# 2023 Preliminary Round February 19 – March 5

This year, a total of 436 high school students and 317 projects participated in the online Preliminary Round, aiming for an opportunity to advance to the Finals Round and showcase their research to the judges. The exhibitors at Terra NYC vie for a range of awards, with the ultimate distinction being one of the 13 projects chosen to represent the NYC region at the esteemed Regeneron International Science and Engineering Fair (ISEF). Below, you will find the names of the student researchers along with their sponsoring teachers.

The mission of the Terra NYC STEM Fair is to celebrate and showcase the innovative achievements of middle and high school scholars in STEM research. Our goal is to foster connections among these students and their advocates while encouraging their pursuit of science, technology, engineering, and mathematics. For additional details, please visit tnycfair.org or reach out to tnycfair@terraed.org.

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**Abigail, Karen**, PLNT-030, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Concentrations of Phosphatic Clay on Inhibiting the Growth of Harmful Algae in a Hydroponic System***

**Ahluwalia, Ravneet**, ANIM-062, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Rhodiola rosea on Vanessa cardui Growth and Development when Administered at Various Life Stages***

**Ahmady, Nadia**, CELL-418, Cellular and Molecular Biology category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: HIV-I Infection and Antiretroviral Treatment (ART) Regulate the Activity of Dendritic Cell Signaling Pathways***

**Alam, Fouzia**, PLNT-099, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Calcium Silicate on solanum tuberosum (potato) in Drought Stress***

**Alam, Taybah**, BESP-124, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: Graduate Students' Assessment of Dread Factors and Risk Perception***

**Ali, Sameer**, BESP-027, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effects of Different Learning Conditions on Students' Performance During Reading Comprehension Tests***

**Alkhoury, John Pierre**, ENGN-360, Engineering category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Building a device that measures indoor air quality.***

**Alshansky, Daniel**, BESN-460, Behavioral Social Sciences - Neuroscience category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Role of Fixational Eye Movements in Perception of Black Hole Illusions***

**Amin, Arish**, PHYS-161, Physics and Space category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Tire Treads on the Effectiveness of Friction***

**Amoils, Morgan**, MEDH-320, Medicine and Health Sciences category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: Validating RNA-Seq Results on the Top Differentially Expressed Genes That Are Upregulated in Oncogenic GNAS R201C Pancreatic Ductal Organoids***

**Anand, Pritish**, MEDH-225, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Assessing the toxicity of Cadmium in Caenorhabditis elegans***

**Auyeung, Leanne**, MRCO-125, Microbiology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: Investigating the role of yhdP gene in transporting mislocalized proteins in the outer membrane of Gram-negative bacteria***

**Aziz, Aasiyah**, PLNT-089, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of a Phosphate Buffer on the pH and Growth of Hydroponically Grown Kale***

**Babayev, Miriam**, EAEV-009, Earth and Environmental Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Ethylene Glycol Automobile Coolant (Antifreeze) Produced By Galleria Mellonella (Wax Worm) Byproduct***

**Badalov, Berta**, PLNT-054, Plant Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Different Effects of Natural vs. Synthetic sources of Beta-carotene on the Growth and Germination Rates of Triticum Aestivum (wheat)***

**Baksh, Zain**, EAEV-361, Earth and Environmental Sciences category, 9 grade,
KEW FOREST SCHOOL (THE), Sponsoring Research Teacher: Amanprit Kaur
***Project Title: The Effect of Air and Water Temperature on the Pollution Concentration of Nitrate, Nitrite and Heavy Metals in the East River, NY***

**Banik, Saptarshi**, ANIM-062, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Rhodiola rosea on Vanessa cardui Growth and Development when Administered at Various Life Stages***

**Barshay, Anne**, MEDH-023, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Association of Dietary Whole Grains with Coronary Heart Disease***

**Basaran, Elif**, PLNT-068, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The effect of Saccharomyces Cerevisiae on Spinacia Oleracea under high temperature conditions***

**Basnet, Simoni**, ENGN-016, Engineering category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Cosmetic Engineering of Perfume***

**Bhuyain, Abir**, BESP-245, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Echo Chambers and Emotional Contagion***

**Bland, Nevaeh**, MEDH-395, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Racial Disparities Among the Older Generation Who Use Medicare***

