## Senior Biographies (cont.)

**Rinat Moshel** is a Principal's List Honor Roll student and NHS vice-president who became involved with science research because she has always been intrigued with the diagnosis of mental disorders. She has researched whether or not Mental Health Courts can reduce recidivism rates (reoffending rates) among criminals. She has always had a passion for criminal justice and wanted to find a way to incorporate this into her other passion, science. With this program, she was able to communicate and form meaningful connections with individuals like judges, lawyers, and medical professionals, helping her strive for successes in the future. She will attend St. John's University with a full-tuition scholarship where she will pursue her dream of becoming a criminal lawyer by majoring in legal studies.

**Yosef Naser** has always been interested in understanding how the body responds to stress and how our bodies handle aging. Through his work in the Einstein-Montefiore High School Research Program, he studied how male and female mice show different reactions to stress. By analyzing gene regulation and protein expression, he identified key differences that could help explain these variations, with his research currently pending publication. Yosef will continue to explore his passion for science and medicine in the Sophie Davis Program at the City College of New York.

**Jasmin Reel** is an NHS Senior, a Principal's List student, and the president of the Indian Club, who has been part of Molloy's Science Research Program since her sophomore year. Her passion for medicine and her interest in the healthcare field initially inspired her to investigate the connection between genetics and obesity. With the growing popularity of GLP-1 agonists, like Ozempic, Zepbound, and Wegovy, she decided to research their impact on obesity. Her project tested the effect of GLP-1 on the rate of lipolysis in white adipocytes. Jasmin will be attending the Sophie Davis BS/MD Program at the CUNY School of Medicine, where she will continue to pursue research as she follows her lifelong dream of becoming a physician.

**Kaitlyn Yuen** has always been fascinated by the processes of biology and chemistry, an interest she has further developed in the Science Research Program at Molloy. She conducted most of her research at the Cold Spring Harbor Laboratory, collaborating with her peers. In her junior year, she completed a research project focusing on the DNA barcoding of mosquitoes and investigated genetic polymorphism. She is currently working with a peer on a project examining how DNA barcoding can be used towards tarantula conservation efforts. Kaitlyn is excited to explore biochemistry further at Stony Brook University.

**Julia Znidarcic** is a NHS and Principal's List Honor Roll student who researched a variety of topics during her time in the Science Research Program. Her project investigated genetic polymorphism using DNA Barcoding, and her research was conducted at the Cold Spring Harbor Lab. She enjoyed getting the opportunity to work in the lab, and is excited to continue research in college. Since junior year she has been doing her research in pairs, and is currently working on her second project with her partner, researching how DNA Barcoding can work alongside tarantula species conservation.

## Special Recognition

Congratulations to **Jillan Kahn**, who was awarded Second Place in the New York City Stem Fair. Jillian was also awarded the Yale Science and Engineering Association Award. She was invited to present her research at the Invention Convention in Albany on May 2nd. Jillian conducted environmental research on water desalination.

Congratulations to **Yoojin Chang, Gideon Jancu**, and **Yosef Naser,** whose research is pending publication. Yoojin presented her research at the International Neuropsychological Society's Convention in Philadelphia in February.

## Thank You!

A heartfelt thank you is extended to all the mentors who have generously shared their time and expertise, bringing our students an incredible experience.



# ARCHBISHOP MOLLOY HIGH SCHOOL

PRESENTS THE

# 2026 SCIENCE RESEARCH SYMPOSIUM

## APRIL 27, 2026
## 2:15PM - 5:15PM

www.molloyhs.org
83-53 Manton Street
Briarwood, NY 11435

# Sophomore Presentations

**Marc Asad**: A TMPRSS6-inhibiting MAb improves disease in a β-thalassemia mouse model and reduces iron in healthy humans

**Khloe Benedicto**: An electrical stimulation intervention protocol to prevent disuse atrophy and muscle strength decline: an experimental study in rats

**Marilena Fillos**: Long-Term Treatment of Postmenopausal Osteoporosis

**Flavia Foukas**: Effect of naloxone therapy on depersonalization: a pilot study

**Alicia Hemraj**: Effect of selenium on thyroid autoimmunity and regulatory T cells in patients with Hashimoto's thyroiditis: A prospective randomized-controlled trial

**Erona Hoti**: Treatment of Alzheimer's Disease Subjects with Expanded Non-Genetically Modified Autologous Natural Killer Cells (SNK01): A Phase 1 Study

