Experience (CIE) is one of the High-Impact Teaching Practices that integrates cross-disciplinary events in support of a campus-wide, shared reading of a selected text. Students enrolled in classes across the disciplines read the same text during the spring semester. Students discuss and complete assignments related to the text within their courses during the first part of the semester. The Common Read culminates in an events period during which students are invited to attend events with their peers from other classes across campus, to learn how other disciplines have approached the text. These events provide participating faculty and students additional opportunities to engage socially and academically across the campus, while supporting the learning in each individual class.

The Common Read creates opportunities for students to make interdisciplinary and real-world connections to their learning, as well as to build relationships with their peers and faculty across the campus. During the Fall semester, faculty from all disciplines are invited to attend workshops and discussions for incorporating the Common Read text into the curriculum and to participate in the week of Common Read events during the Spring semester.

The AY 2024-25 Common Read text is *King of the Armadillos* by Wendy Chin-Tanner, A transcendent debut novel about family, love, and belonging, set against the backdrops of 1950s New York City and a historical leprosarium in Louisiana, following one young man's quest to not only survive, but live a full and vibrant life.

This year's Common Read Events offer opportunities for students to explore connections to the book from many disciplinary approaches, including Nursing, Speech Communication and Theater Arts, Mathematics and Computer Science, Biology, Health, Physical Education, Dance and Social Sciences. Students will participate in a variety of events, including film screenings and discussions, conversations.

Anticipated presentations include collaborative presentations between Nursing and Philosophy faculty, an open rehearsal featuring Dance students who will share their work in progress based on the book and discuss with the audience their impressions of the dance with the book, a collaborative Common Read & Academic Service- Learning campus-wide event promoting Resiliency for campus and community members, week-long talks from Social Sciences faculty and invited speakers.

For additional information about the program, please email Faculty Coordinator (AY 2024-25):

Jody Resko (Assistant Professor, Social Sciences Department) jresko@qcc.cuny.edu

In *King of the Armadillos*, Wendy Chin-Tanner explores immigration, illness and opportunity through the story of a teenage immigrant who is diagnosed with Hansen's disease.

Common Read 2024-25

The Common Read/Common Intellectual Experience is a high-impact teaching practice that promotes integrative learning across the curriculum through multi-disciplinary approaches to a common text.

QCC's 9th Annual URCW Day

Global & Diversity Learning (GDL)-High Impact Practice
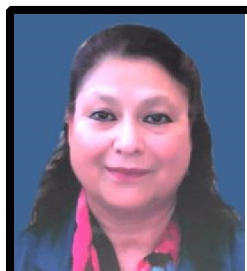
Program Coordinator:
Dr. Meg Tarafdar

Associate Professor, English Department
Interim Director, CETL
mtarafdar@qcc.cuny.edu

Global & Diversity Learning (GDL) is a high impact practice that provides a framework for exploring multiple perspectives on viewing the interdependent world. The GDL framework integrates an exploration of course content through the following avenues: Intercultural Learning, Global Citizenship, Environmental Sustainability, and Human Rights. Students participate in experiences that promote an awareness of global issues, engagement with diverse perspectives, and transformative approaches towards learning.

Queensborough's cultural resources provide opportunities for students to interact with the Kupferberg Holocaust Resource Center and Archives, QPAC, and the QCC Art Gallery.

GDL provides many opportunities for enriching the curriculum, utilizing strategies for student engagement, and fostering a deeper commitment to achieving the College's general education outcomes. In national studies, GDL has been reported to enhance critical thinking skills, preparation to work in a diverse society, achieve greater academic success, and develop leadership abilities. GDL projects encourage the next generation of strategic leaders and thinkers to advance equity, inclusion, and social justice through higher levels of personal and social responsibility. GDL is designed to advance the College's efforts to achieve quality, equity, and student engagement goals by deepening connections between students' assets and their educational experiences in preparation for work, life, and productive citizenship.
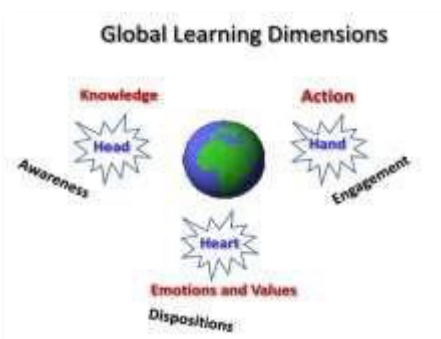
GDL faculty participate in training workshops hosted by the Center for Excellence in Teaching and Learning (CETL). Workshops on integrating high impact pedagogical practices and scaffolded reflection are held twice a year (in January and August). Additional meetings and workshops are offered during the year to support faculty in HIPs participation.

The design, implementation, and assessment of GDL at QCC is closely aligned with AAC&U (Association of American Colleges & Universities) goals and national discourses for fostering the knowledge, skills, and dispositions necessary for addressing diverse issues within our local, regional, and global communities.

GDL training is designed to familiarize faculty with strategies to build student career readiness competencies, self-development, communication, critical thinking, equity & inclusion, leadership, professionalism, and teamwork. These competencies have been identified by the National Association of Colleges and Employers as necessary for success in today's global workplace (NACE, 2022). Students from all academic majors can gain global knowledge and develop marketable skills in cross-cultural communication, global awareness, and collaboration integral to job placement and professional advancement.

Students Working in Interdisciplinary Groups / Collaborative Assignments and Projects (CAP)

Faculty Coordinator:
Prof. Rezan Akpinar, L. Ac, LMT DDS
Health, Physical Education, and Dance
(HPED)

SWIG, or Students Working in Interdisciplinary Groups, operates as a virtual learning community aligned with the AAC&U's Collaborative Assignments or Projects initiative. This program empowers students to engage in integrative, collaborative learning across diverse disciplines. Through the utilization of technology, students participate in asynchronous collaboration, gaining exposure to various disciplinary perspectives and transitioning classes from teacher-centered to student entered environments, thereby fostering active participation in learning and dialogue.

Engagement in interdisciplinary collaboration during education equips students with a wide array of skills and experiences essential for their future careers. These experiences not only enhance career readiness and employability, but also prepare students to navigate the complexities of the contemporary workforce. Research shows numerous benefits such as improvement in problem-solving skills, an expanded knowledge base, exposure to diverse methodologies, opportunities for networking, preparation for a range of interdisciplinary and multidisciplinary careers, heightened creativity, cultural competency, and a comprehensive understanding of complex systems.

DESIGNING A SWIG PROJECT
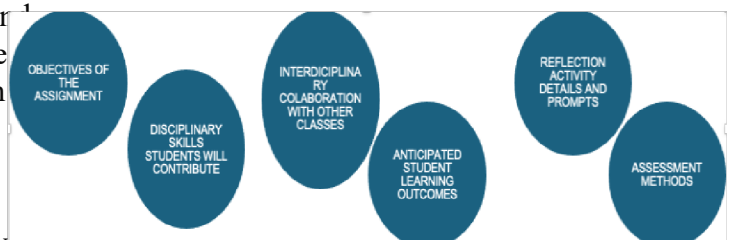
To join SWIG, please contact rakpinar@qcc.cuny.edu

Beyond enriching student experiences, SWIG offers faculty members numerous benefits, including professional development opportunities through mentorship, collaboration with colleagues from various departments, and exploration of innovative teaching methods. Faculty can also leverage SWIG projects as platforms for their research initiatives, investigating interdisciplinary topics and contributing to scholarly discourse. Additionally, SWIG encourages cross-curricular integration, enabling faculty to design interdisciplinary projects that enhance the student learning experience. Through community engagement initiatives, faculty and students can collaborate with external organizations to address real-world challenges, while also expanding their professional networks and earning recognition for their innovative interdisciplinary initiatives.

Recent SWIG projects include students from English and Computer Information Systems collaborating to design a computer application that assists in building argument maps. Additionally, collaboration between the public health and nursing departments organized IPE Grand Rounds Simulation Events, attended by student representatives from various HHS disciplines across different campuses. These events aimed not only to simulate clinical settings but also to foster cooperation and mutual learning among students.

Undergraduate Research as a High-Impact Practice (UR-HIP)

STEM Coordinator
Urszula Golebiewska, PhD
Professor
Biological Sciences
& Geology

Arts & Humanities Coordinator
Heather Huggins, MFA
Associate Professor
Communication, Theatre,
& Media Production

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Undergraduate Research as a High-Impact Practice (UR-HIP) is a pedagogical approach to undergraduate research that emphasizes process and reflection. High-Impact Practices (HIPs) are nationally recognized modes of instruction that promote student engagement and active learning. The positive impact of HIPs participation on student engagement and retention has been widely documented.

The Council for Undergraduate Research defines undergraduate research as: a mentored investigation or creative inquiry conducted by undergraduates that seeks to make a scholarly or artistic contribution to knowledge. UR-HIP takes many forms at QCC, including traditional student-mentor partnerships, designated research courses, and research in the classroom. Any of these are considered a HIP if they include student reflection activities and are aligned to the college's general education outcomes. New UR-HIP practitioners receive guidance and training at QCC's HIPs Institutes, held twice a year in January and August. UR-HIP practitioners meet periodically to share information about projects, reflection assignments, assessment strategies, and other resources.

Each year, we support the annual Spring Student Symposium and Undergraduate Research and Creative Works Day; the UR-HIP community also highlights faculty UR activities through campus-wide programming including UR-HIP Faculty Showcases and cross-disciplinary dialogues. For information, please see the UR-HIP Page.

Become a member of the Council for Undergraduate Research (CUR)
Students, faculty, and staff may sign up for FREE through QCC's Enhanced Membership. LINK TO JOIN:
https://www.cur.org/membership-community/membership/activate-enhancedhttps://www.cur.org/membership-community/membership/activate-enhanced-membership-benefits/membership-benefits/

When you sign up, you will have the opportunity to select a primary division. This is a way to connect to more benefits / opportunities / news within your discipline. This data can be updated at any time on your CUR Profile.

CUNY Celebration of Research will be held on May 23, 2025 at John Jay College
The third CUNY wide undergraduate research celebration will feature STEM poster presentations and creative works. Each campus will be represented by about 10 students across the disciplines. The first CUNY Celebration of Research featured performances from QCC Dance, as well as music and dance from other colleges. This year, QCC Theatre is invited to perform.

QCC's 9th Annual URCW Day

Writing Intensive Program (WI)

Coordinators:

Dr. Melissa Dennihy, English Department
Professor Monica Rossi-Miller, Foreign Languages

What Is Writing Intensive Pedagogy? How Can You Use It In Your Courses?

Writing Intensive pedagogy gives students time and space to grow and develop as writers in multiple courses across the disciplines. Writing is a complex skill that develops over years of practice and experience, and Writing Intensive courses provide students with valuable opportunities to continue practicing their writing beyond their introductory-level composition courses at QCC. **All QCC students are required to take two Writing Intensive courses to earn an associate degree.**

WI courses require students to write regularly as part of their coursework throughout the semester. These courses use writing to engage students' higher-order thinking skills in relation to course content. Students use writing as a tool to learn skills including critical thinking, analysis, interpretation, reflection, problem-solving, and effective use of evidence and sources.

Program Objectives: Faculty members will learn how to design and teach a Writing Intensive course using the best practices of writing pedagogy. In particular, faculty will learn 1) how to use a writing-to-learn approach that serves course content and curriculum; 2) how to design, scaffold, and sequence low- and high-stakes assignments; 3) how to respond to student writing and ensure assessment is antiracist; and 4) how to support student writers in in-person and online courses.

Writing Intensive pedagogy is intended to **supplement and improve, rather than distract or take time away from, your course curriculum and objectives.** The pedagogy is used to help students **further engage with** and **think more deeply** about the concepts and topics in your course. It also provides instructors, particularly those who usually assess student learning primarily with quizzes or exams, with additional assessment tools to explore and understand student learning in their courses.

Faculty members who have participated in WI training often find that writing-intensive pedagogy has enriched their course content while facilitating new ways of engaging with students and helping them to learn. Several faculty members have presented papers at conferences and/or published articles regarding the value of incorporating WI practices into their classroom.

Upcoming Presentation (2024-2025)
Rossi-Miller, Monica. (Panelist). "Creative Approaches to Teaching Italian Language and Culture." ACTFL Annual Conference 2024: *Writing Intensive Culture Courses in the Arena of World Global Issues*. (Practice-Oriented Paper Presentations) Pennsylvania Convention Center. Fri, 11/22.

The Office of Grants/Sponsored Programs at QCC

Development Grants Director: Christine Spicknell
Assistant Director and Grants Writer: Dr. James Harnsberger
Administrative Coordinator: SueAne Solares-Loza
CUNY Office Assistant: Yasmin Jewnandan

Location: Humanities, Room 336
Telephone: (718) 631-6357

The Office of Grants/Sponsored Programs (OGSP) provides grant development services and training and grant management support to faculty and staff to promote the successful acquisition and oversight of research and institutional sponsored awards. The OGSP develops and implements pre- and post-award grant training for new and existing principal investigators/ project directors. Development is provided through workshops, trainings, dissemination of materials, a website, and via one-on-one interactions. The OGSP supports grant directors in managing awards by providing assistance with human resources, purchasing, contract development, sub-awards, financial forecasting, reporting, monitoring and

award close-out. The OGSP coordinates with OAA in promoting research integrity and compliance. The OGSP is responsible for Sponsored Programs Administration and is accessible to assist faculty, principal investigators or project directors with any sponsored research or administrative program requirements.

The OGSP reports to the President, Provost or their designee; at QCC, the designee is the Dean for Academic Initiatives, Dr. Michael Pullin. The OGSP is available for:

- Reviewing proposals submitted to assure compliance with University policy. The Grants Office also reviews budgets to verify that all appropriate charges are included in the cost calculations.
- In cooperation with The Research Foundation, assisting the PI with the negotiation and acceptance of grant awards.
- Assisting the PI with the administration of research and sponsored programs from inception through close-out.
- In cooperation with the University, assuring compliance with sponsor's policies, e.g., fiscal, property, intellectual property, human and animal subjects.
- In cooperation with the University, assuring compliance with the policies and procedures of the Research Foundation.
- In cooperation with the University and The Research Foundation, maintaining official records concerning sponsored projects including official grant and contract files.
- Assisting faculty and department/school staff in the preparation of proposals and other administrative aspects of sponsored projects as needed.
- Training of faculty and administrative staff in the policies, procedures and practices of the University, College or School and sponsors.

Some of QCC's Grant Funded Programs Providing Undergraduate Research Experiences:

- Research Experiences for Undergraduates (REU) funded by National Science Foundation, Project Directors: Prof. Todd Holden.
- "Collaborative Research: Of Mice and Monsters" funded by National Science Foundation, Project Director Prof. Jillian Bellovary.
- "Developing Data Analysis Skills of Community College Students using Cloud Technologies (DDASCT)" funded by National Science Foundation, Project Directors Prof. Monica Trujillo and Prof. Esma Yildirim.
- "Tuning in to the echoes of Black Hole Seeds" funded by National Science Foundation, Project Director Prof. Jillian Bellovary.
- "Using Space Technology to Engage and Inspire Students to Explore (SpaceTech EngInE)" funded by National Aeronautics and Space Administration, Project Director Prof. Chantale Damas.
- Science and Technology Entry Program (STEP) funded by New York State Department of Education, Project Director Michael Pullin
- Collegiate Science and Technology Entry Program (CSTEP) funded by New York State Department of Education, Project Director Marie Francesca Berrouet.
- Ionic Liquids funded by STREM Chemicals, Project Director Prof. Sharon Lall-Ramnarine.
- College Now & STEM Research Academy funded by the Pinkerton and Simons Foundations, Project Director Mary Anne Meyer.
- BioPREP: Biology Partnership funded by NIH, Project Director Prof. Nidhi Gadura.
- Institutional Partnership to Create Successful Student Transition in Smart Energy and Materials funded by National Science Foundation, Project Director David Sarno.
- Developing Next Generation Radiation Safety Professionals funded by The Department of Energy, NNSA, Project Directors Prof. Sharon Lall-Ramnarine and Prof. Paul Sideris.
- CUNY/OMH Mental Health Scholarship Program, located in the Social Sciences department, Project Director Dr. Jeffrey Jankowski.
- Bridges to the Baccalaureate Program funded by National Institutes of Health (NIH), Project Director Sarbani Ghoshal

Undergraduate Research Programs at QCC

2024-2025 Academic Year

Research Program	Director	Contact
Collegiate Science and Technology Entry Program (CSTEP)	**Ms. Marie-Francesca Berrouet**	**MBerrouet@qcc.cuny.edu**
Fall 2024 Student Engagement at the KHC	**Laura B. Cohen**	**KHC@qcc.cuny.edu**
The CUNY Research Scholars Program (CRSP)	**Provost Phyllis Curtis-Tweed & Dr. Regina Sullivan**	**RSullivan@qcc.cuny.edu**
The Society for the Advancement of Chicanos/Hispanics and Native Americans in Science	**Dr. Maria Mercedes Franco & Dr. Joan Petersen**	**MFranco@qcc.cuny.edu; JPetersen@qcc.cuny.edu**
NSF Research Experience for Undergraduates (REU)	**Dr. Todd Holden**	**THolden@qcc.cuny.edu**
QCC NSF S-STEM Scholars Program in Smart Energy	**Dr. David Sarno**	**DSarno@qcc.cuny.edu**
Using Cloud Technologies to Develop the Data Analysis Skills of Community College Students	**Dr. Monica Trujillo & Dr. Esma Yildirim**	**MTrujillo@qcc.cuny.edu EYildirim@qcc.cuny.edu**
Financial Machine Learning with Python Research Program	**Ms. Anna Lee**	**AnLee@qcc.cuny.edu**
NASA-CCNY Center for Advanced Batteries for Space	**Dr. Robert J. Messinger, Dr. Elizabeth Biddinger (CCNY) & Dr. Sharon Lall-Ramnarine (QCC)**	**SLallRamnarine@qcc.cuny.edu**
Developing Next Generation Radiation Safety Professional Program	**Dr. Sharon Lall-Ramnarine & Dr. Paul Sideris**	**SLallRamnarine@qcc.cuny.edu; PSideris@qcc.cuny.edu; JChabra@qcc.cuny.edu**
CUNY/OMH Mental Health Scholarship Program for Those Committed to Diversifying the Behavioral Health Workforce	**Dr. Jeffery Jankowski**	**JJankowski@qcc.cuny.edu**
National Institutes of Health (NIH) Bridges to the Baccalaureate Program	**Dr. Sarbani Ghoshal**	**SGhoshal@qcc.cuny.edu**

Collegiate Science and Technology Entry Program (CSTEP)

Program Director: Ms. Marie-Francesca Berrouet
Email: MBerrouet@qcc.cuny.edu

Ms. Berrouët came to the U.S. from Haiti in 2002 and started working at QCC that same year. Over the years, she has served College students in various capacities. Ms. Berrouët is also a proud QCC / CUNY alumna and continue to passionately seek, obtain and encourage her students to participate in experiences that enhance their skills, knowledge, and expand their network while keeping them engaged in their community. (Internship, Research, Volunteer). Since 2011, she has been the Project Director of CSTEP. The Collegiate Science and Technology Entry Program (CSTEP) is a New York State grant funded initiative designed to foster academic excellence for historically under-represented or economically disadvantaged full-time college students majoring in the STEM (Science Technology Engineering Math) fields and licensed professions (i.e. Health related careers, Accounting, Law, Psychology, Massage Therapy, Social Work, etc.). CSTEP is a small program, serving 130 students per academic year, however, it has a high retention rate and its students have great things to say about their experience. Ms. Berrouët and her team continue to recruit students and continue to offer guidance and support to all students. They are always happy to assist.