**Bonilla, Yasmine**, PLNT-084, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Coffee on the Hydroponic Growth of Beta Vulgaris L.***

**Borges, Isidro**, BESP-299, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Perceptions of Real and Plant-Based Meat***

**Boukhadia, Aymane**, CELL-390, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Effects of Down syndrome on Interferon Pathways***

**Boumakis, Theodora**, PLNT-067, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: How does the sound of stream water affect the growth of Cucumis sativus plants under drought?***

**Brogna, Donato**, ANIM-046, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Astragalus membranaceus Root Extract on Parkinson Inflicted Caenorhabditis elegans***

**Brown, Maddox**, CELL-425, Cellular and Molecular Biology category, 12 grade,
MANHATTAN CENTER FOR SCIENCE MATHEMATICS, Sponsoring Research Teacher: Denise Croote
***Project Title: Differential Expression Analysis of Cystic Fibrosis Lung Epithelial Cells Identifies Distinct Inflammatory Gene Signatures Distinguish Disease Status***

**Caldon, Madison**, MEDH-340, Medicine and Health Sciences category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Temperature's Effects on Bovine Articular Cartilage Stiffness***

**Cartegni, Giulia**, MEDH-277, Medicine and Health Sciences category, 12 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: Type I interferon genes deletion in pancreatic cancer and response to radiotherapy***

**Chahal, Manraj**, BCHM-053, Biochemistry category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Banana Peel Solution on Buffalo Teeth-Whitening***

**Chai, Elisabeth**, BESN-213, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: A Computational Approach to Empathy and Emotional Salience in Mental Health Disorders***

**Chan, Chloe**, ANIM-175, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: The effect of bird dolls on the presence of European starlings — A preliminary study Chloe Chan The Bronx High School of Science***

**Chan, Kiera**, CELL-364, Cellular and Molecular Biology category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Coupling the Cybernetic Model with Flux Balance Analysis for Dynamic Simulation of Overflow Metabolism in Escherichia coli***

**Chandra Kumar, Shirooba**, BESP-461, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: Effects of Perceived Video Emotion on Typing Efficiency***

**Chasteen, Joshua**, ENGN-072, Engineering category, 12 grade,
MANHATTAN CENTER FOR SCIENCE MATHEMATICS, Sponsoring Research Teacher: Evelyn Wing
***Project Title: How Does the Arrangement of Body Tube Sizes Affect altitude on 2 Body Tube Model Rocket***

**Chaudhry, Omar**, ANIM-046, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Astragalus membranaceus Root Extract on Parkinson Inflicted Caenorhabditis elegans***

**Cheema, Meerab**, BESP-024, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effect of Achievement Motivation on Student's Performance***

**Cheerasarn, Sittha**, MEDH-278, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: The Effect of Inhibiting Deubiquitinating Enzymes on Cell Survival during Induced Ischemic Stroke***

**Chelst, Maytal**, MRCO-459, Microbiology category, 12 grade,
YESHIVA UNIVERSITY HIGH SCHOOL FOR GIRLS, Sponsoring Research Teacher: Ruth Fried
***Project Title: Rheological and Toxicological Properties of the Extracellular Polymeric Material (EPM) Produced by Rhizobium Tropici ATCC 49672***

**Chen, Andrew**, BESP-338, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: The Impact of COVID-19 on 3rd through 8th Grade Student Achievement Across the Nation***

**Chen, Benjamin**, CELL-227, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: Enhancer segments within the PBX1 super-enhancer display differential enhancer activity patterns unique to lung adenocarcinoma epigenomic subtypes***

**Chen, Derrick**, EAEV-408, Earth and Environmental Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Comparing Arthropod Communities During Drought and Non-drought Years at a Reclaimed Landfill***

**Chen, Eddy**, SORO-346, Software Robotics category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Capabilities of SOFA in Simulating REACCH***

**Chen, Ivy**, PLNT-084, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Coffee on the Hydroponic Growth of Beta Vulgaris L.***

**Chen, Janice**, BESP-059, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation Between Caffeine Intake on a High School Student's Algebra 1 Test Score***

**Chen, Jiaen**, BESP-028, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effect of Background Sounds on Food Choice***

**Chen, Johnny**, PLNT-068, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The effect of Saccharomyces Cerevisiae on Spinacia Oleracea under high temperature conditions***