**Camille Ithurralde**: Comparing the effectiveness of blood flow restriction and traditional heavy load resistance training in the post-surgery rehabilitation of anterior cruciate ligament reconstruction patients: a UK National Health Service randomized controlled trial

**Andrew Koumoullos**: A Novel Comparison of Southern Sea Otter Fur Buoyancy across Ontogeny

**Giovanni Mulone**: Evaluation of Bacteriophage Efficacy against Pseudomonas aeruginosa in ex vivo and in vitro canine systems

**Ovi Oke**: First-Trimester glycosylated hemoglobin (HbA1c) and maternal characteristics in the prediction of gestational diabetes: An observational cohort study

**Sunya Phengkhamsri**: Experimental Study on In-Situ Observation Technology and Protection Performance Verification of Space Debris High-Speed Impact

**Angelina Pustovoytov**: Trans corneal Electrical Stimulation in Different Optic Neuropathies and Retinitis Pigmentosa

**Antonio Ramirez**: CRISPR-Cas9 Gene Editing for Sickle Cell Disease and β-Thalassemia

**Abhay Shukla**: Duloxetine and cognitive behavioral therapy with phone-based support for the treatment of chronic musculoskeletal pain (CMP): study protocol of the PRECICE randomized control trial

**Kaltrina Troci**: Zebrafish heart regeneration occurs by cardiomyocyte dedifferentiation and proliferation

**Aiden Tsoukias**: Mechanical Gyroscope-Based Roll Motion Reduction of Marine Vehicles: An Educational Setup



# Senior Biographies (cont.)

**Jillian Kahn** is dedicated to finding better ways to access clean water and energy. She originally became interested in desalination through her fascination with pumps and water systems along with her growing awareness of the world water crisis. Over the past year, Jillian has strived to find a more sustainable, affordable, and efficient way to remove salt from ocean water, thus making it drinkable. Her research uses sand as an inexpensive and renewable means of doing just that. She has won multiple awards for her research, including second place in the final round of Terra NYC STEM Fair, Yale Science and Engineering Association Award, and a spot in the statewide Invention Convention competition. Jillian is excited to continue her research and expand her impact at Rensselaer Polytechnic Institute. She plans to dual-major in mechanical engineering and music.

**Gursimran Kaur** is a Principal's List Honor Student, NHS Senior, president of I Am Green Club, vice-president of Indian Club, and secretary of Pre-Med Career Club who has been in the Science Research Program since sophomore year. She is focused on researching molecular biology and how metabolic diseases in organisms can be linked to humans. It has been her lifelong goal to enter the medical field to help people around her by providing them with a safe environment. Gursimran will be attending New York University, where she will major in Biochemistry and apply her education towards a career as an anesthesiologist.

**Westen Lipan** is interested in finding better ways to provide propellant to power liquid-fueled rocket engines. In 9th grade, he developed an interest in liquid-fueled rocket engines through video games, movies, and a good friend. He learned that many of the popular ways to power an engine are cumbersome and inefficient, so he began seeking solutions. Through extensive research, he discovered that using electric motors to move propellant could solve the current issues and possibly be the future of spacecraft propulsion. His research involved designing and building a custom-made liquid pump and testing its viability. With this research, he advanced to the semi-final round of the NYC STEM Fair. He is now committed to RPI and plans to continue his research there.

**Victoria Ma** has long been interested in the medical field, a passion that deepened as she began exploring advancements in artificial intelligence. Through her research, she examined the ethical and practical challenges surrounding the use of AI in psychotherapy, focusing on public perceptions of AI as either a substitute for or supplement to human therapists. Her work highlights concerns about misuse while also recognizing the potential for innovation in mental health care. Victoria is excited to continue her academic journey at the University of California, San Diego, where she will major in general biology. She aspires to apply her education toward a future career as a pediatrician, integrating research and compassionate care to improve patient outcomes.

**Tzeitel Mejia** is a NHS Senior and Principal's List Honor Roll student who became a part of science research in sophomore year. She has an interest in various subjects like English, Social Studies, and Foreign Languages. However, Science has always been her favorite. In the science research program she was involved in two different projects. One investigated the awareness of cervical cancer among adolescent girls and the other involved DNA barcoding different species of pollinators. Thanks to science research she has been able to tap into her particular scientific passions, which has strengthened her love for biology and medicine. Tzeitel plans to pursue a pre-health track and continue her involvement in research at CCNY as a part of the Macaulay Honors College.