Thank you for your referrals.

For more information:

https://www.qcc.cuny.edu/cStep/

KUPFERBERG
HOLOCAUST CENTER
QUEENSBOROUGH COMMUNITY COLLEGE | CUNY

Fall 2024 Student Engagement at the Kupferberg Holocaust

The Harriet & Kenneth Kupferberg Holocaust Center (KHC) uses the lessons of the Holocaust to educate current and future generations about the ramifications of prejudice, racism, and stereotyping. Our building—the only one of its kind within the City University of New York (CUNY—includes a permanent exhibition telling the story of the Holocaust in Germany, an additional gallery space for rotating exhibits, as well as a specialized library. The KHC hosts a range of programs about Holocaust memory and its ongoing impact across, as well as relevancy to, societies around the world through annual commemorations, special events, student-focused initiatives, our National Endowment for the Humanities (NEH) colloquia series led by QCC faculty, and lectures about our originally researched exhibitions.

Our current exhibition, *The Concentration Camps: Inside the Nazi System of Incarceration and Genocide*, surveys the scope and brutality of this system, underscoring the horrific consequences of antisemitism, racism, and authoritarianism (https://khc.qcc.cuny.edu/camps/). Our previous exhibit, *Survivance and Sovereignty on Turtle Island: Engaging with Contemporary Native American Art*, marked the first time 16 Native American and Indigenous Artists showcased their work at a Holocaust education center (https://khc.qcc.cuny.edu/blog/exhibit/survivance/.) You can find more information about our fall semester programs on our website: https://khc.qcc.cuny.edu/events/.

Fall 2024 Internship & Fellowship Projects

The KHC offers paid administrative, curatorial, research, and project-based internships during the fall, spring, and summer semesters. For more information about the Center, please visit our website: https://khc.qcc.cuny.edu/ or email us at KHC@qcc.cuny.edu.

Visitor Services & Research: For Fall 2024, the Center continues to offer internships for QCC students to serve as greeters and help students and other visitors navigate the galleries. Interns introduce the exhibits, distribute exhibit catalogs from our archive, and provide general administrative support. The interns also each choose a past exhibit, an artifact on display, a Holocaust survivor testimony, or a topic of interest related to the Holocaust to review and research.

Curatorial/Collections Research: The Center's Fall 2024 student fellow from the QCC Museum & Gallery Studies program is currently assessing the KHC's paper archive collection, including historical image/artifact research.

QCC's 9th Annual URCW Day

The CUNY Research Scholars Program (CRSP) 2024-25 Cohort

Program Directors: Provost Phyllis Curtis-Tweed and Dr. Regina Sullivan
phyllis.curtis-tweed@qcc.cuny.edu; rsullivan@qcc.cuny.edu
CRSP Programming Coordinator: Ms. Christina Denny
cdenny@qcc.cuny.edu
Location: Office of Academic Affairs, Room A-507

The CUNY Research Scholars Program provides funding to facilitate laboratory and other research experiences for associate degree students over a one-year period. The goal of the program is to encourage undergraduate participation in authentic research and to increase persistence in STEM and Social Science disciplines. Students receive a $5,000 stipend and approximately 300 hours of mentoring from faculty members and participate in structured activities on campus, including sessions on laboratory safety, library research, public speaking, and poster preparation. Each year, the program culminates in a symposium where students display and present their work to peers and mentors. The CUNY Research Scholars Program at QCC currently supports 20 students and 19 faculty mentors.

Eligibility

Associate degree students at any stage in their academic career can participate. Students must have at least a 2.7 GPA and commit to being part of the program for one full academic year. Graduating and transfer students who leave the college may take a partial scholarship for work completed, providing that they prepare a poster of the research conducted for presentation by the student or faculty mentor at the CUNY Research Scholars Program symposium at the end of the funding year.

Support

Students receive a $5000 stipend for approximately 300 hours of research activities. The program also provides compensation for faculty mentors in the amount of $1000 per student mentee. This amount is for one year of the program. Faculty commit to working with the student for the entire academic year.

Applications

Applications open in August every year and close in mid-September. For more information, visit:
http://www.qcc.cuny.edu/ur/crsp.html

The Society for the Advancement of Chicanos/Hispanics and Native Americans in Science

SACNAS

SACNAS QCC Chapter Advisors

Dr. Maria Mercedes Franco, Math and Computer Science, mfranco@qcc.cuny.edu
Dr. Joan Petersen, Biological Sciences and Geology, jpetersen@qcc.cuny.edu

The SACNAS QCC chapter was established in Spring 2016 as the second and only active chapter in the state of NY, and the second chapter established at a community college. QCC SACNAS offers a forum to come together for academic, social, and service activities. The chapter has a strong presence on campus that is dedicated to raising awareness about issues of importance to our diverse community. Any student or faculty member is welcome to join the QCC Chapter.

SACNAS is Multidisciplinary and Multicultural

Chapter members at the 2022 SACNAS
National Conference in San Juan, PR
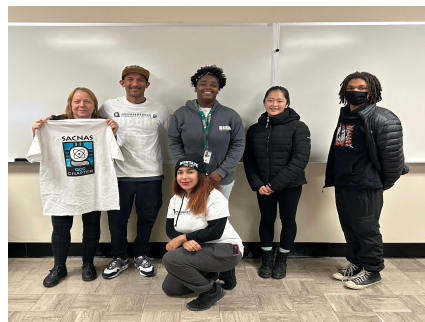
Students attend a Fall 2023 chapter-sponsored
Environmental Science Alumni Panel

Chapter members volunteered during Earth Day
2023 at Queens Botanical Garden, Flushing, NY

At SACNAS we are changing the face of science together

SACNAS QCC Chapter Highlights

Travel Scholarships to attend the 2023 and 2022 SACNAS *Diversity in STEM* National Conference:

- James Hardat, Chapter President 2021-2022, was fully funded by SACNAS to attend the 2023 conference. In 2022, Mr. Hardat was fully funded to participate in C.O.L.O.R. (Chapter Officer Leadership October Retreat), a pre-conference student leadership event and to attend the conference.
- Simona Mitec, Chapter Vice President 2021-2022, received a SACNAS Travel Scholarship to attend the conference.
- Dr. Maria Mercedes Franco, Chapter Co-Advisor, received a MMW Travel Scholarship to attend the Modern Math Workshop (pre-conference) and the conference in 2023.
- Dr. Bianca Sosnovski, Chapter Advisor 2021-2022, received a MMW Travel Scholarship to attend the Modern Math Workshop (pre-conference) and the conference in 2022.

Presentations at the 2022 SACNAS *Diversity in STEM* National Conference:

- "Early Undergraduate Research Experiences for Community College Students Promote DEI in STEM," and all-QCC panel with Dr. Yusuf Danisman, Dr. Maria Mercedes Franco (Chapter Co-advisor 2022-2023), Dr. Simran Kaur, Dr. Alison Mello, and Dr. Joan Petersen (Chapter Co-Advisor 2022-2023)
- "Supportive Research Mentoring in Computational Sciences for 1st and 2nd Year College Students" Panel with Dr. Maria Mercedes Franco and two faculty members from 2 non-CUNY institutions
- "Un Paso Pa'lante: Putting Hispanic/Latinx STEM Doctoral Students on the Path to Teach at Community Colleges" Panel with Dr. Dugwon Seo (Chapter Co-Advisor 2021-2022) and five faculty/researchers from other CUNY and non-CUNY institutions.

Other SACNAS Awards:

- Dr. Maria Mercedes Franco was selected to participate (on a full scholarship from SACNAS) in the 2022 Linton-Poodry SACNAS Leadership Institute.

SACNAS has helped defray the cost of 58 individual trips (27 students/alumni, 31 faculty/ professionals) to the national conference made by members of the QCC community since 2012. The savings to travelers and the college is estimated to be $49,000. Beyond the conference, SACNAS offers intensive support to its members via web-based services, leadership development, student scholarships, internships, and fellowships.

Achieving **TRUE DIVERSITY** in STEM

SACNAS is an inclusive organization dedicated to achieving **True Diversity**. True diversity means the field (including leadership positions) reflects the demographics of the population. Thus, since its founding 49 years ago, SACNAS has been working to "make sure that those most underrepresented in STEM have the support they need to obtain advanced degrees, careers, and positions of leadership." Since 2018, new funding allocations have been made to fund travel awards for *all* students regardless of citizenship or residency status, an effort particularly helpful for DREAMers. All other SACNAS programs for students have been unrestricted since their inception. SACNAS also strives to secure unrestricted funding for postdocs and professionals.

NSF Research Experience for Undergraduates (REU)

National Science Foundation supported Research Opportunities in Physics, Bio-physics and Astronomy for Community College Students

Program Director: Dr. Todd Holden
E-mail: THolden@qcc.cuny.edu

Location: Physics Department Telephone:
718-631-6366

Undergraduate participation in physics research at Queensborough Community College has been part of the college's academic program for over 20 years. Sponsors have included NIH RIMS, LSAMP, NASA NSF and PSC-CUNY. The college is offering Research Experiences for Undergraduates this summer supported by the National Science Foundation. Students will have the opportunity to participate in current research projects in physics, bio-physics or astronomy and perform independent research on a wide range of projects that aim to broaden their understanding of science and involve them in the acquisition, analysis and presentation of experimental data.

Research Program Objectives:

- To introduce students to a variety of current issues in science.
- To define and discuss useful methods.
- To provide instruction in experimental design and efficacy.
- To have meaningful faculty-student discussions on the experimental results.
- To assist with the production of a presentation of each student's work at a conference.
- To inform students of opportunities at four-year colleges and summer initiatives.

Program Details

The program is a 10 week-long research program that runs from May 28, 2022 to August 2, 2024. This program provides an opportunity to do interesting research in a wide variety of topics with individual mentors. In addition, basic research skills are highlighted including responsible conduct in research, statistics, data handling and presentation skills. Each student will have an opportunity to present their summer research at a symposium at Queensborough and will be encouraged to present and publish their results in other forums.

Benefits

- A $6000 stipend
- Travel support to and from campus
- An option to continue paid research with your mentor throughout the academic year
- A rich research experience and collaborative environment

QCC NSF S-STEM Smart Energy Scholars Program
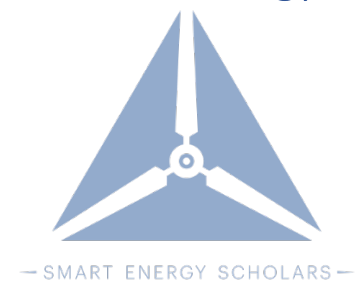
Program Director: Dr. David Sarno
E-mail: dsarno@qcc.cuny.edu
Location: Chemistry Department
Telephone: 718-631-6058
http://www.qcc.cuny.edu/s-stem/index.html

Awarded in 2017, the National Science Foundation Scholarship in Science, Technology, Engineering, and Mathematics (S-STEM) grant to QCC and its partners at Binghamton University (BU) and Broome Community College (BCC) has supported academically talented students who demonstrate financial need by providing scholarships to complete their associate's degrees in a variety of STEM disciplines. Students have gained knowledge and experience in smart energy fields that will enable a future of alternative energy sources and energy efficient technologies. In addition, they have developed vital "soft skills" such as scientific writing, making presentations, and networking. While at QCC, S-STEM students participated in a weekly online seminar with their peers at BU and BCC. They also received advisement from faculty mentors, and support from their peers and colleagues at the partner institutions. Of the 23 Smart Energy Scholars, ten transferred to BU with continued support from the program. Many Smart Energy Scholars have since completed their bachelor's degree and are now employed or pursuing graduate study. We are enormously proud of them all!

The Smart Energy Scholars program will end in June 2025. We are grateful for the years of support from the Queensborough Office of Grants and Sponsored Programs and Office of Financial Services. We also thank the National Science Foundation for providing three one-year extensions that allowed us to support additional Queensborough students!

Program Features

- Up to $10,000 per academic year towards cost-of-attendance
- Opportunities for mentored research at QCC
- Mentoring and advising by Smart Energy faculty at BU
- Online seminars and cohort-building events with Smart Energy Scholars from all campuses

Eligibility

- Full-time enrollment at QCC
- US citizenship or permanent residency
- Minimum 3.0 GPA
- Demonstration of financial need based on completed and filed FAFSA
- Working towards an A.S. degree in STEM

Priority given to students who are

- in chemistry, physics, or engineering A.S. programs
- planning transfer to a bachelor's degree program in a STEM field
- on track to graduate from QCC by the end of spring 2025

QCC's 9th Annual URCW Day

QCC NSF S-STEM Smart Energy Scholars Program Highlights

Smart Energy Scholars (left to right): Isabela Velasquez Gutierrez, Xiaofang Yu, Edison Mera, James Pitarresi (PI-BU), Miaolan Chen Weng, Devani Mahabir, Mariia Ihnatiuk, Ho Martin Yuen, Ahmed Tafsir, Ieesha Ansar

Highlights:

- Many of the Smart Energy Scholars participate in undergraduate research at QCC and are also supported by the CUNY Research Scholars Program (CRSP).
- Anna Liu participated in the 2024 NSF-REU program at Binghamton University and is currently there as a Biology major with a minor in Environmental Science.
- Ieesha Ansar participated in the 2024 Department of Energy Community (DOE) College Internship Program at Brookhaven National Laboratory (BNL).
- Ahmed Tafsir participated in the 2024 DOE Community College Internship Program at BNL. He is currently a Mechanical Engineering major at City College.
- Mariia Ihnatiuk participated in the 2023 Using Cloud Technologies to Develop Data Analysis Skills Summer Bootcamp (UCTDDAS). She is currently an Environmental Science major at Queens College.
- Ho Martin Yuen participated in the 2022 and 2023 DOE Community College Internship Program at BNL and won a Best Poster award at the 2023 CRSP Symposium. He is currently a Chemistry major at Stony Brook University.
- Devani Mahabir graduated from Binghamton University and is working on her master's degree at Teachers College, Columbia University.
- Miaolan Chen Weng participated in the 2021 CUNY Summer Undergraduate Research Program. She graduated from Binghamton University and is working on her master's degree at Queens College.
- Harpreet Singh participated in the 2019 NSF-REU at City College and was a Presentation Winner at the 2020 CRSP Symposium. He graduated from Binghamton University and is employed at Nassau Community College.
- Danial Mokhtari Sharghi participated in the 2019 NSF-REU program at QCC.
- Isabela Velasquez Gutierrez won a Best Poster award at the 2018 CRSP Symposium. She graduated from Binghamton University and is working on her PhD at UW-Madison.
- Edison Mera participated in the 2018 NSF-REU program at Binghamton University.
- Xiaofang Yu participated in the summer 2018 NSF-REU program at University of Pennsylvania.

Recent Publications:

- R. Ogbodo, W.V. Karunaratne, M.S. Emerson, G. Acharya, M. Mughal, <u>H.M. Yuen</u>, N. Zmich, S. Nembhard, F. Wang, S.I. Lall-Ramnarine, J.F. Wishart, A.J. Nieuwkoop, C.J. Margulis, "Viscosity and its Structural Origins; a Comparison of Imidazolium-based and Pyrrolidinium-based Ionic Liquids," J. Phys. Chem. B, 2023, 127, 6342.

Recent Presentations:

- <u>H. Tariq</u>, N. Spence, R. Felix, Q. Johnson, B.P. Chauhan, M. Chauhan, S. Ghoshal "Synthesis and Anticancer Properties of Polyrhodanine Copper Nanocomposites", 2023 Metropolitan Association of College and University Biologists conference, University of Bridgeport, Bridgeport, CT
- <u>M. Ihnatiuk</u>, D.M. Sarno "Polyaniline as an adsorbent for the removal of metal cations from aqueous solution", 2023 Middle Atlantic Regional Meeting, American Chemical Society, CUNY Graduate Center, New York, NY

QUEENSBOROUGH COMMUNITY COLLEGE | CUNY

Using Cloud Technologies to Develop the Data Analysis Skills of Community College Students

Background
Queensborough is a Hispanic Serving Institution with over 10,000 students and a 3-year graduation rate of 28.5%. 50% of students are first generation, 90% graduate without debt. 70% of full-time faculty have earned doctoral degrees or other non-doctoral terminal degrees.

- Project Team meets once a week
- Anonymous surveys used to evaluate all project activities
- Evaluator provides feedback

Business Industry Leadership Team includes industry and academia leaders in data analysis/science fields

16 & 23 students in 1st & 2nd summer boot camps 100% retention for both

Faculty development activities for years one and two of the grant

Student leadership development through SACNAS QCC Chapter and Data Science Club

Students appreciate

"the practical exercises and deep-dive into these topics, topics that are not taught or are presented in overview mode in regular classes"

"being introduced into more intense work and getting experiences of what professionals do in the database tech field"

"learning actual applications that I can bring to the workforce and use to build my resume"

"realizing how much python is essential and used in tech fields"

BILT meeting
BILT members were recruited as mentors

Summer Boot Camp
first cohort

May - 2022

Aug 2022

Student Panel
Data Science Learning Pathways

BILT meeting
Development Curriculum Summer Boot Camp

Feb 2022

Jan 2022

Faculty Python Workshop
Python for beginners
Six 2-hour online sessions

Dec 2021

Dec 2021

Student Development
Linkedin workshop

Summer Boot Camp
second cohort

Seminar
Experiences using Data Analysis/Science in Education and Research

April-2023

Aug 2023

March 2023

BILT meeting
Update on changes

NEW SUPPLEMENTAL FUNDS FOR UREs

TUTORING FOR AWS, PYTHON

March 2023

Student Development
Resume writing, Interview skills, Speech & email etiquette workshops

Sept 2022

Dec 2023

Faculty Development
Integrating DA/DS into the curriculum or UR projects

Seminar
Innovation and Entrepreneurship in Data Analytics/Science

FINANCIAL MACHINE LEARNING WITH PYTHON RESEARCH PROGRAM

Mentor: Dr. Yusuf Danisman
ydanisman@qcc.cuny.edu

Email:

Program Coordinator: Anna Lee
Email: anlee@qcc.cuny.edu

This hybrid program is aimed to cover several important aspects related to Machine Learning in Finance with Python for middle and high school students. A certificate will be given upon completion of each module. This program is supported by QCC STEP.