**Chen, Joyce**, BESP-029, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Correlation of Crowding and Reading Speed in Adolescents***

**Chen, Kawaii**, PLNT-058, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Aloe vera on the Water Retention of Soil of Ocimum basilicum***

**Chen, Leeanna**, BESP-186, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Economic Recession Prejudice Towards the Unsheltered: Creation of a New Scale on the Basis of Terror Management Theories***

**Chen, Maggie**, ANIM-057, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Accelerated Crayfish Regeneration Rate by Turmeric with the Black Pepper Adjuvant***

**Chen, Mandy**, BESP-341, Behavioral Social Sciences- Psychology/Sociology category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Monkeypox and Tiktok: A Cross-Sectional Study for Content Quality and Stigma***

**Chen, Serena**, PLNT-092, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Green, Oolong, and Black Tea Bags vs. Rockwool on the Growth of Cucumis sativus (Corinto cucumers)***

**Chen, Sky**, BCHM-117, Biochemistry category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Jason Econome
***Project Title: Design and development of arginine mimic that acts as a PRMT inhibitor and the synthesis of a core intermediate***

**Chen, Stephy**, BESP-162, Behavioral Social Sciences- Psychology/Sociology category, 11 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: How do different diets influence one's emotions and mental well being?***

**Chen, Tina**, MEDH-258, Medicine and Health Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Analysis of the ABCD 1 gene to identify conserved, potentially functional RNA secondary structures and potential ASO therapeutic binding sites***

**Chen, Xin Yi**, EAEV-009, Earth and Environmental Sciences category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Ethylene Glycol Automobile Coolant (Antifreeze) Produced By Galleria Mellonella (Wax Worm) Byproduct***

**Cheng, Julian**, PHYS-231, Physics and Space category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Investigating the Effects of Convective Overshoot Scheme and Zone Location on the Development of Blue Loops for Cepheid Variable Stars***

**Cheng, Teo**, ANIM-064, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Barley Grass on Malnourished Silkworm's Productivity***

**Cheung, Emily**, EAEV-145, Earth and Environmental Sciences category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Using Phytoplankton to Reduce CO2 Concentration in Designated Oceanic and Atmospheric Locations***

**Chikkerur, Siri**, ANIM-060, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Astaxanthin on the Lifespan of Starved Brine Shrimp***

**Chklovskii, Samantha**, BESP-260, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Bandwidth Accessibility: Quality of Life of Those With Access to Bandwidth Across The United States***

**Chok, Edward**, ANIM-022, Animal Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Patterns in Nest Construction of Monk Parakeets***

**Chowdhury, Debanjoli**, MEDH-193, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Khaled Mahmoud
***Project Title: A closer examination of Hirschsprung disease genes: what do they tell***

**Chu, Preston**, ANIM-173, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kale Powder on Silkworms Silk Quality and Yield***

**Chumacer, Christopher**, MRCO-144, Microbiology category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: System regulation: Microbial Fuel Cell microorganism comparison***

**Clarke, Mykhaelia**, BESN-014, Behavioral Social Sciences - Neuroscience category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Exploring the Feasibility of a Fluorescence Imaging-Based Brain-Machine Interface***

**Cohen, Eleanor**, ANIM-426, Animal Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Examining Atlantic Croaker Dynamics for Evidence of Climate Change Response***

**Corcuera, Carolina**, EAEV-250, Earth and Environmental Sciences category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The Effect of State Marine Reserves on Kelp Coverage in the Northern and North-Central California Coastal Ecosystems***

**Cosovic, Edita**, MEDH-316, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: Gene dysregulation by inactivation of Tbx1 in cardiac and facial muscle progenitor cells in mammalian embryogenesis***

**Coven, Maks**, MEDH-094, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: Surgical Septal Myectomy: A Permanent Cure for Hypertrophic Cardiomyopathy?***

**Cruz, Melanie**, BESN-205, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: Differences in sensory thalamo-cortical circuits in single-hit double-hit autistic mice***

**D' Costa, Pithiya**, CELL-307, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Khaled Mahmoud
***Project Title: Emergence of a novel mycobacteriophage: Mycobacteriophage PBY1 in infecting and overcoming antibiotic resistant M. smegmatis and M. Tuberculosis***