**Alya Molina Ramirez** is a Principal's List Honor Roll student, NHS Senior, String Ensemble president and Band Section Leader who became involved in science research in sophomore year. Her interest in the connection between the brain and overall health propelled her to explore how biological systems influence behavior and well-being. She is currently researching the gut-brain axis under the mentorship of Dr. Barry Maizel, investigating how gut health impacts neurological and psychological functioning. Beyond research, Alya is committed to advocacy and justice by working to improve healthcare accessibility through her fellowship with Community Healthcare Network and her work with the Congressional Hispanic Caucus Institute. Alya will attend Columbia University on a QuestBridge Match scholarship, where she plans to major in philosophy on the pre-law track in pursuit of a career in law and policy.

# Senior Biographies

**Elizabeth Canty** is passionate about service and innovation, which manifested in her science research project that seeks to heal the demographic disparities in the healthcare system. Her project focuses on targeting systemic injustices by reducing the threshold necessary for those in need of a bone marrow transplant to have a safe un-matched transplant without complications. This was achieved by analyzing the methods of action of different drugs used in treatment today and finding the safest and most accessible way to distribute them. Elizabeth will be pursuing a professional degree in architecture at the University of Notre Dame in the fall and hopes to use the skills achieved in this field to help others by building safe and sustainable structures.

**Valery Carpio** is an Honor Roll student and member of the National Honor Society who became involved in science research through her passion for healthcare and desire to make a meaningful impact on others. She conducted a research project focused on cervical cancer awareness among adolescents, exploring gaps in knowledge and emphasizing the importance of early education and prevention. Through this experience, she developed strong communication skills and built connections with mentors and healthcare professionals, further solidifying her commitment to the medical field. Valery will attend the University of Michigan School for Nursing, where she will pursue her goal of becoming a nurse and dedicating her future to improving patient care and community health.

**Yoojin Chang** is interested in aging brain research, specifically the intersection of memory function, other chronic health conditions and social variables. She was able to pursue this research through a coding-based approach. Her research explored the main and interactive effects of diabetes and social interactions on episodic memory in a large sample of older adults. Yoojin is looking forward to attending Columbia University in the fall majoring in Biomedical Engineering to further study the technological applications of medicine and research.

**Weronika Chojnowski** is a member of the National Honor Society and a Principal's List Honor Roll student who joined Science Research during her sophomore year of high school. She has long been interested in neuroscience and its connection to human behavior and the physiological processes that maintain life. Her research examines the relationship between perfectionistic tendencies and psychological maladjustment, examining whether higher levels of perfectionism correlate with increased psychological concerns. Weronika is eager to continue pursuing her academic and research passions at the Honors College at Stony Brook University. She hopes to apply her education towards career in the medical field, combining her knowledge of research and the human mind to provide more insightful and respectful patient care.

**Daniel Del Toro Devia** has always been interested in focus and the capacity of students to direct it to what matters. He has seen bright students get overwhelmed with schoolwork due to a lack of directed attention, and he became interested in finding a solution through the science research program. He integrated his love of programming into his solution, FocusOrb, an application designed to help students stay off their phones and focus on what really matters. Daniel is excited to continue to explore his love of programming and helping others at Rochester Institute of Technology.

**Evan Fernandez** is a Principal's List Honor Roll student and NHS senior who is focused on ecology research, specifically through DNA Barcoding skills. He is very passionate about Biology and its interaction with the environment. A majority of his work came from an opportunity through Cold Spring Harbor Laboratory, for which he is very grateful. He continues to work on his DNA identification skills with a focus on insect and organism related samples. Through his project, his interest for molecular biology sparked, and he is now working with a professor who is focused on acute lung injury and oxidative stress. He is excited to continue his passion for research and science at Stony Brook University.

**Gideon Jancu** is an NHS member and Principal's List List Honor Roll Student. After volunteering at a charity called Tap Cancer Out at age 11, he became motivated to join the fight against cancer. Gideon joined the Science Research Program in his sophomore year. He originally conducted research on CAR T-Cells that target Acute Myeloid Leukemia, and conducted a study on particulate matter and radio frequency emissions at Hofstra University. The focus of his research changed to the topic of his current presentation during his internship at Memorial Sloan Kettering Cancer Center, presenting at a symposium there to members of the faculty. He competed in the TERRA science fair with his project, making it to the semi-finals, and his research is pending publication. Gideon plans to continue pursuing cancer research in college and he will major in biological sciences.