Content
The Financial Machine Learning with Python program covers the following three modules:
- Module 1: Python
- Module 2: Data Analysis
- Module 3: Machine Learning in Finance

Responsibilities

- Attending on-campus and online sessions.
- Completing lab assignments.
- Completing a research project

Eligibility
QCC STEP is a state-funded program for students in 7th through 12th grade. To meet the criteria of The NYS Education Department, you must be at least one of the following:

- An underrepresented minority - African American, Hispanic, or Native American
- Qualify for free or reduced school lunch based on income.

QCC STEP Application: https://qcccuny.formstack.com/forms/step_application

QCC's 9th Annual URCW Day

NASA-CCNY: Center for Advanced Batteries for Space

Principal Investigators: Dr. Robert J. Messinger & Dr. Elizabeth Biddinger
City College of New York, CUNY
QCC Coordinator: Dr. Sharon Lall-Ramnarine
E-mail: slallramnarine@qcc.cuny.edu

The NASA-CCNY Center for Advanced Batteries for Space is recruiting talented undergraduates for an exciting summer internship.

The NASA-CCNY Center for Advanced Batteries for Space is a joint research and education center between The City College of New York, NASA's Jet Propulsion Lab, & regional universities that offers a collaborative research network in electrochemical energy storage & a multi-faceted student internship program. Our research objectives are to develop novel battery materials, chemistries, & prototypes that operate under the extreme conditions necessary to significantly enhance the scope & ambition of future NASA planetary science missions.

- This 10-week internship will run from June through August each year.
- Learn how to address the needs of batteries to operate in extreme conditions including making novel batteries and utilizing ionic liquid electrolytes.
- Work with a multi-disciplinary team of CCNY chemical engineering faculty, postdoctoral researchers, Ph.D. & undergraduate students, & collaborators.

Eligibility Requirements & Stipend:
- Minimum 3.0 G.P.A.
- Major in Chemical Engineering, Chemistry, Physics or a related discipline.
- Participants will receive a $6,000 stipend.

  Students from under-represented groups are particularly encouraged to apply

Interested? Submit your resume & unofficial transcript to SLallramnarine@qcc.cuny.edu by Feb. 14th.

NASA-CCNY Center for Advanced Batteries for Space Program
Highlights 2023-2024

Left: 2022 & 2023 Intern, Elijah Bernard. Right: 2024 Intern, Martina Hove

Highlights

- **Elijah Bernard:** Obtained an Associate's in Science degree majoring in Science for Forensics in January 2024, and is now pursuing a Bachelor's degree at John Jay College of Criminal Justice.
- **Martina Hove:** Obtained an Associate's in Science degree in January 2024, and is now pursuing a Bachelor's degree in Chemical Engineering at the City College of New York.
- **Elijah Bernard** was selected as a **Jack Kent Cooke Semifinalist in 2023.**
- **Elijah Bernard** has been selected as a **2024 member of the Coca-Cola All New York Academic Team for the New York Region of Phi Theta Kappa.**

Recent Research Presentations
- **Elijah Bernard**, Michael Keating, Sharon Lall-Ramnarine and Elizabeth Biddinger, Development of Ionic Liquid & Solvate Ionic Liquid Electrolyte for low temperature Li-metal battery, CUNY Research Scholars Program Summer Symposium, La Guardia Community College, CUNY, July 2023. *Best Presentation Award.*
- **Elijah Bernard**, Dr. Sharon Lall-Ramnarine, Dr. Elizabeth Biddinger, Michael J. Keating, "Development of Ionic Liquid & Solvate Ionic Liquid Electrolytes for low temperature Li-metal batteries" to be presented at the 2023 American Chemical Society's Middle Atlantic Regional Meeting, The Graduate Center, CUNY, June 9, 2023.
- **Martina Hove**, Michael J Keating, Sharon Lall-Ramnarine and Elizabeth Biddinger, "Designing Ionic Liquid Mixtures for Improved Lithium Metal Battery Electrolytes" CUNY Research Scholars Program Summer Symposium, La Guardia Community College, June 24, 2024. *Best Poster Presentation Award.*
- **Martina Hove**, Michael J Keating, Sharon Lall-Ramnarine and Elizabeth Biddinger, "Designing Ionic Liquid Mixtures for Improved Lithium Metal Battery Electrolytes" Presented at the 72nd Annual NY American Chemical Society (ACS) Local section Undergraduate Research Symposium, La Guardia Community College. Oral Presentation: May 4, 2023.

Developing Next Generation Radiation Safety Professionals

Principal Investigators: Dr. Sharon Lall-Ramnarine & Dr. Paul Sideris
Program Coordinator: Jennifer Chabra
E-mail: slallramnarine@qcc.cuny.edu psideris@qcc.cuny.edu jchabra@qcc.cuny.edu

The Developing Next Generation Radiation Safety Professionals Program (DNGRSP) is a Department of Energy funded Minority Serving Institution Partnership Program between Queensborough and Brookhaven National Laboratory (BNL). The goal of DNGRSP is to train eligible QCC students for Radiation Safety Technician positions through a certificate program that includes hands-on training and external research opportunities at BNL.

Start: Enroll at QCC*
- Choose a major in Liberal Arts and Science and join the Developing Next Generation Radiation Safety Program.
- Register for Radiation Safety I in Fall and Radiation Safety II in the Spring
- Choose a set course sequence depending on your academic background!

Participate in BNL Experiences
- Enroll in a "mini-semester" at BNL January (Year 1)
- Complete first summer internship (Year 1)
- Complete second summer internship (Year 2)

Finish: Apply as a Technician!
- Complete second summer internship at BNL and other required courses (Year 2)
- Receive your A.S. degree and certificate (Year 2)
- Apply for work in radiation control and protection at national labs, national agencies, power plants, or hospitals!

SCAN TO APPLY!
OR VISIT:
https://qcccuny.formstack.com/forms/rpcp

Earn While You Learn!
- Take two courses in radiation safety with embedded paid hands-on training that prepare you for technician careers in radiation protection, nuclear medicine & nuclear safety.
- Opportunity to apply for a $6,500 summer internship at Brookhaven National Laboratory!
- Receive a $600 stipend for tuition/books!
- Obtain a Radiation Protection Certificate as you earn an Associate in Science degree at Queensborough!

Eligibility:
- Must be a U.S. citizen or lawful permanent resident.
- Must be at least 18 years old.
- Must maintain a cumulative GPA of 3.0.
- Must be a full-time A.S Degree student at QCC.

2023-2024 Cohort: Maha Almaflehi, Sumaiya Husain, Ahmed Tafsir, Ling Lan Chen, Daletsi Reyes, Pedrocia De-Sosoo, Thrisha Mae Lumor

2024-2025 Cohort: Abdullah Husain, Aujeane Gordon, Manar Elnoor, Samanta Seegopaul, Sherlin Rosales Caamano, Alban Azemi, Sumaiya Husain

Participated in National Chemistry Week 2023 at New York Hall of Science

Introduced to Radiation Safety Program at the orientation for the 2024-2025 cohort

Participated in one-week Mini-Semester winter program at BNL and accepted for 2024 summer internships
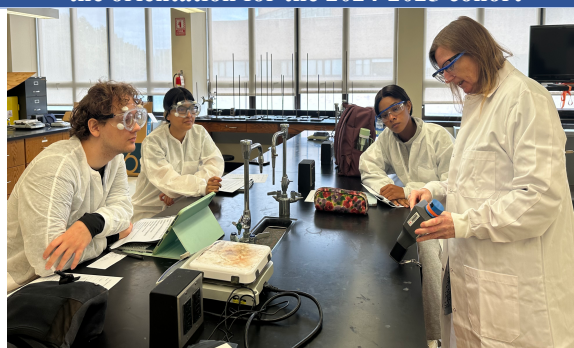
Participated in an Identifinder workshop with BNL scientist Susan Pepper

Presented at URCW Day, Spring Student Symposium, & International Meeting of Nuclear Materials Management

Participated in training exercise at BNL on dressing appropriately for surveying radiation contaminated areas

CUNY/OMH Mental Health Scholarship Program for Those Committed to Diversifying the Behavioral Health Workforce

Governor Hochul has given two million dollars to CUNY in an effort to diversify the mental health workforce with greater participation from underrepresented racial and ethnic groups. A diverse workforce results in greater patient/client satisfaction, engagement, and retention in care. At Queensborough, students who are in the PSYC AS program are encouraged to apply.

Requirements

1. Commitment to increasing the diversity of the behavioral health workforce in regard to those who are Hispanic (including Cuban, Mexican, Puerto Rican, Latinx and Spanish origin), African American/Black, American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, Asian (including Indian subcontinent and Philippines origin) or from any other underrepresented group. And, commitment to diversity the workforce in regard to those who are multilingual.
2. Be a US Citizen or Permanent Resident
3. Be a resident of New York State
4. Be in good academic standing (2.5 cumulative grade point average or better)
5. Be enrolled as PSYC AS major
6. Maintain full time status.
7. Be at least a second-year undergraduate student (at least 30 earned credits).

Recent OMH Awardees

- **Sabreen Qaisar**
- **Shantal Edwards**
- **Nicole Ellerbrook**
- **Merisalyn Roberts**
- **Gilsy Perez**

National Institute of Health (NIH)
Bridges to the Baccalaureate Program

Dr. Sarbani Ghoshal- Program Director/Contact PD-PI, QCC

Dr. Ruth Stark- PI, City College of New York

Dr. Sanjai K Pathak- PI, Queens College

Program Overview:

Empowering research-oriented students to smoothly transition to biomedical baccalaureate programs and beyond is the driving force behind a Bridges grant awarded to Queensborough Community College from the National Institutes of Health (NIH) Bridges to the Baccalaureate Training Program (T34- Maximizing Access to Research). Queensborough will serve as the lead institution for this five-year proposal which began on August 1, 2024, with Queens College and City College as partnering senior colleges. The total amount awarded for five years is US $1.34 million.

The major endeavor of the grant is to train eight QCC students in research during each academic year and transfer them to a senior college or outside institution for summer research. Students will be paid an annual stipend of $14340 and a tuition support of $2880. For summer research experience outside New York City, students will be provided an additional $3000. The program will help students transfer to City College or Queens College and provide several professional and developmental skills, including enrichment workshops for Biology and

Precalculus, Gateway to research, mentor-mentee training workshops. The program aims to track each participating student for a period of 10 years since joining the Bridges program.

Eligibility:
- Completion of one year of college
- Earned a minimum of eight science credits
- Minimum GPA of 2.7 (B-)
- Must be a full-time sophomore
- Must be a U.S. citizen or noncitizen national, or lawfully admitted for permanent residence
- Commitment of at least one year to the program
  - Includes a 10-week summer research experience in a senior college lab

Stipend & Tuition Fees:
Students receive an annual stipend of $14,340, distributed equally ($1195) over 12 months, August-July. In addition, each participating Bridges research student will receive a tuition coverage of $2880 per academic year and a $1000 allowance for presenting at a conference. Students will be covered for up to $3000 for any travel and accommodation expenses if they decide to do their 10-week summer internship outside NYC.

How To Apply:
Please prepare a single PDF document addressing the following points:
1. A cover letter where student should mention about potential mentor's name, GPA, citizenship status, completion of eight science credits
2. An unofficial transcript
3. A personal statement (maximum 500 words) outlining motivation for pursuing a research career in biomedical sciences (mention about career goals, what you hope to gain from this program and your commitment to the program goals)
4. A science faculty or your mentor's recommendation letter (can be emailed to Dr Ghoshal directly)
5. Affirmation that you will attend professional development activities (seminars and/or alumni event) & commit to a full-time research experience as determined by the mentor

The document is to be emailed to [Dr. Sarbani Ghoshal](#), Program Director, NIH-T34 Bridges to the Baccalaureate Program, at [sghoshal@qcc.cuny.edu](#).

News Releases:
QCC: https://www.qcc.cuny.edu/news/2024/08/nih.html

Community College Daily: https://www.ccdaily.com/2024/09/funding-roundup-369/

Program- Poster Presentations

Undergraduate Research Day Presenters

Presenter	Mentor	Department	Presentation #
Queen Hall	Kat Griefen	Art and Design	AD1
Yuxi Zhan	Kat Griefen	Art and Design	AD2
Joe Peterson	Kat Griefen	Art and Design	AD3
Yaeram Cho	Rezan Akpinar	Art and Design	AD4
Masiel Nunez	Andrew Nguyen	Biological Sciences and Geology	BG1
Jacqulyn Persaud	Andrew Nguyen	Biological Sciences and Geology	BG2
Weiheng Jiang	Urszula Golebiewska	Biological Sciences and Geology	BG3
Megan Wuerz	Rondi Davies	Biological Sciences and Geology	BG4
Humayra Nasita	Andrew Nguyen	Biological Sciences and Geology	BG5
Kristina Dujic	Susan McLaughlin	Biological Sciences and Geology	BG6
Victoria Irizarry	Monica Trujillo	Biological Sciences and Geology	BG7
Ashley Jaime	Monica Trujillo	Biological Sciences and Geology	BG8
Fabiha Amber Siraj	Sanjay Koul	Biological Sciences and Geology	BG9
Jalen Nicolas	David Sarno	Biological Sciences and Geology	BG10
Malachi M. Best	Joan Petersen	Biological Sciences and Geology	BG11
Rhian Lafargue	Sarbani Ghoshal Regina Sullivan	Biological Sciences and Geology	BG12
Alyana Abraham	Joan Petersen	Biological Sciences and Geology	BG13
David Tulloch	Mangala Tawde	Biological Sciences and Geology	BG14
Stephanie-Marie Flowers	Regina Sullivan David Sarno	Biological Sciences and Geology	BG15
Tahjeem Ross	Roumen Vragov	Business	BU1
Sherlin Rosales Caamano	Paul Sideris Sharon Lall-Ramnarine	Chemistry	CH1
Alban Azemi	Sharon Lall-Ramnarine Paul Sideris	Chemistry	CH2
Abdullah Husain	Sharon Lall-Ramnarine Paul Sideris	Chemistry	CH3
Samanta Seegopaul	Paul Sideris Sharon Lall-Ramnarine	Chemistry	CH4
Pedrocia De-Sosoo	Paul Sideris Sharon Lall-Ramnarine	Chemistry	CH5

Presenter	Mentor	Department	Presentation #
Syeda Hussain	Sharon Lall-Ramnarine	Chemistry	CH6
Ieesha Ansar	Sharon Lall-Ramnarine	Chemistry	CH7
Sumaiya Husain	Sharon Lall-Ramnarine	Chemistry	CH8
Eunji Ahn	Rex Taibu	Chemistry	CH9
Eunji Ahn	Jun Shin	Chemistry	CH10
Jessica Ellis	Eileen White Kahlil Garner	Communication, Theatre, & Media Production	CTMP1
Aaliyah White	Eileen White Kahlil Garner	Communication, Theatre, & Media Production	CTMP2
Kelly Jairam	Eileen White Kahlil Garner	Communication, Theatre, & Media Production	CTMP3
Stacie Miller	Heather Huggins	Communication, Theatre, & Media Production	CTMP4
Hana Boachie	Liisa Yonker Heather Huggins C. Julian Jiménez	Communication, Theatre, & Media Production	CTMP5
Brett Hirsch	Guozhen An	Engineering Technology	ET1
David Cen Cen	Dugwon Seo Ousmane Sy Savane	Engineering Technology	ET2
MD Rashedul Islam	Rex Taibu	Engineering Technology	ET3
Daniel Volin	Huixin Wu	Engineering Technology	ET4
Mengrui Zheng	Victoria Tomasulo	English	EN1
Toe Chit Lwin	Victoria Tomasulo	English	EN2
Taina Olivo	Alison Cimino	English	EN3
Marie Philippe	Matthew Lau	English	EN4
Carlos Ramos	Matthew Lau	English	EN5
Alexander Zuba	Matthew Lau	English	EN6
Amisha Mangal	Matthew Lau	English	EN7
Abdoulaye Thiam	Chy Sprauve	English	EN8
Aicha Sano	Chy Sprauve	English	EN9
Amro Zatar	Matthew Lau	English	EN10
Meg Tarafdar		English	EN11
Zoe Ilano	Alison Cimino	English	EN12
Arina Rahimi	Edward Diller	Health, Physical Education, and Dance	HPED1
Kerry Maruna	Edward Diller	Health, Physical Education, and Dance	HPED2
Christine Darelus	Edward Diller	Health, Physical Education, and Dance	HPED3

Presenter	Mentor	Department	Presentation #
Phoomipatth Asawaitthipond	Edward Diller	Health, Physical Education, and Dance	HPED4
Cere Coichetti	Rezan Akpinar	Health, Physical Education, and Dance	HPED5
Rebecca Nunez	Rezan Akpinar	Health, Physical Education, and Dance	HPED6
Luciana Cristiano	Rezan Akpinar	Health, Physical Education, and Dance	HPED7
Mia Sheppard Mckoy	Rezan Akpinar	Health, Physical Education, and Dance	HPED8
Melissa Clark	Rezan Akpinar	Health, Physical Education, and Dance	HPED9
Zebin Zhang	Wenjian Liu	Mathematics and Computer Science	MA1
Daniel Lin	Esma Yildirim	Mathematics and Computer Science	MA2
Iman Zahid	Yusuf Danisman	Mathematics and Computer Science	MA3
Sabina Ruzieva	Yusuf Danisman	Mathematics and Computer Science	MA4
Samuel Miner	Yusuf Danisman	Mathematics and Computer Science	MA5
Ewa Stelmach		Mathematics and Computer Science	MA6
Nayla Walters	Michelle Rossi	Nursing	NU1
Mekahla Simpson	Michelle Rossi	Nursing	NU2
Thato Sempe More	Edward Sanchez	Physics	PH1
David Lee	Sunil Dehipawala	Physics	PH2
Ange Compere	Corey Stalerman Raul Armendariz	Physics	PH3
Sean Tai	Raul Armendariz	Physics	PH4
Palden Bhutia	Raul Armendariz	Physics	PH5
Cho Wing Ng	Jody Resko	Social Sciences	SS1
Queen Hall	Jody Resko	Social Sciences	SS2
Kareena Geer	Rosalinda Macaluso	Social Sciences	SS3
Sana Naseri	Jody Resko	Social Sciences	SS4
Gilsy Perez	Patrick Byers	Social Sciences	SS5
Sabreen Qaisar	Celia Sporer	Social Sciences	SS6

Abstracts

Art and Design

AD1
Case Study of the National Museum of the American Indian in New York.
Queen Hall and Kat Griefen.
Art and Design Department

For the Fall 2024 Art Institutions and Business (ARTH 252) major course assignment, I have constructed a SWOT report on the National Museum of the American Indian in New York City. The National Museum of the American Indian is a satellite cultural institution of the Smithsonian that fosters educational programs towards indigenous populations and cultural artifacts from North, Central and South America, its mission: "[...] the NMAI has been steadfastly committed to bringing Native voices to what the museum writes and presents [...] The NMAI is also dedicated to acting as a resource for the hemisphere's Native communities and to serving the greater public as an honest and thoughtful conduit to Native cultures-present and past." A SWOT report is an analysis of the strengths, weaknesses, opportunities, and threats that come from internal and external forces within a museum, through the survey of their current and earlier programs, the effectiveness of current operating standards, and financial reports. Lastly, this report will explore what programs and community innovations the NMAI can participate in to extend their mission statement for the thoughtful presentation of Indigenous history, community engagement, and continued initiatives towards repatriation.