**Das, Anika**, CELL-391, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: High fat diet and chronic stress on energy metabolism***

**Das, Anindita**, ANIM-171, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: Understanding urban wildlife activity levels using camera traps and machine learning***

**Dass, Larissa**, MEDH-206, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Electrically Conductive Hydrogels as Possible Drug Delivery Vehicles***

**Datikash, Nicole**, BESP-164, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: How do Colors Influence Academic Performance and Learning?***

**Davidoff, Emma**, MRCO-052, Microbiology category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Food Sources on Slime Mold Growth and Memory***

**Davis, Natalie**, BCHM-160, Biochemistry category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Application of Cyanobacteria on H2O-Based Medium Solutions and its effect on Biohydrogen Generation and Electrical Conductivity***

**De Silva, Ishan**, EAEV-434, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: Effects of Aluminum on Northeastern Freshwater Habitats***

**Delim, Kristen**, ANIM-043, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Fish Oil on Planaria Memory, Learning, and Regenerative Abilities on Navigation through a Maze***

**Denker, Benjamin**, BESP-268, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano

***Project Title: An Examination of Modern Partisan Redistricting and its Future: The Gerrymandering Metric Composite***

**D'Halleweyn, Sophie**, SORO-136, Software  Robotics category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Disentangling Algorithmic Bias***

**Di Maggio, Thomas**, ANIM-066, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Banana Flour on Galleria mellonella's Digestion of Low-Density Polyethylene***

**Dimailig, Marlon**, BESP-086, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Screen Brightness on the Attention of Teens***

**Dimont, Sophia**, EAEV-389, Earth and Environmental Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Establishing the effect of invasive turtles on water quality at water bodies of NYC Parks in Queens, NY***

**Dimyan, Mary**, EAEV-215, Earth and Environmental Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: The Rates of Carbon Sequestration in Non-Native and Native Tree Species in Inwood Hill and Highbridge Park***

**Dokic, Natalija**, EAEV-259, Earth and Environmental Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Potential of nitrogen-fixing perennial plants (Medicago sativa, Trifolium pratense, Cajanus cajan) to aid carbon dioxide fixation***

**Donoso, Maraya**, ANIM-043, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Fish Oil on Planaria Memory, Learning, and Regenerative Abilities on Navigation through a Maze***

**Durovic, Delisa**, EAEV-009, Earth and Environmental Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Ethylene Glycol Automobile Coolant (Antifreeze) Produced By Galleria Mellonella (Wax Worm) Byproduct***

**Dzhurayev, Emily**, BESN-140, Behavioral  Social Sciences - Neuroscience category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Literal Optical Illusions on the Accuracy of Mathematical Exams***

**Eastwood, Jemima**, BESP-221, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano

***Project Title: Women's Rights in Far Right Dominated States***

**Efrat-Henrici, Ben**, EAEV-074, Earth and Environmental Sciences category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Investigating the Impact of Climate Change On Local Heat Extremes Using New High Resolution CASI Models***

**Egwuogu, Cynthia**, MEDH-283, Medicine and Health Sciences category, 12 grade,
PELHAM LAB HIGH SCHOOL, Sponsoring Research Teacher: Lea Buena
***Project Title: Antioxidant Nutrients  Inflammatory Diseases***

**Elbadri, Malaz**, BESP-377, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Mindful Breathing Techniques Exercises on the Visual Intelligence of Students***

**Erfan Mamedkhanova, Diyorabonu**, ANIM-057, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Accelerated Crayfish Regeneration Rate by Turmeric with the Black Pepper Adjuvant***

**Estevez, Kate**, CELL-489, Cellular and Molecular Biology category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The Correlation Between Complement Split Product and Lupus Anticoagulant***

**Evans, Lydia**, EAEV-148, Earth and Environmental Sciences category, 11 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: NO2 Emissions from Stove Units in NYC Apartments***

**Excoffon, Lohann**, CELL-076, Cellular and Molecular Biology category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Art plasmid transformations for high-school learning kit***

**Falter, Alana**, PLNT-146, Plant Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: The combined effects of varying gravity levels and light exposures on garden cress development using a low cost 3D printed clinostat.***

**Farid, Samia**, MEDH-031, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: COVID-19 PPE on Acne Vulgaris and Atopic Dermatitis***