# Junior Presentations

**Bella (Emi) Cabeza**: The Effects of Heat, pH, and Salinity on Coral Reefs: A Stress Test

**Jocelyn Castro**: Is early sensory experience necessary for normal auditory perception?

**Allison Chmil**: How can the usage of human cerebral organoids help us understand how breast cancer can lead to a brain metastasis diagnosis?

**Isaac Contreras**: How Do Diet and Physical Activity Interact to Impact Cognitive Function and Development in Adolescents?

**Juneaux Fabello**: Manton Playground Climate – Flood Mitigating Landscape Design

**Mika Haskalp**: DNA Barcoding Parasitoid Wasps

**Arnella Laratte**: The Effects of General Anesthesia on Cognitive Functions

**Lucas Liu**: An Introduction to Polyfluoroalkyl Substances

**Ryder Lombardo**: Treatment Outcomes of Outpatient Community – Based Attendees vs. Mental Health Court Attendees

**Lena Olszowka**: Laminar Airfoils: Effects of Surface Roughness and Treatments

**Scarlett Saye**: Rheology

**Emma Sefaj**: What are the current understandings of how electromagnetic waves propagate through messy or complex environments?

**Elena Skandalakis**: Green Concrete

**Alexandra Tauber**: Induction of autophagy promotes differentiation of glioma-initiating cells and their radiosensitivity

**Sameera Zaheid**: AI-Assisted Auscultation for Pediatric Heart Murmurs

# Senior Presentations

**Elizabeth Canty**: Hematology - Oncology

**Valery Carpio** and **Tzeitel Mejia**: Cervical Cancer Awareness Among Adolescents

**Yoojin Chang**: Associations Between Type 2 Diabetes, Social Interactions, and Memory in Older Adults in the Health and Retirement Study

**Weronika Chojnowski**: The Relationship Between Self-Oriented Perfectionism and Psychological Maladjustment

**Daniel Del Toro Devia**: App Development to aid Distracted Students

**Evan Fernandez** and **Yosef Naser**: Identifying *Aedes Atlanticus* and *Aedes Tormentor* through DNA Barcoding

**Gideon Jancu**: Using CRISPR-Cas9 to Restore FAT1 Exon 2 in Knockout Cell Lines

**Jillian Kahn**: Desalination Innovation: Sand as a Solution to the Water Crisis

**Gursimran Kaur**: The Effect of Oleic Acid Supplementation on the Survival of C.elegans

**Westen Lipan**: The Creation and Application of Electrical Propellant Pump Systems in Liquid Fuel Rocket Engines

**Victoria Ma**: Human Insight on Technology – Assisted Psychotherapy: Evaluating Perspectives of AI-Augmented Therapy

**Alya Molina Ramirez**: Gut Health and the Brain: The Mind-Microbiome Connection

**Rinat Moshel**: Reducing Recidivism Through the Use of Mental Health Courts

**Yosef Naser**: Exploring Differential Molecular Signatures at the Sex and Tissue Levels in a Model of Stress Response

**Jasmin Reel**: The Role of GLP-1 in Modulating Adipocyte Function and Obesity Management

**Kaitlyn Yuen** and **Julia Znidarcic**: Polymorphism in Coquillettidia Perturbans Using Cytochrome c oxidase I (COI) Barcoding



# Presentation Schedule

## Library Conference Room

| | |
|---|---|
| **2:30 PM** | Valery Carpio & Tzeitel Mejia |
| **2:45 PM** | Elizabeth Canty |
| **3:00 PM** | Weronika Chojnowski |
| **3:15 PM** | Yoojin Chang |
| **3:30 PM** | Westen Lipan |
| **3:45 PM** | Jillian Kahn |
| **4:00 PM** | Gideon Jancu |

## Library Computer Lab

| | |
|---|---|
| **2:30 PM** | Rinat Moshel |
| **2:45 PM** | Jasmin Reel |
| **3:00 PM** | Gurismran Kaur |
| **3:15 PM** | Kaitlyn Yuen & Julia Znidarcic |
| **3:30 PM** | Evan Fernandez |
| **3:45 PM** | Alya Molina Ramirez |
| **4:00 PM** | Daniel Del Toro Devia |
| **4:15 PM** | Yosef Naser |