AD2
Case Study of the Museum of Modern Art in New York.
Yuxi Zhan and Kat Griefen.
Art and Design Department

For my Art Institutions and Business class in the Gallery and Museum Studies program, I will present a case study of the Museum of Modern Art. MoMA is one of the most influential art museums in the world, known for its rich collection of contemporary works and its support of diverse arts from diverse backgrounds. This presentation will focus on the SWOT analysis and use it to look at MoMA's strengths, weaknesses, opportunities, and threats. In addition, I will also explore how MoMA balances its role as a non-for-profit art institution with the need for commercial activities to maintain its operation.

AD3
Case Study of the American Folk Art Museum.
Joe Peterson and Kat Griefen.
Art and Design Department

As part of the Fall 2024 Art Institutions & Business course as a requirement for The Gallery and Museum Studies major at Queensborough Community College, I have completed a museum case study of the American Folk Art Museum located in New York, NY. The study will explore how the museum cares for, manages, funds, and shares its nearly 7,000-piece collection of self-taught & folk artists. Founded in just 1961 the museum stands as the only dedicated institution to folk art in the New York City museum circuit. They look to engage the public with exhibitions and publications on artists who may have worked outside of conventional art pathways, and do so guided by their mission statement: "The American Folk Art Museum engages people of all

backgrounds through its collections, exhibitions, publications, and programs as the leading forum shaping the understanding and appreciation of folk and self-taught art across time and place."This report will delve into the internal positives and negatives of their current operation and lay them out alongside the external challenges and opportunities for growth the museum has in front of them. This will be formatted in what is known as a SWOT report and presented with a paper and presentation that attempts to explain the (S)trenghts, (W)eaknesses, (O)pportunities, and (T)hreats the American Folk Art Museum faces as it continues to share the national folk art tradition with all who wish to learn more.

AD4- presented as HPED
Reflexology.
Yaeram Cho, *Antonia Kousountidis*, Heijing Cui, and Rezan Akpinar.
Health, Physical Education, and Dance

Reflexology is a microsystem therapy that supports whole-body wellness. This approach involves massaging specific reflex points on the feet, hands, and head, which are believed to correspond to different parts of the body. Evidence suggests reflexology is safe and may produce both direct and indirect health benefits. Our survey seeks to assess public knowledge about reflexology, including awareness and its broader applications to other areas of the body, such as the hands and head. Additionally, we aim to evaluate general acceptance within the population.

Biological Sciences and Geology

BG1
Examining the function of STAT3 and the anti-inflammatory effects of black tea in macrophages stimulated with LPS and LTA on production of nitric oxide.
Masiel Nunez and Andrew Nguyen.
Biological Sciences and Geology Department

Black tea is derived from the plant Camellia sinensis and has potential health benefits such as antioxidant and anti-inflammatory properties. Antioxidants have the ability to affect expression of transcription factors involved in the immune response, induce the suppression of proinflammatory cytokines and inhibit signaling pathways and enzymes involved with the inflammation pathway. When innate immune cells such as macrophages encounter toxins or pathogenic microorganisms, one of the first inflammatory responses is to produce pro-inflammatory cytokines to recruit other immune regulator cells. In addition to the production of tumor necrosis factor-a, interleukin-1b, interleukin-6, cyclooxygenase 2, macrophages also up regulate the inducible nitric oxide synthase 2 (iNOS 2) pathway. The function of nitric oxide (NO) is to dilate blood vessel allowing more immune cells to the infected site as well as modulating the release of various inflammatory mediators. The aim of this study is to investigate the effects of black tea with its anti-inflammatory properties, on NO production by RAW 264.7 macrophages treated with gram(-) toxin, lipopolysaccharide (LPS) which acts on Toll-like receptor-4 (TLR-4) and gram(+) toxin, lipoteichoic acid (LTA), which acts on Toll-like receptor-2 (TLR-2). NO levels will be measured using the Greiss regent. Furthermore, we recently observed that STAT3 is required for production of TNF-a downstream of TLR-4 but not TLR-2 but it is not required for the IL-6 expression downstream of both TLR-2 and -4, we hypothesize the STAT3 is required for NO production downstream of TLR-4 but not TLR2. This study will provide insights to the functions of STAT3 in macrophages and how black tea's anti-inflammatory properties work to suppress different immune stimulators.This research is conducted by stipend support provided to Masiel Nunez from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG2
Identification of the Components within the Tea extract Exhibiting Anti-Inflammatory Properties.
Jacqulyn Persaud and Andrew Nguyen.
Biological Sciences and Geology Department

Black tea and green tea are derived from the plant Camellia sinensis, retaining many bioactive compounds with potential health benefits particularly antioxidant and anti-inflammatory properties. Amongst these compounds, polyphenols- especially epigallocatechin gallate (EGCG)--are recognized for their significant anti-inflammatory property. This study aims to investigate the anti-inflammatory effects of black and green tea polyphenols by separating tea concentrates by compound polarity and examining their activity in macrophages production of pro-inflammatory cytokines. Polyphenols can interact with either nonpolar or polar compounds. Since previous work has shown that polar extraction generally has high antioxidant property because of the hydroxy groups of the phenolic compounds, we hypothesize that polar extraction of tea extract will yield the most anti-inflammatory effect of the polyphenols. We plan to employ different extraction methods using either hexane (non-polar solvent), ethyl acetate (polar solvent) and diethyl ether (semi-polar solvent) to fractionate the black or green tea. Different fractions will be used to pretreat macrophage cell line RAW264.7 cells prior to stimulation with either lipopolysaccharide (LPS) or lipoteichoic acid (LTA). The anti-inflammatory effect will be determined by measuring the expression of proinflammatory cytokines such as, interleukin-6 (IL6), tumor necrosis factor-a (TNFa) and interleukin-1beta. This approach will provide insights into the specific contributions of tea polyphenols to inflammatory response modulation.

BG3
Comparing Prioprionibacterium phages.
Weiheng Jiang and Urszula Golebiewska.
Biological Sciences and Geology Department

Propionibacterium, recently reclassified as Cutibacterium, are bacteria found in human skin that can cause acne. Renewed interest in bacteriophages to combat bacterial infections has led to the development of acne treatments using phages. Considering these developments, we were interested in analyzing and comparing the genomes of bacteriophages that can infect Cutibacterium and potentially become useful for the treatment. We were using the phagesdb database. The Propionibacterium phages are placed in the BU cluster. We used phagesdb website, phamerator, DNAmaster, NCBI BLAST, Geppard and other programs to compare the genomes. Here we are going to present some insights into the mosaicity of their genomes. There are 48 members in the BU cluster. Their life cycle is lytic meaning that they kill bacteria and could be potentially used to combat infections. Their genome size is approximately 30 thousand base pairs, their GC content is 54%, and average number of genes is 45. They don't have any tRNA. From the phamerator maps we can see that they have similar genome architecture. We compared the gene content of their genomes. Morphologically they are also very similar, for example they have the same tail length which correlates with their tape measure protein size. This research is conducted by stipend support provided to Weiheng Jiang from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG4
Diamonds from Depth: Insights into the Mantle Composition of the Slave Craton.
Megan Wuerz and Rondi Davies.
Biological Sciences and Geology Department

This study investigates the deep mantle composition beneath the Slave Craton, Northwest Territories, Canada, through the analysis of micro-diamonds recovered from kimberlite pipes in the Lac de Gras (LDG) area. The mantle is the thickest and largest layer of earth, and is in between the crust and the core. Kimberlitic magma forms 150- 200 km below earth's surface where the temperature and pressure are so high that carbon can crystallize in the form of diamond. Kimberlite delivers diamonds to the crust through magmatic intrusions that solidify into pipe-like structures, transporting diamonds and other mantle materials to the earth's surface. This allows a unique opportunity to examine the mantles' composition and history provided the minerals trapped in diamond remain unaltered. Diamonds from this region, some with origins up to 30 to 670 km deep, contain mineral inclusions from their time of formation, sometimes billions of years ago. Their properties and compositions provides insights into the mineralogy and conditions of ultradeep mantle environments. Fifty micro-diamonds from seven kimberlite pipes are characterized based on color, shape (growth) and resorption features using a binocular microscope. In ongoing research conducted at the American Museum of Natural History, Fourier Transform Infrared (FTIR) spectrometry will be used to calculate nitrogen content and aggregation state. In addition, Raman spectroscopy will be used to analyze inclusions within the diamonds. The nitrogen content and aggregation states will offer insights into the formation temperature and residence time of the diamonds, while inclusions will reveal the mantle's mineral composition at significant depths. This research is significant because it will enhance the understanding of the Slave Craton's deep mantle composition.

BG5
Examining the Migration of STAT3 in macrophages after Stimulation with LPS and LTA Using the Confocal Microscope.
Humayra Nasita and Andrew Nguyen.
Biological Sciences and Geology Department

STAT3 is a transcriptional factor that is involved in many cellular functions including cell proliferation, migration and apoptosis. When cells are stimulated with pro-inflammatory cytokine such as, interleukin-6 (IL-6), which binds to gp130 receptor, the JAK kinases are activated, which phosphorylates the STAT3 protein. STAT3 translocate to the nucleus and turns on a number of genes involved in cell proliferation as well as pro-inflammatory cytokine production in many immune cells. Recently, STAT3 has been shown to mediate mitochondrial respiration, lipid transport and calcium signaling. We recently showed that the innate RAW 264.7 macrophages produced proinflammatory cytokines when stimulated with lipopolysaccharide (LPS), a gram (-) toxin and lipoteichoic acid, a gram (+) toxin. Indeed, many of pro-inflammatory cytokine production was STAT3 dependent including IL-6, IL-1b and cytooxygenase-2 (COX2). Interestingly, the production of tumor necrosis factor, TNF-a downstream toll-like receptor-4 (TLR-4) activated by LPS is STAT3 dependent but downstream of LTA stimulation activating TLR-2 is STAT3 independent. However, it is not known whether the location of STAT3 in the nucleus or mitochondria or both is important in this process. We hypothesize that STAT3 is differentially located downstream of LPS and LTA stimulation. The aim of this project is to use confocal microscope to detect the presence of STAT3 in the nucleus, mitochondria or endoplasmic reticulum of RAW 264.7 macrophages stimulated with LPS and LTA. We also plan to stimulate wild-type or stat3-/- macrophages with other TLR's agonist such as poly (I:C) acting on TLR3, flagellin on TLR5 and CpG ODN on TLR9. The data generated from this project will give us an insight into the function of STAT3 in innate immune response. This research is conducted by stipend support provided to Humayra Nasita from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG6
Identifying Polycystin, CaSR and TRPV Homologs with Potential Roles in Cnidocyte Discharge and Hydra Feeding Behavior.
Kristina Dujic and Dr. Susan McLaughlin.
Biological Sciences and Geology Department

Hydra is a fresh-water cnidarian regarded as an ideal model organism in developmental biology and neurobiology due to its unique regenerative abilities and specialized cell types like cnidocytes, which are involved in prey capture and defense. Earlier experiments implicated PKD1, PKD2 and CaSR (calcium sensing receptor) homologs in hydra feeding behaviors, including the mouth opening response and cnidocyte discharge. In Part I of this study, homologs of PKD1, PKD2, and CaSRs were identified through BLAST searches of the hydra genome. The Hydra AEP Single Cell Browser database was used to localize expression of these homologs in neurons found in the hydra's head, tentacles and/or in cnidocytes. Based on the results obtained from the said database, a CaSR and a PKD1 homolog are expressed in desmonemes, while a PKD2 homolog was found to be expressed in all three cnidocyte classes (stenoteles, desmonemes and isorhizas). In Part II, portions of the homologs will be cloned into a plasmid vector, which then can be used to produce probes for in situ hybridizations to corroborate the expression patterns indicated by the Single Cell Browser. Prior experiments have implicated TRPV channels in cnidocyte discharge in the cnidarian Diadumene lineata. A search of the Single Cell Browser identified hydra TRPV homologs expressed in cnidocytes. Part III will examine the effect of TRPV chemical inhibitors on the hydra feeding response to further elucidate potential regulatory pathways in these specialized cells. Findings from this study could expand our understanding of molecular mechanisms underlying sensory function and behavior in Hydra, with broader implications for studying evolutionarily conserved sensory pathways. Long range goals include using siRNA knockdown technology to examine the role of specific PKD1, PKD2, CaSR and TRPV homologs in hydra feeding behaviors. This research is conducted by stipend support provided to Kristina Dujic from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG7
Phage therapy: a complementary approach to treat bacterial infections.
Victoria Irizarry, Ashley Jaime, and Monica Trujillo.
Biological Sciences and Geology Department

Phage therapy is an innovative approach to treating bacterial infections by using bacterial viruses, called phages. Phages specifically target and kill susceptible bacteria while leaving others unaffected due to their host specificity. Although antibiotics remain the primary treatment for bacterial infections, their overuse has led to serious challenges, including the rise of antibiotic-resistant strains and the disruption of the gut microbiome, which can cause secondary health issues like allergies and immunodeficiency. Phage therapy is gaining attention as a complementary solution, particularly for combating multidrug-resistant pathogens. Among these are the ESKAPE pathogens-Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter species-a group of highly virulent bacteria known for their ability to "escape" the effects of antibiotics. Wastewater is a known reservoir of both bacteria and their phages. We are focusing on Klebsiella pneumoniae, the bacteria and its phages, to gain knowledge on how phage therapy could help to address multidrug-resistant strains. We are presenting preliminary results on isolation from wastewater of Klebsiella pneumoniae strains and initial characterization of phages that can infect them. This research is conducted by stipend support provided to Victoria Izizarry from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG8
Using Wastewater to Advance Phage Therapy.
Ashley Jaime, Victoria Irizarry, and Monica Trujillo.
Biological Sciences and Geology Department

Phage therapy is a treatment that uses viruses to combat pathogenic infections. Phages are viruses that infect/kill bacteria and have lytic and lysogenic cycles. Interestingly, phages only and selectively kill susceptible bacteria due to their narrow host range and specificity. Antibiotics are the preferred tool to treat bacterial infections. However, antibiotic resistance is an increasingly evolving issue that is limiting their efficacy. Additionally, antibiotics affect the gut microbiome composition which then triggers new health issues. In this new scenario, phage therapy is gaining interest as a complementary approach to antibiotic treatment. However, our knowledge of how phages combat specific bacterial strains is limited. Bacteriodes are a group of anaerobic gram negative bacteria most prominent in the human gut microbiome making up 25% of it. They support a strong immune system by producing enzymes that help our metabolism, strengthen the connection of our gut-brain axis , and produce nutrients our body and other friendly bacteria can use. On the other hand, they are opportunistic when the body's defense system is impaired. In instances of physical trauma, surgery, GI diseases or cancer they can travel out of the GI tract and cause ulcers within various parts of the body and even bacteremia. Wastewater represents the gut microbiome of all those that contribute to the sewershed; therefore, it is rich in Bacteroides and their phages. The aim of my research is to isolate Bacteroides phages from wastewater, extract their DNA, and sequence them using Oxford Nanopore sequencing technology. Additionally, the host range of the phages will be studied. This knowledge will advance the development of phage therapy. Preliminary results from this work are being presented here.

BG9
Development & Identification of E2F4 gene Knockout cells of Human Colorectal cell line HT29 using CRISPR technique.
Fabiha Amber Siraj, Weiheng Jiang, Sanjay Koul.
Biological Sciences and Geology Department

CRISPR (clustered regularly interspaced short palindromic repeats) is a genetic engineering technology that allows researchers to precisely modify DNA and induce the desired changes in the genome of an organism. It's based on a natural defense system in bacteria that protects them against attacks by different viruses. When a virus infects a bacterium, the bacterium transcribes CRISPR DNA elements into RNA. The RNA then guides a nuclease (a protein that cuts DNA) to the viral DNA, destroying it. Scientists apply CRISPR technique in research, agriculture, and medicine to study genes, improve crops, and treat diseases. Here in this presentation, we demonstrate the development of E2F4 gene Knockout (KO) human Colorectal (CRC) isogenic cell line HT29. We used NCBI and EMBL databases to download the sequence of E2F4 DNA, RNA and Protein and based on that designed CRISPR primers. Using bioinformatics tools to generate gRNA's, we identified three different 15 base nucleotide sequences with PAM sequence in the first two exons of the E2F4 gene. Using lentiviral vectors, HT29 cells were targeted with the above 3 gRNAs separately in three different flasks. Three different clones from each flask representing each gRNA were isolated and cultured separately. To confirm the E2F4 knockout all the 9 clones were analyzed for the expression of E2F4 protein using Western blotting. Out of three clones from each gRNA one clone showed complete absence of the protein. These three different clones are good candidates for further investigation. This research is conducted by stipend support provided to Fabiha Amber Siraj from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG10

Polyaniline as an adsorbent for the removal of copper and zinc ions from aqueous solution.