**Fazio, Vincent**, ENGN-447, Engineering category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Increasing FDM 3D Printer Flow Rate By Preheating Filament With A Novel Heated Bowden Tube***

**Feist, Miradyn**, ANIM-176, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt

***Project Title: An updated assessment of the role of forage fish and cephalopods in marine sustainability***

**Feng, Max**, ANIM-448, Animal Sciences category, 11 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: The Effects of Caffeine and Alcohol on the Electrically Evoked Potentials of L. terrestris***

**Ferencz, Matthew**, BCHM-257, Biochemistry category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Khaled Mahmoud
***Project Title: Repurposing Random Forest Regression in Python to predict effective cancer treatment on the Ras pathway.***

**Foellmer, Mia**, EAEV-259, Earth and Environmental Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Potential of nitrogen-fixing perennial plants (Medicago sativa, Trifolium pratense, Cajanus cajan) to aid carbon dioxide fixation***

**Fucich, Carina**, MRCO-479, Microbiology category, 11 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The effect of electrolytes on growth of Agrobacterium tumefaciens***

**Funabiki, Kanae**, CELL-321, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: Characterizing Mutant ApoE4 Genes in Cultured Mouse Melanoma Cells***

**Furman, Malcolm**, CELL-335, Cellular and Molecular Biology category, 12 grade,
HORACE MANN SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: Genome-wide association study and immunohistochemical panel implicates novel RUNX2 gene in Progressive supranuclear palsy***

**Gao, Kate**, CELL-314, Cellular and Molecular Biology category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Measuring the decrease in myelin in the brain after a traumatic brain injury***

**Gao, Tian**, ANIM-066, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Banana Flour on Galleria mellonella's Digestion of Low-Density Polyethylene***

**Garcia Gonzalez, Saul**, MEDH-436, Medicine and Health Sciences category, 12 grade,
MANHATTAN CENTER FOR SCIENCE MATHEMATICS, Sponsoring Research Teacher: Denise Croote
***Project Title: Investigating gene expression patterns in Schizophrenia genes***

**Garcia Moreno, Sarah**, BESN-416, Behavioral Social Sciences - Neuroscience category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Characterizing TH+ cells in melanomas from mice carrying common Parkinson's mutation***

**Garderewicz, Christopher**, BESP-424, Behavioral Social Sciences- Psychology/Sociology category, 9 grade,

QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: Does playing video games help or hurt those who play them?***

**Gelfer, Naomi**, MRCO-401, Microbiology category, 11 grade,
HORACE MANN SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: Constructing a DRE and AHR-Based Luciferase Dual-Plasmid Biosensor for the Detection of PCBs in Water Sources***

**Gephardt, Warner**, MATH-033, Mathematical Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effect of Crowd Capacity and Travel on Winning NFL Games***

**Gessesse, Yared**, MEDH-397, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Beating Tubular Micro-heart Models for Accelerated Drug Discovery***

**Gino, Anu**, PLNT-084, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Coffee on the Hydroponic Growth of Beta Vulgaris L.***

**Giordano, Marco**, ENGN-488, Engineering category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Deployment of e-scooters with corral assignments and elastic demand***

**Girand, Olivia**, BESP-274, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: The Relationship Between Increasingly Restrictive Parental Involvement Laws for Abortion and the Pregnancy and Abortion Rates of Teenagers Throughout the United States: A Correlation Study***

**Glikman, Milana**, PLNT-472, Plant Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: The efficiency of chlorophyta in filtering greywater***

**Gosfield, Roxie**, BESP-152, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Ellen Schweitzer
***Project Title: Relating high school students' perceived academic stress to mental and physical health status***

**Grafals, David**, CELL-170, Cellular and Molecular Biology category, 12 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: Assessment of DNA from Vertebrates within the Stratification of Lake Carmel***

**Guevara, Bethzy**, PLNT-050, Plant Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Effectiveness of Egeria Densa on Mitigating Hypoxia Through Oxygen Production***

**Gupta, Siya**, MEDH-201, Medicine and Health Sciences category, 12 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: PI3-Kinase Mutations Leading to Potential Resistance to HER2-Targeted Therapy in HER2-Low Breast Cancer***

**Gural, Daria**, BCHM-345, Biochemistry category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Elisa Margarita
***Project Title: How Bacteria Develops Antibiotic Resistance***

**Haque, Nora**, BESP-306, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joshua Fialkow
***Project Title: Using Parental Immigrant Status as a Predictor of Perceptions of Friendship and Related Applications in Students***

**Harideo, Jason**, BESP-086, Behavioral Social Sciences- Psychology/Sociology category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Screen Brightness on the Attention of Teens***

**Harris, Miller**, CELL-402, Cellular and Molecular Biology category, 12 grade,
HORACE MANN SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: PP1-PNUTS fusion protein as a potential method of studying phosphatase activity***

**Harrop-Williams, Dilan**, ANIM-007, Animal Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Artificial Intelligence vs. Organic Intelligence: Testing the Route Optimization Efficiency of Google Maps Compared to Pogonomyrmex barbatus***

**He, Fiona**, BESN-365, Behavioral Social Sciences - Neuroscience category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Analyzing Low Voltage Fast Seizures Recorded From Human Patients With Epilepsy***

**Heesch, Finley**, MRCO-200, Microbiology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: Structural Determination of EmrAB-TolC Protein Complex in E. coli using Computational and Experimental Approaches***

**Ho, Derek**, BESP-235, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Effects of COVID-era Inflation on Households of Different Economic Backgrounds***

**Hong, Kathy**, PLNT-092, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Green, Oolong, and Black Tea Bags vs. Rockwool on the Growth of Cucumis sativus (Corinto cucumers)***

**Hordiychuk, Anna**, PLNT-218, Plant Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella

***Project Title: The effect of fungal-bacterial interactions on the growth of Lepidium sativum***

**Hossain, Nowshin**, ANIM-097, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Vitamin C and D3 on Alzheimer's Inflicted C. elegans***

**Hossain, Samen**, MATH-190, Mathematical Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Applying Probabilistic Principle of Inclusion-Exclusion For Increasing Subsequences for Random Permutations***

**Hossain, Tasnim**, BESP-311, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: Association Between Symptom Severity and Physical Activity in People With Depression and Anxiety Disorders***

**Howe, Bailey**, MRCO-108, Microbiology category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Intra and Interspecies Control of Bacterial Growth Through Quorum Sensing Molecules***

**Huang, Angel**, EAEV-300, Earth and Environmental Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Effect of Drought on Grassland Bird Species in an Urban Reclaimed Landfill***

**Huang, David**, SORO-346, Software Robotics category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Capabilities of SOFA in Simulating REACCH***

**Huang, Jason**, MEDH-253, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Characterizing Dimer-Specific RAF inhibitors and Combination Treatments of Dimer-Specific RAF inhibitors with MEK inhibitors in Different Cellular Contexts.***

**Huang, Jing**, ANIM-064, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Barley Grass on Malnourished Silkworm's Productivity***

**Huang, Shi Qi**, PLNT-067, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: How does the sound of stream water affect the growth of Cucumis sativus plants under drought?***

**Huang, Willie**, EAEV-384, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Raywattie Chan
***Project Title: The Efficacy of Bioaugmentation and Biostimulation techniques on Remediating Petroleum and Heavy Metal contaminated soil***

**Hubbard, Kayla**, ANIM-217, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: Is There Safety in Numbers? The implications of Herd Grouping on Asian elephant Exploration Behavior.***

**Huda, Ahmad**, BESN-396, Behavioral  Social Sciences - Neuroscience category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Effects of Icer Overexpression on Neuroplasticity: Gene Expression and Neuron Morphology***

**Hwang, Jason**, MEDH-298, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: How mutations affect sequencing of SARS-CoV-2***

**Ibrohimova, Nazokat**, BESP-032, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effect of Audio Environment on Concentration***

**Imbert, Anthony**, BESN-455, Behavioral  Social Sciences - Neuroscience category, 12 grade,
MANHATTAN CENTER FOR SCIENCE  MATHEMATICS, Sponsoring Research Teacher: Denise Croote
***Project Title: Hippocampal Inhibition Following Aversive Learning Disrupts Memory-Linking***

**Javier, Micaella**, MRCO-061, Microbiology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Different Combinations of Orange and Lemon Essential Oil on Serratia marcescens***

**Jean Louis, Saradine**, EAEV-102, Earth and Environmental Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Stephanie Doire
***Project Title: How Select Cover Crops Affect Carbon Sequestration in Soil***