[1]*Jalen Nicolas* and [2]David Sarno.
[1]Biological Sciences and Geology Department, [2]Chemistry Department

Polyaniline (PANI) is a conductive polymer with a variety of applications, including uses in drug delivery and electrochemical sensors. Amine groups on the polymer backbone are reported to bind to certain metal cations, meaning polyaniline may have uses in the remediation of wastewater. High surface area morphologies such as nanofibers can provide more active sites to interact with the ions; however, the PANI particles could pollute the systems in which they are deployed. To avoid such contamination, we confined dispersions of PANI nanofibers to dialysis tubing. Samples of the neutral emeraldine base form of the polymer (PANI-EB) were immersed in aqueous solutions of copper (II) sulfate and zinc (II) sulfate and gently stirred for one hour. Energy dispersive spectroscopy (EDS) data indicates the presence of copper and zinc in the relevant adsorbents. Mass percentages of Zn were lower than Cu. Moreover, percentages were lower in samples that were washed with deionized water after an initial filtration. Despite this reduction, the continuing presence of the cations suggests an interaction between the polymer and the metals. After exposure to 0.01 M $CuSO_4$, certain bands in the FTIR spectra are red-shifted compared to pure PANI, indicating an interaction between the polymer and cation. Washing with water seems to return the benzenoid band to its original position, while the red-shift persists in the quinoid band. This suggests a stronger affinity between the copper ion and the quinoid functionality. Notably, FTIR spectra are not meaningfully shifted after exposure to 0.01 M $ZnSO_4$, indicating a weaker affinity for this cation. The viability of PANI-EB dispersions as adsorbents for various cations will be determined over a range of concentrations and exposure times via SEM, EDS, and FTIR.

BG11

Not So Shallow: A Survey of Microbial Diversity in Local Vernal Pools.

Malachi M. Best, Paige Bouderau, Carlos Cabrera, Jiamiao Chen, Darli W. Chit, Elliott Alexander Gruber, Jalen Nicolas, Bryan Smith, and Joan Petersen.
Biological Sciences and Geology Department

Vernal pools are shallow bodies of water that dry out seasonally. They provide critical habitat for invertebrates and amphibians to survive and reproduce without fish predation. We have been monitoring the environmental conditions of one natural and three constructed vernal pools within Alley Pond Park. Our main focus has been the state of the microbial community which serves as a useful diagnostic in assessing the overall health of the ecosystem. We collected soil and sediment samples from two dry pools (natural pool and Pool A) and soil and water samples from two pools with water (Pools B and C). DNA was extracted from these samples and sent to Cold Spring Harbor Lab (Brooklyn, NY) for next generation sequencing. We also isolated Actinomycetes from terrestrial samples and tested their ability to produce antimicrobial compounds. Additional analyses included an Enterolert test for fecal contamination and several other soil and water quality tests. Microbial community analysis of the DNA samples indicated that the taxonomic diversity is lower in aquatic vs. terrestrial ecosystems. Shannon diversity indices ranged from 3.63 (pool B water) to 6.45 (pool A sediment). Limnohabitans and Polynucleobacter were the two most common genera in both water samples. The two most common genera in terrestrial samples were Vicinamibacter and Usitatibacter. We successfully isolated six Actinomycetes from terrestrial samples that produce compounds that inhibit the growth of several other bacterial types. Two Actinomycetes inhibited both Escherichia coli and Proteus vulgaris (Gram negative bacteria), and all six Actinomycetes inhibited Micrococcus luteus and Mycobacterium phlei (Gram positive bacteria). Our results revealed a diverse and complex microbial community in the vernal pool area. Understanding the dynamics of these microbial communities can offer valuable insights into future conservation

strategies, improve ecological management practices, and support the long-term health and sustainability of these vital ecosystems.

BG12
Comparison of Cytotoxic Effects of Aspartame and Saccharin on Human Embryonic Kidney Cells.
Rhian Lafargue, Fasmin Marikar, Minjae Chung, Sarbani Ghoshal, and Regina Sullivan.
Biological Sciences and Geology Department

Artificial sweeteners or nonnutritive sweeteners (NNS) provide sweetness to food and beverages without adding any calories. These characteristics make these sweeteners extremely popular among those who prioritize weight loss. Aspartame, Saccharin, Acesulfame Potassium (Ace-K), Sucralose are such sweeteners which have previously been recognized to be safe by the United Stated Food and Drug Administration. However, recently there are reports of adverse effects of many of these sweeteners. The present study was conducted to compare the cytotoxic effect of Acesulfame Potassium (Ace-K) and Saccharin in a human cell line, Human Embryonic Kidney Cells (HEK-293). HEK-293 cells were treated with Saccharin in concentration 0.1mM, 1mM, 10mM, 15mM, 20mM, 25mM and 50mM for 24 hours to determine cell viability by MTT assay. The MTT data reveals that there was a significant reduction of cell viability from control treatment for saccharin treatments above 15mM. Microscopic analysis also revealed that most cells were dead at concentrations over 25mM of Saccharin treatment. Studies regarding safety of Ace-K are ongoing, but our preliminary data reveal that 50mM of Ace-K treatment were not able to kill the HEK-293 cells. Based on this observation, we conclude that Ace-K may be a safer artificial sweetener than saccharin. This research is conducted by stipend support provided to Rhian Lafargue from the NIH-T34 Bridges to the Baccalaureate Grant # T34GM154606.

BG13
A Place to Grow: Finding the Optimal Conditions for Milkweed Germination.
Alyana Abraham, J. Adames, Melannie Armaza, Samuel Baro Sherpa, Darli W. Chit, Fahadur Chowdhury, Elliott Alexander Gruber, Aaron Hirsch Romero, Yamin Nandar, Pretty Rahman, GianMichael Ruggiero, John Sanou, Bryan Smith, Megan Wuerz, and Joan Petersen.
Biological Sciences and Geology Department

Milkweed plays a vital role in the life cycle of endangered Monarch Butterflies. Defining optimal conditions for milkweed seed germination is crucial for Monarch habitat restoration. Through collaboration with MAREN (Milkweed Adaptation Research and Education Network), we performed experiments with various milkweed seeds to understand factors that affect their germination rates. We determined germination rates using four temperatures: 25°C, 30°C, 33°C, and 37°C and four different sources: cold-stratified Minnesota Prairie Moon Nursery seeds, cold-stratified wild Minnesota seeds, and both cold-stratified and unstratified New York seeds (from the Oakland Lake Wildflower Meadow). For each source, forty seeds were split into two biodegradable pots lined with paper towels. Each pot was watered and placed at each of the four temperatures for one week, and the number of seeds that germinated in each condition were recorded. We also tested the effects of salinity and light on Prairie Moon milkweed seed germination. The results indicate that milkweed seeds had the highest germination rates at 0% saline but were able to tolerate up to 3% saline. Light conditions had a moderate effect, with germination rates of 80% in darkness and 65% in light. Temperature results varied by seed type. Prairie Moon seeds achieved 100% germination at 37°C, with the lowest germination rate of 50% at 33°C. Minnesota wild milkweed seeds germinated best at 33°C with 77.5%, while the lowest rate was 45% at 30°C. New York unstratified seeds failed to germinate at any temperature, whereas New York cold-stratified seeds showed limited germination of 2.5% at both 25°C and 33°C. Our experiment provided preliminary data about the best conditions for milkweed seed germination. Future experiments will focus on determining optimal growth

conditions for milkweed plants, with the ultimate goal of restoring milkweed plants in the wild to provide habitat for Monarchs.

BG14
Isolation and Characterization of Soil Bacteria with Antimicrobial Properties.

David Tulloch and Mangala Tawde.
Biological Sciences and Geology Department

Soil is a rich reservoir of microorganisms with potential pharmaceutical applications, particularly in producing antimicrobial compounds. Microorganisms in close vicinity must outcompete each other for nutrients and space. The soil bacteria constantly evolve to produce secondary metabolites, with antimicrobial properties. As such antibiotic resistance in pathogenic microbes is on rise. So, the secondary metabolites with antimicrobial potential produced by soil bacteria such as Actinomycetes are valuable resources to fight the antibiotic resistance. We have successfully isolated and revived some soil Actinomycetes from toxic waste contaminated soils that exhibit antimicrobial activity and assessed their ability to inhibit the growth of some common gram-positive and gram-negative pathogenic bacteria. The identified strains hold promise for future secondary metabolite extraction that can be useful in the fight against drug resistance in pathogens.

BG15
Analysis of Soil Near a LIC Powerplant to Assess Microbial Diversity and Heavy Metal Content.

[1]*Stephanie-Marie Flowers*, [1]Regina Sullivan,[2]David Sarno, [1]David Maksa, [1]Mangala Tawde, [1]Andrew Nguyen, [3]Raffaella Diotti, and [4]Jeremy Seto.
[1]Biological Sciences and Geology Department [2]Chemistry Department [3]Biology, Bronx Community College [4]Biology, City Tech of CUNY.

Power Plants are one of the largest sources of toxic pollutants including heavy metals in the U.S. High levels of heavy metals in atmospheric air have been shown to have negative impacts on plant life, however there is a lack of studies investigating soil biomes surrounding these plants. To assess the biodiversity of microorganisms in soil surrounding a Long Island City power plant, soil samples were obtained from various distances and conditions including soil surrounding tree beds and grass beds. Our goals were to 1) determine a profile of the microorganisms, particularly the presence of heavy metal tolerant bacteria and 2) identify the presence of heavy metals in the soil using Energy Dispersive Spectroscopy. To assess the microbiomes in the soil samples, DNA were extracted and analyzed using nanopore sequencing. A phylogenetic profile was obtained using the freely available DNA Subway software. Assessing heavy metals by energy dispersive spectroscopy showed abundant Zirconium, Iron, and Titanium, and the reoccurring presence of Aluminum and Silicon. Nanopore sequencing analysis showed a wide variety of microbes including thermophiles.   The most notable organisms are members of the genus Bhargavaea, present in a sample close to the power plant. These organisms have been shown to have metabolic pathways that are involved in the removal of mercury. This is an ongoing study we will continue to analyze our data and investigate applications to bioremediation.

Business

BU1

The Effect of the Federal Reserve's Monetary Policy on the Current State of the Economy.
Tahjeem Ross, Anooja Singh, Pierre Kishun, Samiul Islam, and Daevion Taylor, and Roumen Vragov.
Business Department

The purpose of this project is to analyze relevant economic data from the past two years and evaluate the effect that the Federal Reserve Board's monetary policy has had on the American economy. We consider data on Potential and Real Gross Domestic product and its components from the income, expenditure, and production viewpoint. We also discuss trends in the Unemployment rate and the Labor participation rate. Major attention is also devoted to inflation by discussing movements in the Consumer Price index, the Headline and Core Personal Consumption Expenditure Index, and the Producer Price index. Energy consumption and prices are also evaluated. After analyzing the trends in the economic data and assessing both the positive signs and the risks to the economy we think that monetary policy so far has had a positive effect on the US economy. We also propose that the Federal Reserve consider a pause in the decline of the target Federal Funds rate during its next meeting in order to keep the economy stable and inflation under control. .

Chemistry

CH1

Removal of Radionuclides In Aqueous Solution Using Layered Double Hydroxides.
Sherlin Rosales Caamano, Daletsi Reyes, Paul Sideris, and Sharon Lall-Ramnarine.
Chemistry Department

Technetium (Tc) is a naturally radioactive element and is one of the few elements whose isotopes are all radioactive. One of the more well-known isotopes of technetium is technetium-99 which is primarily used for medical purposes such as diagnostic imaging of organs in the human body. Technetium-99m tends to oxidize to the anion pertechnetate ($^{99}TcO_4^-$) which has high mobility in aqueous media making it a high environmental risk. Safely removing pertechnetate from aqueous solutions without posing a risk to others and the environment is of great interest. In this project, a series of materials known as Mg/Al layered double hydroxides (LDHs) will be synthesized to determine whether they are good candidates for absorbing anions like pertechnetate. Due to the radioactive nature of pertechnetate, we will be using permanganate, an anion that is structurally similar to pertechnetate but not radioactive. The LDHs will be made with varying amounts of Al to study the effect on absorption. Previous results have shown that increasing Al amounts would absorb more than the lesser amounts of Al. Along with this we will be testing if different pH levels influence the absorbance of pertechnetate. The anion exchange experiments with permanganate will be performed at different pHs to determine its effect on absorbance. This project is based upon work supported by the NNSA Minority Serving Institutions Partnership Program under Award No. NA0004162. Any opinions, findings, and conclusions or recommendations expressed in this project are those of the authors and do not necessarily reflect the views of the DOE, NNSA, or the U.S. Government.

CH2
Medical Isotopes: Generation, Properties and Applications.

Alban Azemi, Manar Elnoor, Sumaiya Husain, Sharon Lall-Ramnarine, and Paul Sideris.
Chemistry Department

Medical isotopes are radioisotopes that are naturally decaying atoms. They are widely used to diagnose and treat a variety of medical conditions. When using medical isotopes to diagnose illnesses using imaging such as MRI scans, they must release enough gamma rays to escape from the body and have a half-life short enough for them to decay and not stay in the body. The radioisotope most widely used in medicine is Technetium-99m (Tc-99m) with a half-life of 6.02 hours. Its low energy gamma rays can easily escape the body while providing enough energy for a diagnostic scan. This project models the generation of short lived radio-isotopes like Tc-99m. We generated Barium-137m from Cesium 137 on an isotope exchange column and determined the half-life of the Barium-137m. We obtained a half-life of 150 seconds (2.5 minutes) for Ba-137m, which is in close agreement with the known half-life of 2.55 minutes. We also discuss the applications and properties of radioisotopes herein. This project is based upon work supported by the NNSA Minority Serving Institutions Partnership Program under Award No. NA0004162. Any opinions, findings, and conclusions or recommendations expressed in this project are those of the authors and do not necessarily reflect the views of the DOE, NNSA, or the U.S. Government.

CH3
Exploring the Sources of Background Radiation.

[1]*Abdullah Husain*, [1]Sumaiya Husain, [2]John Aloi, [3]Susan Pepper, [1]Sharon Lall-Ramnarine, and [1]Paul Sideris.
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Radiation is present in many everyday items, often in small amounts that are usually harmless. Common sources include smoke detectors, which contain tiny amounts of radioactive americium-241. Certain glassware may contain naturally occurring radioactive materials like uranium for color. Older watches, clocks, and compasses also used radium or tritium to make their dials glow in the dark. Even bananas contain small amounts of radioactive potassium-40. While these items expose us to minimal radiation, understanding their sources helps us stay informed and aware of the invisible elements present in our daily lives. In this study, we used various detection instruments, such as a Ludlum pancake Frisker, an Identifinder, and a Ludlum Survey meter (Alpha & Beta), to measure radiation levels in everyday items. The items studied include Cat litter, Smoke detector, Sidewalk free salt, Banana, Granite, and Watch. Preliminary results reveal that the Lantern mantle contains Th-232 and emitted the highest radioactivity, while Sodium Free salt (containing K-40) and Bananas (containing K-40) emitted the lowest radioactivity. Although exposure is negligible, being aware of these sources empowers us to stay informed about the invisible elements present in our environment. Continuing and future work will focus on measuring the radioactivity from bulk quantities of materials like granite and cat litter. This project is based upon work supported by the NNSA Minority Serving Institutions Partnership Program under Award No. NA0004162. Any opinions, findings, and conclusions or recommendations expressed in this project are those of the authors and do not necessarily reflect the views of the DOE, NNSA, or the U.S. Government.

CH4

Assessing Shielding Materials For Ionizing Radiation.

Samanta Seegopaul, Aujeane Gordon, Paul Sideris, and Sharon Lall-Ramnarine.
Chemistry Department

Atoms of the same element with different numbers of neutrons are isotopes. Some isotopes contain an unbalanced number of protons and neutrons, making them unstable due to excess energy in the nuclei which is emitted as radiation in the form of particles or waves. Isotopes that emit radiation are called radioisotopes. Radiation is used in a plethora of ways to improve the quality of our lives, particularly in the health and energy sectors. Accessing the benefits of radiation responsibly requires protecting ourselves and others from exposure. Shielding materials play a central role in minimizing radiation exposure. Adhering to the principles of ALARA (As Low As Reasonably Achievable) is integral to radiation protection. In this project we investigated the effectiveness of different types and thickness of shielding materials for alpha and beta particles and gamma rays, as well as the effect of increasing the distance from the radioactive source. We used radioactive sources containing Polonium-210, Thallium-204, Strontium-90, Cobalt-60 and Caesium-137 as alpha, beta and gamma sources. Radioactivity was measured using a Geiger-Muller Counter. Results verified that the most effective shielding material was lead and the least effective was plastic. We also found that radioactivity decreases as the thickness of the shielding materials increased. In addition, we verified the Inverse-Square Law, showing that as distance from the source increased the radioactive counts decreased. Future work will explore the types of shielding materials used in experiments at Brookhaven National Laboratory. This project is based upon work supported by the NNSA Minority Serving Institutions Partnership Program under Award No. NA0004162. Any opinions, findings, and conclusions or recommendations expressed in this project are those of the authors and do not necessarily reflect the views of the DOE, NNSA, or the U.S. Government.

CH5

Development of an App for the Visualization of Fission Yield Data of Major Actinides.

[1]*Pedrocia De-Sosoo*, [2]Andrea Mattera, [1]Paul Sideris, and [1]Sharon Lall-Ramnarine.
[1]Chemistry Department, [2]National Nuclear Data Center, Brookhaven National Laboratory.