**Jesurasa, Judith**, PLNT-085, Plant Sciences category, 12 grade,
Francis Lewis Highschool, Sponsoring Research Teacher:
***Project Title: The Effect of Concentrations of Earl Grey Tea on the Growth of Daikon radish (Raphanus sativus)***

**Jethwani-Keyser, Taj**, SORO-297, Software  Robotics category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: "The truth will come out": Defending Against the Viral Spread of Misinformation by Characterizing User Responses to Fake News.***

**Jiang, Adriena**, BESP-036, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Effects of Time Since Last Meal on Working Memory***

**Jiang, Amy**, EAEV-250, Earth and Environmental Sciences category, 11 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The Effect of State Marine Reserves on Kelp Coverage in the Northern and North-Central California Coastal Ecosystems***

**Jiang, Benson**, MRCO-144, Microbiology category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: System regulation: Microbial Fuel Cell microorganism comparison***

**Jiang, Evelyn**, MEDH-258, Medicine and Health Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Analysis of the ABCD 1 gene to identify conserved, potentially functional RNA secondary structures and potential ASO therapeutic binding sites***

**Jimenez, Darian**, BESP-471, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The Effect of Bass Equalization Levels in Music on Focus***

**Jinan, Rabtah**, MRCO-479, Microbiology category, 11 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The effect of electrolytes on growth of Agrobacterium tumefaciens***

**Kantor, Jonathan**, MEDH-209, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: Analyzing cellular pathways to understand SARS-CoV-2 related cardiomyopathy through differential expression analysis of single cell transcriptomic data from infected human iPSC-derived cardiac cells.***

**Kar, Susmoy**, MRCO-105, Microbiology category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Testing E. Coli growth with natural vs non-steroidal anti-inflammatory agents***

**Karani, Shaun**, BESN-295, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: The Effect of Contracting COVID on Speech Perception in High-School Students: Evidence from the Brain***

**Kasprowicz, Julia**, ENGN-008, Engineering category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The 6th Sense***

**Kaur, Manpreet**, PLNT-089, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of a Phosphate Buffer on the pH and Growth of Hydroponically Grown Kale***

**Keenan, Sacha**, MEDH-019, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effects of Hands On vs Hands Off Perturbations on Muscle Activation in Paraplegics***

**Kemmett, Danielle**, MRCO-052, Microbiology category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen

***Project Title: The Effect of Different Food Sources on Slime Mold Growth and Memory***

**Keshwani, Aman**, MRCO-270, Microbiology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: The Effect of Kombucha's Tea Base on Ethanol Production***

**Khan, Ameemah**, BESP-037, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effect of Cultural Beliefs on Adolescents' Perceptions of Mental Health***

**Khando, Rinzin**, PLNT-054, Plant Sciences category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Different Effects of Natural vs. Synthetic sources of Beta-carotene on the Growth and Germination Rates of Triticum Aestivum (wheat)***

**Kim, Aaron**, MATH-369, Mathematical Sciences category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: On Numbers whose Integer Parts are Always Composite***

**Kim, Hanmin**, PLNT-085, Plant Sciences category, 12 grade,
Francis Lewis Highschool, Sponsoring Research Teacher:
***Project Title: The Effect of Concentrations of Earl Grey Tea on the Growth of Daikon radish (Raphanus sativus)***

**Kim, Samantha**, PLNT-078, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kiwi Puree as the Nutrient Source on the Growth of Lactuca sativa var. capitata in a Hydroponic System***

**Kim, Spencer**, SORO-417, Software Robotics category, 11 grade,
HORACE MANN SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: Self-Supervised Fine-Tuning for Dense Retrievers for Clinical Note Passage Retrieval***

**King, Jacqueline**, MATH-452, Mathematical Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Analyzing Best Correction Combinations for GPS Satellites for Garmisch and KIT Ground Receivers to Improve Positioning Accuracy***

**Koda, Asuka**, BESP-252, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Auditory Acuity and Auditory Feedback Response in Children With and Without Residual Speech Sound Disorder***

**Kolla, Sree**, BESN-460, Behavioral Social Sciences - Neuroscience category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Role of Fixational Eye Movements in Perception of Black Hole Illusions***