In fission, a heavy nucleus splits into lighter fission products. Fission yields represent the amount of a fission product produced in this process. This project focused on experimental fission yield data of Californium-252 (^{252}Cf), a radioactive isotope recognized for its high neutron emission. Using the Nuclear Science References (NSR) and Exchange Format (EXFOR) databases from the National Nuclear Data Center (NNDC), we compiled, formatted, and corrected the data. Using Python libraries, including Dash and Plotly, we are developing an interactive app to offer a user-friendly interface for accessing and analyzing fission yield data. The application currently allows users to retrieve data and apply filters such as publication year, author, curated yields, and fission yield type. Selected data can then be visualized in a plot tab using various plot types, including bar graphs, 2D histograms, line plots, and bubble plots. Although ^{252}Cf was the primary focus, compiled data from other actinides that play a critical role in nuclear fission research, such as Uranium-235 and Plutonium-239, could be read and modified using the app. The app is currently being tested at BNL to support nuclear research initiatives. This project was supported in part by the Brookhaven National Laboratory (BNL) Nuclear Science and Technology Department, under the BNL Supplemental Undergraduate Research Program (SURP).

CH6
Synthesis of Oligoether Pyrrolidinium Ionic Liquids for Optimized Battery Electrolytes.
Syeda Hussain, Ieesha Ansar, Martina Hove, and Sharon Lall-Ramnarine.
Chemistry Department

Ionic liquids are a class of salts that have a unique ionic composition, usually containing bulky organic cations and organic or inorganic anions, packed in such a way that they are liquids at relatively low temperatures (normally below 100 °C). Ionic liquids have excellent properties including low volatility, low flammability, high thermal stability and an inherently high conductivity. These unique properties make them ideal as battery electrolytes. However, they also have a relatively high viscosity which lowers their conductivity and hampers their large-scale application as battery electrolytes. It has been shown that incorporating ether side chains in the structure creates disorder and lowers ionic liquid viscosity. In this project we are synthesizing pyrrolidinium ionic liquids with oligoether moieties (repeating ether units) in the side chains paired with bis(fluorosulfonyl)imide and bis(trifluoromethylsulfonyl)imide anions. The synthesized ionic liquids will be combined with lithium salts and glyme to make specialized mixtures for low temperature battery electrolytes in collaboration with the NASA Center for Advanced Batteries for Space at City College, CUNY. We report here on the synthesis of the ether-functionalized pyrrolidinium ionic liquids. We have successfully synthesized methylpyridinium ionic liquids bearing 1-6 repeating ether units. The structures of the liquids were confirmed using H-1, C-13 and F-19 Nuclear Magnetic Resonance Spectroscopy.

CH7
Probing The Nanostructure Of Hydroxyl-Functionalized Imidazolium Ionic Liquids.
[1]*Ieesha Ansar*, [1]Mehreen Mughal, [1]Ho Martin Yuen, [2]James Wishart, and [1]Sharon Lall-Ramnarine, .
[1]Chemistry Department, [2]Brookhaven National Laboratory.

Ionic liquids (ILs) are liquid salts with melting points below 100 °C. Their attractive properties include low volatility and flammability, high conductivity and wide liquid and electrochemical ranges. Owing to their remarkable tunable properties, ionic liquids have been working as alternative solvents in enzymatic catalysis, supercapacitors, and in many processes to afford improvements in reaction yields, separations, the efficient production and storage of energy, and access to previously inaccessible chemistry. Understanding the nanostructure of ILs provides a window to tune their properties for specific applications. Techniques such as X-ray scattering and molecular dynamics simulations are typically used to investigate ionic liquid structure, but they involve some inherent ambiguities in interpretation. In this project, ionic liquids capable of hydrogen-bonding interactions are being synthesized for detailed structural investigation by Solid State Nuclear Magnetic Resonance (SS-NMR) spectroscopy and neutron scattering, which are techniques that take advantage of atom-specific hydrogen-deuterium isotopic substitution to probe the inter- and intramolecular interactions controlling IL nanostructure. The authors report here on the synthesis of ionic liquids comprised of imidazolium cations bearing hydroxyl side chains of varied lengths coupled with bis(trifluoromethylsulfonyl)imide and bis(fluorosulfonyl)imide anions. The correct synthesis of the ILs were confirmed using ^{1}H, ^{13}C and ^{19}F NMR spectroscopy. Preliminary results indicate that solvent-free reactions and microwave assisted reactions produce higher yields of ILs bearing hydroxyl-terminated side chains. Conductivities are slightly lower for hydroxyl-substituted ionic liquids compared to alkyl-substitutes ones, indicating inter and intra molecular interactions impeding ionic mobility. The outcomes of this work are expected to make important contributions to the design and understanding of ILs made for specific applications.

CH8
Synthesis and Isotopic Labelling of Imidazolium Ionic Liquids.

[1]***Sumaiya Husain***, [1]Ieesha Ansar, [1]Maha Almaflehi, [2]Gopal Subramaniam, [3]James Wishart, and [1]Sharon Lall-Ramnarine.
[1]Chemistry Department, [2]Queens College, CUNY, [3]Brookhaven National Laboratory.

Ionic liquids (ILs) are low melting salts with melting points below 100 °C and many are liquid at room temperature. As salts, they don't evaporate easily, making them non-flammable and more environmentally friendly than many traditional organic solvents. IL properties can be tailored through slight structural changes. ILs are useful as custom-tailored alternative solvents in areas like catalysis, energy storage, and material design. In order to tailor the properties of ILs for specific applications it is necessary to understand the inter- and intramolecular interactions that give rise to their physical properties. Exchanging hydrogen (H-1) for its isotope deuterium (H-2) in the structure (particularly the imidazolium ring protons) allows us to use techniques such as solid-state NMR and neutron scattering to study the interactions between the ions in the ILs. In this project imidazolium ionic liquids with butyl and octyl side chains and bis(trifluoromethylsulfonyl)imide - NTf_2 or bis(fluorosulfonyl)imide - FSI anions were synthesized. The ring protons on the imidazolium ring were then exchanged for deuterium. C-13 and H-1 Nuclear Magnetic Resonance (NMR) spectroscopy were used to confirm the purity of the samples and monitor the extent of isotopic exchange. Preliminary results for small scale samples indicate 80-90% deuteration of the ring protons of the imidazolium ring.

CH9
Attenuation of Gamma Radiation.

[1]***Eunji Ahn*** and [2]Rex Taibu.
[1]Chemistry Department, [2]Physics Department

The primary objective of this study is to determine the attenuation of gamma radiation through various materials, using Cs-137 as the radiation source. Experiments focus on measuring attenuation coefficients by varying the number of aluminum (Al) sheets and utilizing gamma-ray spectrometry to enhance precision. Two critical metrics are employed: linear thickness, representing the physical thickness of materials, and areal thickness, which incorporates density to evaluate radiation penetration comprehensively. By comparing the attenuation properties of aluminum and lead, the study explores the relationship between material characteristics and their effectiveness as radiation shields. Future experiments will expand to include additional radiation sources and absorber materials, providing broader insights into radiation interaction and optimizing shielding strategies for applications in nuclear physics and radiation safety.

CH10
Synthesis of N-3-hydroxypropyltrichloroacetamide: Possible precursor to polyurethane.

Eunji Ahn and Jun Shin.
Chemistry Department

Polyurethanes are prepared from polyesters, glycols, or diisocyanates which have a sequence of NNOO unit. However, the polyurethane which may be produced from the reaction of hexachloroacetone (HCA) and aminoalcohol has a sequence of NONO unit. Therefore, this different sequence unit of polyurethane may give different properties from the typical polyurethanes, and will lead to new plastic materials. In this project, N-3-hydroxypropyltrichloroacetamide was prepared from the reaction of HCA and 3-amino-1-propanol in $CHCl_3$ at 0ºC in high yield by an exothermic reaction. The compound was further reacted with HCA in THF or DMSO to give 3-trichloroacetamidopropyltrichloroacetate, $Cl_3CCO_2CH_2CH_2CH_2NHC(O)CCl_3$ at room temperature. Both compounds prepared can be further utilized in preparing a polyurethane. This project focuses on synthesizing

the N-3-hydroxypropyltrichloroacetamide and 3-trichloroacetamidopropyltrichloroacetate by reacting 3-aminopropanol with one and two equivalents of HCA. The latter compound may be reacted with 3-aminopropanol to synthesize polyurethane, $[-O-C(O)-N(CH_2)_3-]_n$, which is a new type of polyurethane with NONO sequence unit.

Communication, Theatre, & Media Production

CTMP1
Forgotten in Crown Heights.
Jessica Ellis, Eileen White, and Kahlil Garner.
Communication, Theatre, & Media Production

Film is a visual medium and telling a story solely through image and sound is the well from where filmed stories emerge. Forgotten in Crown Heights is a humorous and bittersweet meditation on city life and connection made as part our advanced production course, FMP 241, Digital Media Field Production in the Film and Media Production major.

CTMP2
Campus Love.
Aaliyah White, Eileen White, and Kahlil Garner.
Communication, Theatre, & Media Production

Campus Love, a short about two college students managing life and love that shows how we find joy everywhere if we just look. The film was made as part our beginning production course, FMP 141, Introduction to Digital Media Production in the Film and Media Production major.

CTMP3
Witnessing the 2024 Solar Eclipse.
Kelly Jairam, Eileen White, and Kahlil Garner.
Communication, Theatre, & Media Production

Taking advantage of a once-in-a-lifetime event, students in the introductory production class (FMP 141 Introduction to Digital Media Production) went out into the field to record the experiences of those watching the 2024 eclipse on the QCC campus. The footage was then edited into a short documentary by Kelly Jairam,

CTMP4
Bundu Mask.
Stacie Miller and Heather Huggins.
Communication, Theatre, & Media Production

In Th154 Movement for the Actor, students create solo, duet, and ensemble performances through cycles of action research. In Spring 2024, students observed, researched, and responded to artists and their artwork by visiting the QCC Campus Cultural Centers: the QCC Art Gallery, the Harriet and Kenneth Kupferberg Holocaust Center, and the Queensborough Performing Arts Center. In this powerpoint presentation, theatre major Stacie Miller will share about the immediate connection they felt with a Bundu mask during the tour of the African Art Collection at the QCC Art Gallery. Stacie's interest in the Bundu artifact led them to create a

performance. Now they are expanding their knowledge about the mask through additional research and painting a work inspired by the mask.

CTMP5
QCC Theatre's Stupid F##king Bird.
Hana Boachie, Liisa Yonker, C. Julian Jiménez, Rosa Gonzalez, Tavion Hamilton, Omar Pichardo, and Heather Huggins.
Communication, Theatre, & Media Production

Queensborough Theatre produces live performances on campus every semester. Each production is a collaboration between students, faculty, and staff. In this panel presentation, students will share about collaborating on 'Stupid F##king Bird' by Aaron Posner, based on Anton Chekhov's 'The Seagull,' directed by Associate Professor Liisa Yonker, and produced by QCC Theatre in the Shadowbox Theater in April 2024. Following an excerpt screening of the production, the panelists will reflect on their multi-month collaboration. Rosa Gonzalez will share about her experience serving as assistant director through an Independent Study in Theatre (Th-901). Three students will share their performance research from Actor's Workshop I & II (TH-122 and TH-222): Hana Boachie played the role of Nina, Tavion Hamilton played the role of Con, and Omar Pichardo played the role of Trigorin.

Engineering Technology

ET1
Personality Recognition using Machine Learning.
Brett Hirsch and Guozhen An.
Engineering Technology Department

Personality is an often overlooked but significant aspect of our lives. It drives our everyday decision making and can even help us understand compatibility between one another. There exist many indexes for personality categorization, the most popular being the Myers-Briggs Type Indicator (MBTI). This information can be used in a variety of different jobs and fields such as therapy, teaching/tutoring, policework, customer service, hiring managers, hospitality, and more. However, it is difficult to properly accurately detect someone's personality from the testing options that are publicly available. This project aims to predict the personality type of someone by training a machine learning to analyze speech patterns in text. The MBTI is split into four fields, each with 2 different outcomes, for a total of 16 possible personalities. The results of the best performing models for the four traits varies between 51% to 56% accuracy.

ET2
Monitoring Chlorine Residual and other Quality Parameters of Water from Internal Plumbing System by Season and Water Demand.
David Cen Cen, Dugwon Seo, and Ousmane Sy Savane
Engineering Technology Department

The chlorine residual present in the water used for human consumption prevents microorganisms, bacteria, and other pathogens from contaminating the water as the chlorine residual provides an extra layer of protection. The Surface Water Treatment Rule (SWTR) from the United States Environmental Protection Agency (USEPA), requires that a detectable level of chlorine must be present in the water to disinfect it and prevent any possible recontamination that could potentially put the consumer's health at risk by diseases like dysentery or salmonella.

The chlorine residual in the distribution water is significantly affected by the bulk water characteristics and the distribution system's condition. Factors such as high-water temperature, low water consumption-induced stagnation, and aging main distribution system have resulted in a significant loss of chlorine residual in the distribution water (Savane et al, 2019). This research evaluates the effects of the previously stated parameters on the internal plumbing water chlorine residual in a high occupancy institution that operates seasonally as a school. By applying Bayes' theorem, the calculation assesses which parameter contributes the most to chlorine depletion. Water samples are collected twice per week throughout the seasons from different sampling points with differing water consumption levels within the intuition. Water samples are then analyzed for temperature using HQ40D with a temperature probe, whereas chlorine and phosphate levels are measured using a Colorimeter (HACH DR900), which provides accurate readings of both parameters in the samples. According to the SWTR, a detectable chlorine level is crucial for preventing diseases caused by microorganism growth, as chlorine acts as a disinfectant while phosphate acts as the distribution system's protective agent, ensuring water remains safe for human consumption.

ET3
Comparative Analysis of Play-Doh and Super Flex Bolus as Tissue-Equivalent Materials in Radiation Therapy Using Beta and Gamma Radiation.

[1]*MD Rashedul Islam* and [2]Rex Taibu.
[1]Engineering Technology Department, [2]Physics Department

Radiation plays a pivotal role in modern medicine, particularly in imaging and radiotherapy, where bolus materials are essential for optimizing treatment outcomes. These materials protect healthy tissues, enhance dose delivery to the skin, and ensure uniform radiation distribution. This study examines the gamma and beta radiation attenuation properties of the commercially available bolus material Super-flex and Play-Doh. Preliminary findings highlight attenuation behavior, including fluctuations and percentage transmission rates for various thicknesses and materials. Notably, the results indicate a significant similarity in attenuation properties between some form of Play-Doh and Superflex.

ET4
Reconstructing a 3D Image from a 2D X-ray.

Daniel Volin and Huixin Wu.
Engineering Technology Department

Reconstructing a 3D image from an X-ray scan is a critical challenge in medical imaging and diagnostic processes. Traditional X-ray images provide just two-dimensional representations, limiting the ability to fully visualize internal structures. This project aims to develop and optimize algorithms that can accurately generate 3D models of anatomical structures, such as bones, tissues, and organs, from X-ray images. The project explores the use of deep learning techniques, specifically convolutional neural networks (CNNs) and generative adversarial networks (GANs), to evaluate and determine which algorithms produce the most accurate reconstructions with minimum error. The results of the project may provide practical applications in medical imaging and diagnostic processes such as reducing patient exposure to radiation and providing a cost-effective alternative to CT and MRI scans.

English

EN1
Autoethnography of a Luddite: A Community College Student's Search for Authenticity.
Mengrui Zheng and Victoria Tomasulo.
English Department

My autoethnography explores my decision to abstain from social media, linking it to an emerging subculture of Generation Z Luddites in New York City who seek to live more authentically. Through my firsthand account of my recovery from social media addiction and interviews with members of the Luddite Club, a group of Brooklyn teens who reject smartphone use and gather weekly in a public library or park, I argue that it is possible for Gen Z students to take back their agency from Big Tech. Since longer attention spans, more meaningful relationships, and increased enjoyment of reading are among the benefits of social media abstinence, Ludditism is opposed to the goals of a technocrat billionaire class who is invested in keeping citizens anxious and distracted for their own power and profit. Therefore, I make connections between our social media-addicted society and Ray Bradbury's dystopia in Fahrenheit 451, emphasizing that Ludditism can be a form of resistance to techno-authoritarianism. While many have praised all the possibilities that social media offers to create new forms of activism, many of these have proven to be divisive and polarizing. Collective unity may require that we unplug from our devices and connect with each other in physical spaces, where we can see each other without filters.

EN2
When is it Necessary to Leave Home? An Autoethnography of Life After Myanmar's Military Coup.
Toe Chit Lwin and Victoria Tomasulo.
English Department

My autoethnography will explore my lived experiences in Myanmar before and during the military coup, the necessity of leaving home and moving to the United States, and the drastic changes in my life to adapt to life in the United States. Through this narrative, I will examine how Myanmar's political conflicts influenced my perceptions and shaped my understanding of the differences between first-world and third-world nations. My autoethnography will dig into the physical and psychological traumas created by the military coup, my departure from my home and loved ones, and my new life here in the United States. I will also include the undeniable jealousy and envy that arose within me while living here and witnessing the opportunities that I and others receive as I yearn for the same freedoms, humanitarian treatment, and protection from my country and military. Jordan MacKenzie and Michael Zhao define survivor guilt as an intelligible and undesirable feeling that arises in an individual when a certain circumstance harms others and leaves her unscathed because of luck or violation of a requirement of a solitary. I will refer to this definition when I use the term survivor guilt to describe the feelings that developed after I witnessed deaths on the first day I protested, received an invitation to my friend's funeral, repeatedly saw images of dead bodies and records of war victims in the media, left my country to continue my education in the United States, ate warm and delicious meals, and felt safe going out while the people I love are still suffering in Myanmar. I conclude by questioning the justifications for the sacrifice and loss of thousands of lives and contemplating how many more lives must be sacrificed before families can reunite, sleep peacefully at home, and see an end to violence.

EN3
Magical Realism as an Artistic Outlet.
Taina Olivo and Alison Cimino.
English Department

Using magical realism as allegory for systemic issues in artistic spaces. I would like to explore a feminist and queer allegorical lens. I am writing a short story with elements of magical realism and historical context. The idea for the project came from our ENGL 102 class where we read "Two Words" by Isabell Allende and "The Very Old Man with Enormous Wings" by Gabriel Garcia Marquez.

EN4
Stephen Jay Gould's Biographical Approach to Art History.
Marie Philippe and Matthew Lau.
English Department

This presentation will consider interpretations of two well-known paintings by the eminent scientist and humanist Stephen Jay Gould. Gould evaluates Leonardo da Vinci's "Mona Lisa" from the standpoint of his commitment to a premodern theory of a "living earth." This perspective gives more weight to the relationship between the figure and the background in the painting. On the other hand, Gould's evaluation of JMW Turner's "The Fighting Temeraire, tugged to her last berth to be broken up, 1838" puts the painting in the context of the artist's other works that demonstrate his enthusiasm for the new steam powered technologies of his day. My thesis is that while his reading of Turner has merit, Gould's ability to shed new light on a painting as famous as Da Vinci's "Mona Lisa" is the more compelling of the two interpretations.

EN5
Stephen Jay Gould on Painting: Modern Logic and Digestible Information.
Carlos Ramos and Matthew Lau.
English Department

This panel presentation will consider the opening two essays in prolific science essayist Stephen Jay Gould's collection of essay, "Leonardo's Mountain of Clams and the Diet of Worms." In these two essays, Gould considers the relationship between art and science in two distinct but related ways. In this first essay, he connects Leonardo da Vinci's writings on geology to his best known work, The Mona Lisa. In the second essay, Gould considers the way in which history tends to remember artists better than scientists and inventors, despite the fact that scientific changes impact our daily lives far more than artworks do.

EN6
Publish or Perish in Modern Academia.
Alexander Zuba, Mohammad Pervaiz, and Matthew Lau.
English Department

This presentation will explore modern problems with the academic publishing field, including controversies surrounding retraction of key findings in the social sciences and the problem of predatory journals. I summarize the key facts around false articles by key business professors at high level universities like Harvard (Francesca Gino) and Duke (Dan Arletty) and also report on questions being raised about the validity of more legitimate work in the field of behavioral economics. I then turn to the problem of predatory publishing and its impacts, particularly the fact that predatory journals are now as numerous as legitimate ones.

EN7
Reconsidering the Film "Sorry to Bother You".
Amisha Mangal and Matthew Lau.
English Department

This presentation reconsiders the 2018 political comedy film "Sorry to Bother You," directed by Bay Area musician-turned-filmmaker, Boots Riley. Riley's film follows the career of hero Cassius Green, played by Lakieth Stanfield, and costars Tessa Thompson as his girlfriend Detroit and Armie Hammer as the diabolical corporate leader Steve Lift. I summarize key events in the film and then propose an alternative ending around Lift's offer to Green to become the "Martin Luther King of the horsepeople."

EN8
Basketball Autoethnography.
Abdoulaye Thiam and Chy Sprauve.
English Department

Abdoulaye Thiam's autoethnography explores his sports community and examines an event that represents his relationship with it. He also reflects on what his analysis tells him about his relationship with basketball and his community. He writes, "The basketball community in which I find my niche is defined by players, coaches, fans, and organizers who share a mutual interest in the game. This area unites different sections of society that feel a mutual love for basketball. It is not about sport in this kind of community; it is about shared experiences, values of teamwork and discipline, and the resilience fostered among its members." In his presentation, Abdoulaye will discuss how he came to his project and share his autoethnography's findings.

EN9
My Cousin's Wedding: An Analysis of Mandinka Culture.
Aicha Sano and Chy Sprauve.
English Department

Aicha Sano's autoethnography describes her cousin's Mandinka wedding. Through interviews with attendees, she reflects on what her analysis tells her about her relationship with Mandika culture more generally. She writes, "The reason this event [wedding] is important to me is because it serves as a means for me participating in my cultural traditions, family dynamics and personal connection to my culture. It also important because it serves as a foundation for family life and social structure which helps to maintain the bond between community." In her presentation, Aicha will discuss how she came to his project and share her autoethnography's findings.

EN10
The Mona Lisa and the Fighting Temeraire.
Amro Zatar and Matthew Lau.
English Department

This presentation explores Stephen Jay Gould's essays interpreting paintings in light of their historical context. In the case of the Mona Lisa, Gould emphasizes the background in the famous painting. He draws on Leonardo's modern interest in geology and his traditional worldview that sees the earth as alive. In a second example, Gould discusses the paintings of the British artist, JMW Turner. Turner's painting of the battleship The HMS Temeraire is typically seen as a nostalgic, as the famous ship from the Napoleonic era is towed to be broken up into scrap by a smaller modern tug boat. Gould sees it instead as one of a series of paintings by

Turner celebrating technological progress. I found Gould's interpretation of Turner interesting and relatable to nowadays.

EN11
HIP Poster.
Meg Tarafdar.
English Department

High-impact educational practices, including Service Learning/Experiential Learning, Common Read/Common Intellectual Experience, Global Diversity Learning, Undergraduate Research, Students Working in Interdisciplinary Groups/Collaborative Assignments and Projects, and Writing-intensive, play a pivotal role in enhancing student engagement, learning outcomes and retention. These practices encourage active learning, collaboration, and critical thinking, fostering deeper connections between students and their academic communities. This poster highlights and introduces each High Impact Practice, showcasing its role in equipping students with essential skills for academic and professional success.

EN12
Kafka-core.
Zoe Ilano and Alison Cimino.
English Department

Kafka-core

Congrats, you've changed your life.
Now the body is more than

A means to an end- the remnants
Of substance taking their toll. Suppose you woke

& found your skin replaced
With all you were meant to be

& more, The outer layer of your old self,
Dried & frayed and waiting to be peeled

So you dig in with your fingernails,
Raw & red, bloody around the quick,

Until your desquamation is completed,
the slough

Discarded on the floor
& you get to look in, at last,

On metamorphosis. Your face,
Reflected back from the mirror-

Unchanged.

Health, Physical Education, and Dance

HPED1
How Plant Based Diets Help Fight Climate Change.
Arina Rahimi, Edward Diller Diller, Ayaan Efat, Evelyn Botello, Ethan Luna, and Amit Singh.
Health, Physical Education, and Dance Department

Climate change is one of the greatest problems facing the international community. For example, right here in New York City, a current drought is being attributed by many experts to climate change. In our Fundamentals in Human Nutrition class we've learned that animal agriculture is a contributor to climate change. Through our research we learned that a plant-based diet can be an important way to reduce the rates of greenhouse gas emissions, have a low carbon footprint, conserve water, and preserve natural resources which can lessen the impact of climate change. Our research project encourages the Queensborough community to move towards a plant based diet which will help contribute to climate change mitigation and provide health benefits on an individual level.

HPED2
Is Ozempic Safe for Weight Loss?.
Kerry Maruna, Edward Diller, Carrisa Buenafe, Lizbeth Torres, Dejanelle Pinero, and Safa Ali.
Health, Physical Education, and Dance

Ozempic, a semaglutide drug originally developed for type 2 diabetes, has surged in popularity for its weight-loss effects, with users reporting up to a 15% reduction in body weight over 16 months. Celebrities, ordinary people, and even QCC students are turning to it for quick results, but its long-term effects remain unknown; Ozempic has only been on the market since 2017, and no longitudinal studies have been completed. Although it helps control blood sugar and curbs appetite, Ozempic impacts multiple systems, including the brain, pancreas, kidneys, and circulatory system. Our research aims to evaluate these risks and encourage caution in non-diabetic use, especially QCC students.

HPED3
Fad Diets in the Internet Era: Critically Think for Yourself.
[1]*Christine Darelus*, [2]Edward Diller, [1]Jonathan Barayev, [1]Neeraj Kumar, [1]Keziah Durant, and [1]Joycy Macwan.
[1]Health, Physical Education, and Dance, [2]Art and Design Department

In our current era of social media, influencers, and podcasts fad diets which promise rapid weight loss and health improvements is especially attractive to young audiences. Our research focused on how best to educate our peers and encourage critical thinking when it comes to information received on the Internet. Influencers, et.al., present content with personal anecdotes that often appear scientific but are not proven. Our project explores popular Fad Diets such as Ketogenic, Intermittent Fasting, and Dukan and compares them to the evidence-based Mediterranean diet. Our goal is to highlight the importance of choosing sustainable, scientifically supported dietary practices for long-term health benefits.

HPED4
The Innovative Approaches to Reducing Food Waste for a Sustainable Future.
Phoomipatth Asawaitthipond, Edward Diller, Ousha Farquharson, and Gabino Paz.
Health, Physical Education, and Dance

We learned in our Fundamentals of Human Nutrition class that food waste is a tremendous problem globally and locally. Our research focused on New York City and we discovered that 1.4 million tons of food is wasted each year with the average New York City household wasting $1,800 on food. Food waste is also a contributor to climate change. Our goal is to help our community learn about food waste and how they can take steps to prevent food waste. Our research aims to present food waste management ideas, innovative technologies and practices that can be employed to cut down on food waste. We will present sustainable practices and highlight resources that currently exist in our community, that can maximize nutrition and minimize waste.

HPED5
Autism and Massage Therapy.
Cere Coichetti, Frankie Gonzalez, Grace Burgos, and Rezan Akpinar.
Health, Physical Education, and Dance

Autism, or Autism Spectrum Disorder (ASD), is a condition that affects the way people see and interact with the world. Conventional Western treatments for ASD often involve a multi-disciplinary approach, including behavioral management, speech therapy, and educational and school-based interventions. Therapeutic options also span occupational therapy, early intervention, and cognitive behavioral therapy to help children with ASD develop better social and communication skills. Medications may also be prescribed to help with specific symptoms like anxiety, hyperactivity, and repetitive behaviors. Massage therapy is emerging as a beneficial complementary treatment for individuals with ASD, particularly for managing sensory processing issues and stereotypical behaviors. Our survey topic is based upon research showing the many benefits of using Massage as a complementary therapy and how it can help individuals with Autism more fully integrate into society. What we hope to achieve with our survey is first to assess public awareness of the topic and then to introduce massage as a beneficial complementary therapy for this condition. Giving a parent the ability to hold their child is an amazing gift. This will help to integrate the idea of massage therapy as a health care practice and not only a relaxation tool in the public's eye.

HPED6
Public Perceptions of Massage Therapy Qualifications and the Need for Specialized Competencies in all wellness settings, including hospitals.
Rebecca Nunez, Nancy LeConte, and Rezan Akpinar.
Health, Physical Education, and Dance

Massage therapy has become increasingly recognized as a valuable healthcare modality. However, public understanding of the specific qualifications and training required for different massage therapy settings remains limited. This study aims to investigate public perceptions of massage therapy qualifications, with a particular focus on the need for specialized competencies that lend itself well also in hospital-based settings. Through a quantitative survey design, this research will assess public knowledge of massage therapy education requirements, licensing processes, state-to-state requirements, and the scope of practice. By analyzing participants' responses to both closed-ended and open-ended questions, the study will identify gaps in public understanding and explore potential areas for public education and professional development. The findings of this study will contribute to a better understanding of public perceptions of massage therapy and inform strategies to enhance the public's knowledge of the profession. Ultimately, this research seeks to promote public

awareness of the value of specialized training and the importance of qualified massage therapists in various healthcare settings, including hospitals.

HPED7
Developing a Case Study Guideline using Traditional Chinese Medicine principles.
Luciana Cristiano, Roan Shea, and Rezan Akpinar.
Health, Physical Education, and Dance

As part of our massage therapy education, We developed a case study protocol that integrates principles of Traditional Chinese Medicine (TCM) into the practice of shiatsu. Our guideline outlines the entire process, from conducting a thorough intake to creating a personalized treatment plan and documenting and reporting findings. By incorporating key TCM concepts such as Yin/Yang, Five Elements, and Channel Theory, we aimed to comprehensively assess and address clients' needs while maintaining clear and detailed documentation. This project deepened our understanding of designing effective, personalized treatment plans that align with the TCM perspective. It also emphasized the importance of documentation for tracking progress and communicating outcomes. In this poster presentation, we will share the steps we took to develop the protocol, the TCM principles we integrated, and how this project has shaped our approach to evidence-based practice. This experience has helped us grow as a practitioner, enhancing our critical thinking and ability to provide clients with holistic, integrative care.

HPED8
Geriatric Massage.
Mia Sheppard Mckoy, *Li Zehao*, Benjamin Miller, and Rezan Akpinar.
Health, Physical Education, and Dance

Geriatric massage offers numerous benefits, including reducing stress and anxiety, alleviating muscle stiffness and joint pain, improving sleep, and enhancing mobility. For older adults facing challenges such as decreased circulation, arthritis, or general frailty, massage therapy provides a non-invasive approach to address these issues, significantly improving their quality of life. Recognizing the value of geriatric massage, we prepared a survey to assess public awareness of its benefits and to identify knowledge gaps.

HPED9
Identifying, Understanding.
Melissa Clark, Kenneth Cintron, Jack Ren, and Rezan Akpinar.
Health, Physical Education, and Dance

Understand obstacles and issues that prevent individuals from receiving massage. Massage has proven to be therapeutic for healing and recovery while also beneficial to overall wellness. Studies have supported the argument that incorporating massage as part of a self-care routine; whether for health or relaxation, a positive effect can be achieved. By surveying and identify those who have not received or discontinued treatment, we hope to aid LMTs in developing deeper insights in what some of those reasons are. While the immediate barriers of cost and insurance are widely known, the group is certain there are other, less widely discussed reasons. Identifying those obstructions, in conjunction with examining cost and insurance, an education and awareness campaign for therapists and clients alike; with highlighted solutions, can be created. First the team will look to understand what the current demographic of clients looks like along with their reasons for receiving massage. The next step is to create a 10-15 specific question survey to quickly pinpoint the sought after demographic, assess the responses and ultimately paint a detailed picture for reference when encountering resistance to massage.

Mathematics and Computer Science

MA1
Recursive Method in Ising Model on Regular Graphs.
Zebin Zhang and Wenjian Liu.
Mathematics and Computer Science Department

The Ising model, a foundational framework in statistical mechanics, captures the behavior of spins on a lattice and serves as a critical tool in understanding phase transitions, magnetism, and complex systems. In this work, we focus on the Ising model on regular graphs and introduce a recursive method to solve for spin correlations and thermodynamic properties. By leveraging the structural regularity of these graphs, our recursive approach simplifies the computational complexity of the model, enabling efficient numerical solutions that converge to accurate results even for large systems. We present applications of this method in studying critical phenomena and compare it with traditional methods, demonstrating significant computational advantages. This approach not only enhances the understanding of the Ising model in the context of graph theory but also paves the way for advanced applications in network science, statistical mechanics, and computational physics.

MA2
Classification of White Blood Cells using State-of-the-Art Neural Network Models.
Daniel Lin and Esma Yildirim.
Mathematics and Computer Science Department

Human blood is composed of plasma, red blood cells, white blood cells and platelets. White blood cells are the defenders against infection, breaking down foreign proteins of bacteria, viruses, and fungi. Methods such as complete blood count and peripheral blood smears tests are used to calculate the total percentage of these cells in blood. Any changes in the percentage values can indicate the existence of various illnesses including blood cancer. Therefore, classification of blood cell types is an important research area and can be done manually by medical professionals. Microscopic images can reveal the types of white blood cells accurately and several supervised and unsupervised machine learning algorithms have been used to classify them. However, it is very difficult to find labeled datasets and due to the color palette differences of digital microscopic slide scanners, a model trained on one dataset may not predict the types of cells on another dataset accurately. Our goal in this research is two-fold. First, we would like to test newer classification models using transformers (e.g. vision transformers, EANet, etc.) on classification of white blood cells and compare it to state-of-the-art neural network models (e.g. VGGNet, ResNET). Second, we would like to apply normalization methods so that the differences between the training dataset and testing dataset is minimized and develop a pipeline to automatically create a test dataset from raw microscopic images.

MA3
Extending Candlestick Encoding for Improved Stock Price Prediction.
Iman Zahid and Yusuf Danisman.
Mathematics and Computer Science Department

Stock price predictability has traditionally been dismissed by the Efficient Market and Random Walk hypotheses, which claim that stock prices are inherently random. However, recent advancements in artificial intelligence and computational power are challenging this perspective, with emerging studies indicating that stock market behavior may indeed possess a level of predictability. This project explores the predictive potential of candlestick patterns, which visually represent stock price movements through four key values: high, close,

open, and low. Traditional candlestick encoding comprises twelve distinct codes, generated by comparing these values. We propose an extension of this encoding by categorizing the relative size of the difference between open and close values as small, medium, or large, based on historical data. This refined encoding aims to capture additional nuances in stock price movement patterns, potentially enhancing the accuracy of predictive models.

MA4
Enhancing Pattern Accuracy Metric in Candlestick Pattern Mining for Stock Price Forecasting.

Sabina Ruzieva and Yusuf Danisman.
Mathematics and Computer Science Department

Predicting future stock prices is notoriously challenging due to the influence of numerous variables. However, recent advances in pattern mining and machine learning have yielded promising results in forecasting stock market behavior. Candlestick patterns which are visual representations of stock price movements can be used to identify patterns that may indicate future trends. Current prediction methods rely on matching sequences of candlesticks to patterns with the highest "pattern accuracy" scores. However, this metric has limitations, as it can yield high scores even when patterns appear only once in historical data, reducing reliability. This project aims to improve predictive accuracy by developing a weighted pattern accuracy metric that considers the frequency and significance of patterns within historical data, ultimately enhancing the robustness of stock price forecasts.

MA5
Threshold-Based Pattern Mining for Stock Market Candlestick Analysis.

Samuel Miner and Yusuf Danisman.
Mathematics and Computer Science Department

Pattern mining is an essential method for uncovering meaningful patterns in historical stock data. Among various techniques, candlestick analysis is widely used to capture daily stock price movements-open, high, low, and close-through a coded representation. However, small, insignificant differences in these values can impact the pattern coding and, consequently, predictions. This project introduces a threshold-based approach to encoding and pattern mining for candlesticks, aiming to mitigate the influence of minor fluctuations. By optimizing a threshold to exclude minimal price differences, we aim to improve pattern reliability and maximize returns. Performance is evaluated through backtesting, with a focus on determining the ideal threshold for enhanced accuracy in stock price forecasting.

MA6
Historical Research of the Awards Received from NSF Aimed to Increase Women's Participation in STEM Education and Careers - Literature Review.

[1]*Ewa Stelmach*, [2]Yana Shvartsberg, [1]Nhelissa Point Du Jour, [2]Christina Tram, [2]Magdalena Golder-Ryan, [2]Emma Rose Owens, and [2]Genevieve Grace Zorilo.
[1]Mathematics and Computer Science Department, Queensborough Community College [2]Mathematics, Pace University.

During the Fall 2024 semester, students from Pace University (4-year university) and Queensborough Community College (2-year university), under the mentorship of their professors, Ewa Stelmach (Queensborough Community College) and Yana Shvartsberg (Pace University), participated in independent research to analyze initiatives and consecutive grants aimed at increasing women's participation in STEM fields. This research reviews initiatives addressing gender disparity in STEM careers from 1970 to the present in the

United States. The reason for this period selection is tied to the founding of the Association for Women in Mathematics (AWM) organization in 1971. This research topic is still important because despite significant strides towards the gender equality, women remain underrepresented in STEM disciplines and leadership positions. During the independent study, under mentorship of their professors, undergraduate students were involved in the following: explaining the need for this study conducting a literature review posing research questions conducting data analysis (collection, cleaning, filtering, categorizing) performing qualitative analysis conducting quantitative analysis During our presentation, we would like to provide a platform for each of the students, who, under our mentorship, have conducted literature reviews dedicated to the following topics: the history of mathematics education literature on the underrepresentation of women in STEM fields We also encouraged students to explore biases while being cautious not to generalize based on biases that may exist in one context but not necessarily apply elsewhere. We believe this project is unique because it provided undergraduate students the opportunity to engage in analysis typically reserved for graduate-level study. By introducing key aspects of research and analysis at the undergraduate level and offering students a platform to present their findings, we aim to inspire continued research involvement. This experience will not only support their success in graduate education but also arm them with valuable skills for their future careers.

Nursing

NU1
Life's Uneven Playing Field: Social Circumstances and the Battle for Glucose Control in Diabetes.
Nayla Walters and Michelle Rossi.
Nursing Department

Good diabetes management entails blood glucose stability to avoid complications such as DKA, a life-threatening complication arising from prolonged high glucose levels. Socioeconomic status, access to health care, and social support are the most dominant determinants of the outcomes of diabetes. Studies show that members of the lowest socioeconomic classes often face challenges related to accessing health services and insignificantly solid support structures. These conditions increase the prospects for poor glucose control and DKA risk. In the investigation, it was determined that social factors played a major role in the management of diabetes and in the development of DKA. The hypothesis stated that the lower the income and education of the subject and the less support received, the more difficult it would be to manage the disease due to limited healthcare access and opportunities for diabetes education, and a minimal support system. Data analysis was not limited to quantitative measures of income, education, and healthcare access; rather, more qualitative insights were provided through interviews with the patients. The findings revealed that the subjects who had low income, poor education, unstable employment, and very little social support were most likely to present with uncontrolled glucose and DKA. Major complicating factors for treatment included barriers such as financial constraints, lack of health insurance, and inadequate diabetes education. The study concluded that addressing social determinants is important in improving diabetes outcomes and preventing DKA. These barriers could be reduced through targeted interventions, such as expanding healthcare access, community-based diabetes education, or building support networks. These would clearly lead to a reduction of DKA rates and improvement in diabetes management among vulnerable populations. The findings bring into focus the need for integration of social determinants into diabetes care in pursuit of equitable health.

NU2
Examining Socioeconomic Factors and the Prevalence of Type 2 Diabetes: A Literature Review on Food Access, Fast Food Density, and Health Literacy.
Mekahla Simpson and Michelle Rossi.
Nursing Department

CDC reports that more than 38 million Americans have diabetes and 90-95% are type II diabetes. Type II diabetes is a condition that happens when your sugar/glucose in the body is too high. Type II diabetes disproportionately affects individuals from lower socioeconomic backgrounds. This literature review aims to explore one question "Is Type II diabetes more prevalent in individuals with lower socioeconomic background?". A particular focus on critical factors such as the predatory acts on lower socioeconomic areas with densely populated fast food restaurants, health literacy, food access and its effect on Type II diabetes. Studies indicate that areas with limited access to reasonably priced, nutritious foods are extremely saturated with multiple fast food establishments. These establishments target these populations by promoting cheap, calorie packed food. Furthermore, lower levels of healthcare literacy hinder individuals' ability to make informed decisions about managing or preventing diabetes. Such an environment fosters and encourages poor dieting habits and unhealthy eating patterns, which increases the risk for Type II diabetes. The predatory placement of fast food establishments in economically disadvantaged areas is strategically lucrative for such establishments. This research will explore data from several credible databases on the correlation between the prevalence of diabetes and low socioeconomic status. Results consistently prove that lower socioeconomic individuals lack access to decently priced healthy foods, while having various fast food outlets which promote very cheap menus, which fosters the increased prevalence of Type II diabetes. This research highlights the need for interventions for these communities such as increasing access to affordable nutritious and healthy food as well as developing programs to improve healthcare literacy. Future research is vital to confirm these findings as well as to support targeted interventions that will reduce the prevalence of Type II diabetes in lower socioeconomic status individuals.

Physics

PH1
Finding the Heights of Two Features of the Moon.
Thato Sempe More, Edward Sanchez, and Kesy Sempe.
Physics Department

The Moon has many features that cover its surface. These features include basalt plains, mountain ranges, sinuous channels, and impact craters. Some craters are a result of volcanic activity, and some are formed by asteroids and comets traveling in space that impact the surface of the Moon. When an asteroid or comet strikes the Moon, it bounces up to form a mountain-like peak. The height of this peak can be calculated using a technique first developed by Galileo. His technique must be conducted when the Moon is in its first or third quarter. Additionally, the peak to be measured must lie close to the terminator, which is a line that runs along the length of the Moon and separates it into one side that is lit by the Sun and another side that is hidden from sunlight. Using corresponding right triangles and basic geometry from Galileo's technique, we calculated the height of central features from two lunar impact craters (Agrippa and Godin) located near the southeastern corner of Mare Vaporum. This calculation required measuring the length of the features' shadows and the distance of the features from the terminator. The height of the central feature found in the crater Agrippa is 3.03 kilometers. The height of the central feature found in the crater Godin is 4.25 kilometers.

PH2
X-Ray Absorption of Iron and Zinc.
David Lee and Sunil Dehipawala.
Physics Department

X-ray Absorption Spectroscopy (XAS) is an essential technique for probing the structural and electronic properties of unknown materials. It provides detailed insights through two distinct regions of the absorption spectrum: X-ray Absorption Near Edge Structure (XANES) and Extended X-ray Absorption Fine Structure (EXAFS). XANES, located near the absorption edge, reveals critical information about the oxidation state and concentration of specific elements. In contrast, EXAFS, extending beyond the edge, provides precise measurements of bond distances, coordination numbers, and the types of neighboring atoms around the absorber. These experiments require tunable, high-intensity X-ray sources, available only at synchrotron facilities. In New York State, synchrotrons are located at Brookhaven National Laboratory and Cornell University. By leveraging the advanced capabilities of the synchrotron to perform XAS studies, data was able to be uncovered for the absorption edges for zinc and iron. This presentation presents preliminary results from investigations of the iron and zinc absorption edges, demonstrating the power of XAS in better understanding the atomic-scale structure and electronic environment of materials. These findings underscore the value of synchrotron-based XAS in advancing our understanding of complex materials.

PH3
Electronic Switch Implementation to a Data Acquisition System.
Ange Compere, Corey Stalerman, and Raul Armendariz.
Physics Department

The City University of New York (CUNY) Cosmic Ray Muon Detector Array refers to a network of detectors that will be set up across CUNY campuses, specifically designed to detect cosmic ray muons. At Queensborough Community College, the physics department is building a cosmic ray detector for undergraduate research. They aim to create an array of detectors in multiple sites across New York. Every detector consists of three main components: a polyvinyl toluene plastic scintillator plate to detect a charged particle by converting its energy to a flash of faint light, a photomultiplier tube (PMT) to convert the light flash into an electrical pulse, and a data acquisition (DAQ) board to record the time when a particle hits the detector. Basically, the muon detector uses sheets of specialized plastic with fluorescent hydrocarbon molecules. Charged muons that pass through these sheets ionize the molecules which emit photons. These photons can be detected using photomultiplier tubes, which convert the muon energy to electrical pulses. The DAQ electronics box contains various components including a perforated electronics breadboard, GPS receiver, an Arduino Mega, Raspberry Pi, 20V to 5V DC-DC buck converter that convert the received electrical pulses into a voltage that is read by the Arduino. The DAQ electronics box and photomultiplier tubes are powered from the same power supply. However, each component requires a different voltage. The DAQ box needs a fixed 15V. In contrast, the PMT requires a variable voltage to function correctly, as any fluctuation could affect its performance, which is critical for its sensitivity and reliability. The Arduino, Raspberry Pi, and GPS receiver on the other hand, need to be turned off whenever there is a change in its software or GPS complication. To manage this, a switch is installed to separate the PMT circuit and Arduino circuit.

PH4
Error Measurements of Arduino Microcontroller's Timing Measurements.
Sean Tai and Raul Armendariz.
Physics Department

I am measuring the error on timing measurements of an Arduino microcontroller using a pulse generator, oscilloscope, and a C++ software Arduino interrupt function. The Arduino has a 16 MHz oscillator, and 16-bit timer function that can count up to $2^{16} = 65,536$. Theoretically, the number of TNCT1 counts between consecutive pulses is equal to: (pulse period from function waveform generator)/(period of Arduino board oscillator). However, high frequency pulses which have short periods, result in significant errors in TNCT1 counts. To find the reason causing the error I looked into the maximum baud rates of the cable, Arduino Board, computer and the code. The shorter the pulse period from pulse generator requires higher baud rates in communication between the computer and Arduino. Increasing the baud rate reduced the error. I graphed the error of pulse period measurements and baud rates to determine how they correlate and visualise the pattern.

PH5
Cosmic Ray Detector.
Palden Bhutia and Raul Armendariz.
Physics Department

Cosmic Rays are high energy particles that travel through the universe created from supernovas, blackholes, and other extreme astrophysical phenomena. These particles when entering Earth's atmosphere interact with the molecules in the air creating a cascading effect or an air shower. In these showers, secondary particles are present and only a few make it to the ground, specifically the Muons. The research, conducted with Professor Armendariz and Professor Stalerman, aims to take the weak electrical signal generated by a muon and process it through a custom designed circuit board. This research builds upon previous iterations of the circuit board focusing on resolving signal inconsistencies through testing and switching out components for better ones. These changes in the current circuit board must be also implemented on the schematic design and accurately updated using the design software called Altium Designer. Our research plan focuses on analyzing and identifying the optimal components needed to process the signal which will be used to update the schematic for the PCB manufacturer. Our future work will require testing out the new circuit board. If all components function as expected, the circuit board will enable accurate detection and analysis of muons, contributing to the study of cosmic rays and advancing the development of particle detection systems.

Social Sciences

SS1
Developing Secure Attachment: Impact of a Mindfulness-based Intervention on Attachment in School-aged Children.
Cho Wing Ng and Jody Resko.
Social Sciences Department

Attachment is a crucial foundation of social, cognitive, and emotional development starting in early childhood. There are 3 types of insecure attachment: anxious, avoidant, fearful (disorganized). Children who developed insecure attachment styles are more vulnerable to psychological difficulties and physical illness. Although the attachment style formed during infancy typically remains stable throughout adulthood, recent studies suggest that individuals with insecure attachment may become more secure over time, and Mindfulness-based

interventions (MBIs) have been proposed as a potential means to reduce the negative effects of insecure attachment. Since there is a significant gap in the literature regarding how children can develop secure attachment, especially under specific conditions, this study aims to investigate whether MBIs conducted with parent(s) at home can help reduce the negative impacts of insecure attachment and assist school-aged children in developing a more secure attachment style using an experimental design.

SS2

Mystic Minds Online: Exploring the Influence of Spirituality, Esotericism, and Conspiracy Theories on Cognitive Distortions.
Queen Hall and Jody Resko.
Social Sciences Department

For the Summer Intensive Research Program, I have constructed a Research Proposal that aims to identify and explore the overlap of Spiritual and Esoteric ideologies disseminated through social media platforms, and how these factors can lead to cognitive distortions and dissonance in content creators, and audiences. The Research Question asks, 'Are spiritualists online adopting conspiracies (spiritual, racial, cosmic, political) that enable cognitive dissonances and distortions. This study will focus on the participation from individuals with the Black and African Diaspora who actively engage with information and content on social media. Utilizing pre-established Scales and Questionnaires for Cognitive Distortions, Conspiracy Mentality, and Paranormal Belief the research will further identify the prevalence of conspiratualism within a marginalized community often negative impacted by racialized spiritualist conspiracies.

SS3

Anorexia Nervosa: The Silent Struggle Within.
Kareena Geer and Rosalinda Macaluso.
Social Sciences Department

My presentation provides an overview of anorexia nervosa, which is an eating disorder characterized by an intense fear of weight gain and leads to restrictive eating behaviors and extreme weight loss. Additionally, it will examine the impact of the disorder on physical, emotional, and social health. My goal with this presentation is to increase awareness and emphasize the importance of a comprehensive approach to recovery.

SS4

Psychological Effects of Early Morning Prayer on Cognitive and Emotional Well-being.
Sana Naseri and Jody Resko.
Social Sciences Department

In premodern times, the biphasic sleep cycle was a very common sleep pattern for societies. Individuals would intentionally wake up in the middle of the night to pray and engage in religious practices, after which they would begin their day. The routine of waking up before sunrise for prayer has significant spiritual and historical importance in many cultures and religions. In Islam, the Tahajjud prayer, a voluntary night (nafl) prayer performed in the last third of the night, is considered a deeply spiritual act that offers moments of attentiveness and deep connection with God. Research has indicated that early morning prayer, such as Tahajjud, triggers the parasympathetic nervous system, leading to relaxation by reducing sympathetic nervous activity. Studies also show that prayer and meditation, especially when performed during early morning, positively affect emotional stability, mindfulness, and cognitive function, and reduce stress. This study aims to explore the mind-body connection through early morning prayer practices, specifically focusing on the Tahajjud prayer in Islam, while also considering other religious beliefs. The research will examine how these practices, performed before

beginning daily activities, help enhance emotional regulation, mental clarity, cognitive function, and overall well-being. The study will also assess the physical, verbal, language and psychological benefits associated with setting intentions (niyyah) and practicing mindfulness during these early morning rituals. The study will employ surveys and questionnaires distributed to Muslim students and practitioners of other faiths to gather data on how early morning prayer impacts their emotional and cognitive states. Participants will be asked to evaluate their emotional stability, memory, focus, and stress levels before and after engaging in early morning prayer. The findings are expected to show that early morning prayer practices, such as Tahajjud, have a significant positive effect on emotional regulation, attention, and memory.

SS5
The Discursive Construction of Postpartum Depression.
Gilsy Perez, and Patrick Byers.
Social Sciences Department

There is a dual existence of psychological conditions like postpartum depression (PPD) as discourse-independent reality and discourse-dependent language. Discourse-independent facts about mental disorders aren't always a sufficient guide to how the latter are constructed in discourse, or to how individuals place themselves relative to the disorders (e.g., as suffering from the disorder or not). So, this project seeks to expand our vision of PPD by looking at these discursive processes in online discussion forums on the disorder. It is clear from the early findings of this study that: (1) The current collective cultural meanings of PPD are reinforced/reaffirmed as an extension of diagnosed individuals' attempts to make their experiences feel different and extraordinary, relative to specific collective cultural meanings. And (2) objectification of PPD is a rhetorical tactic by which participants have the choice to identify as experiencing or not experiencing the disorder: For instance, people with symptoms consistent with PPD might object to the diagnostic labeling by saying that they "feel depressed after giving birth but do not have PPD."

SS6
Legal Immigrants' Preconception of Undocumented Immigrants and Crimes.
Sabreen Qaisar and Celia Sporer.
Social Sciences Department

This research focuses on the perceptions of illegal/undocumented immigrants in the United States by legal immigrants, focusing on the relationship to crime. The study aims to understand whether legal immigrants perceive undocumented immigrants as contributors to rising crime levels and to explore the underlying attitudes shaping these views using survey methods the Immigration Attitude Scale (Hovey et al., 2024). The IAS is a validate measure for assessing attitudes towards immigration policies and undocumented individuals. The survey will recruit a diverse sample of those who identify as legal immigrants on the college campus and beyond. The data collected will provide insights into social and psychological factors influencing perceptions of undocumented immigrants, focusing particularly on their perceived connection to crimes. The responses will help to identify patterns and potential misperceptions regarding the relationship between undocumented immigrants and crime rates among the immigrants, allowing for a more nuanced understanding of the concepts of immigration and crime. It is hypothesized that those who identify as immigrants will have a more accurate understanding of the relationship between crime and immigrants and their perceptions will lean towards an understanding that the two are not connected in any meaningful way. "Research suggests that there is no meaningful real-world connection between crime rates and undocumented immigrants, media coverage of this group almost exclusively portrays them as criminals" (Figueroa-Caballero & Mastro, 2019). Findings are expected to highlight how media portrayals and society influence perceptions in this area. The study results will contribute to ongoing discussion about immigration reform, challenging common stereotypes that link

undocumented immigrants to criminal behaviors. Furthermore, it aims to provide insights into how perceptions of undocumented immigrants shape social attitudes and constructs. The findings will serve as a foundation for further research and advocacy encouraging a shift toward more informed and empathetic disclosure surrounding immigration.

URCW Panel Presentation Schedule

Panel One: 12:45pm
Creative and Scholarly Student Voices

Marie Philippe, English Department, "Stephen Jay Gould's Biographical Approach to Art History" (Mentor, Professor Matthew Lau)

Carlos Ramos, English Department, "Stephen Jay Gould on Painting: Modern Logic and Digestible Information" (Mentor, Professor Matthew Lau)

Taino Olivo, English Department, "Magical Realism as an Artistic Outlet" (Mentor, Professor Alison Cimino)

Zoe Llano, English Department, "Kafka-core," (Mentor, Professor Alison Cimino)

Panel Two: 1:30pm
Student Perspectives – Autoethnography in Action

Aicha Sano, English Department, "My Cousin's Wedding: An Analysis of Mandinka Culture" (Mentor, Professor Chy Sprauve)

Abdoulaye Thiam, English Department, "Basketball (Autoethnography)" (Mentor, Professor Chy Sprauve)

Mengrui Zheng, English Department, "Autoethnography of a Luddite: A Community College Student's Search for Authenticity" (Mentor, Professor Victoria Tomasulo)

Toe Chit Lwin, English Department, "When is it Necessary to Leave Home? An Autoethnography of Life After Myanmar's Military Coup" (Mentor, Professor Victoria Tomasulo)

Panel Three: 2:15pm
QCC Theatre's "Stupid F##king Bird": Reflections on the spring 2024 production of a postmodern adaptation of Chekhov's 'The Seagull'

Theatre Department Student Presenters:
Hana Boachie, Rosa Gonzalez, Tavion Hamilton, and Omar Pichardo.

Theatre Faculty Mentors:
Professors Liisa Yonker, Heather Huggins, C. Julian Jiménez