**Kukic, Altin**, MEDH-013, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: An Analysis and Review of Cervical Cancer Screening and Viewpoints in Muslim American Women in North American Urban Areas***

**Kulahlioglu, Elif**, ANIM-350, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: A New Mathematical Model for Forecasting Upcoming Zoonotic Pandemics and Math-driven Strategies for Containing the Economic Impact Below Catastrophic Levels***

**Kumar, Rhia**, ANIM-142, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Nanoemulgel Clove oil Anesthesia on Earthworm Physiology and Behaviorology***

**Kwait-Gonchar, Benjamin**, PLNT-146, Plant Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: The combined effects of varying gravity levels and light exposures on garden cress development using a low cost 3D printed clinostat.***

**Lago, Tara Isabel**, ANIM-282, Animal Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Can SLEAP be used to track and quantify octopus arm movement?***

**Lakhanpal, Rudr**, ANIM-066, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Banana Flour on Galleria mellonella's Digestion of Low-Density Polyethylene***

**Larida, Gianna**, BESP-065, Behavioral  Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation of Students' Chopstick Grips with Their Pencil Grips and MBTI Personality Types***

**Lashley, Max**, EAEV-361, Earth and Environmental Sciences category, 9 grade,
KEW FOREST SCHOOL (THE), Sponsoring Research Teacher: Amanprit Kaur
***Project Title: The Effect of Air and Water Temperature on the Pollution Concentration of Nitrate, Nitrite and Heavy Metals in the East River, NY***

**Lau, Ka Wing**, PLNT-012, Plant Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: Epigenetic Arabidopsis Plant Research***

**Lee, Jeongwon**, PLNT-289, Plant Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Analysis of Climate Sensitivity of Crop Pollinations: Game Theoretical Model for the Coexistence Dynamics of Anemophiles and Entomophiles in the Ecosystem and Agrosystem***

**Lee, Juhyoung**, SORO-330, Software  Robotics category, 12 grade,

STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: An Evaluation Mechanism For Crowdsourcing Storefront Accessibility Data***

**Lee, Julianne**, PHYS-207, Physics and Space category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Moving matter with sound: Activating dynamical systems with interfering acoustic waves***

**Lee, Stephanie**, MATH-334, Mathematical Sciences category, 11 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: The Correlations between Socioeconomic Factors and the Amount of Trihalomethane in Drinking Water in the State of NY***

**Lee, Yule**, ANIM-173, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kale Powder on Silkworms Silk Quality and Yield***

**Lema, Justin**, EAEV-111, Earth and Environmental Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Effects of Umbellifers germination on soil respiration***

**Lengsfield, Mira**, CELL-337, Cellular and Molecular Biology category, 11 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: Mechanisms of lysosomal cross-correction in Mucopolysaccharidosis type IIIC by gene-modified hematopoietic stem and progenitor cells***

**Li, Abigail**, BCHM-476, Biochemistry category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: The effect of Vitamin B1 and Citric Acid on the Fat Content of Raw Beef***

**Li, Allen**, BESP-150, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Ellen Schweitzer
***Project Title: Financial literacy and stock market participation; Evidence from the 2019 Survey of Consumer Finances***

**Li, Andrew**, EAEV-071, Earth and Environmental Sciences category, 11 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: Identifying Thermokarst Lakes in the Qinghai-Tibetan Plateau Using Discrete Wavelet Transform-Based Deep Learning***

**Li, Haorun**, MEDH-070, Medicine and Health Sciences category, 10 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: Multi-Property De Novo Drug Design Using Multi-Objective Deep Reinforcement Learning***

**Li, Jeffrey**, CELL-208, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa

***Project Title: Using Statins to Inhibit Feraheme Nanoparticle Internalization in Macrophages to Improve Nanomedicine for Cancer***

**Li, Justin**, CELL-118, Cellular and Molecular Biology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Jason Econome
***Project Title: Investigating the role of the Nse2 subunit of yeast Smc5/6 in SUMOylation, DNA Recombination, and Replication***

**Li, Katie**, ANIM-060, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Astaxanthin on the Lifespan of Starved Brine Shrimp***

**Li, Mingpei**, MEDH-392, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: The Role of HGF/c-Met Signaling in the Development of Type 1 Diabetes***

**Li, Rebecca**, BESN-365, Behavioral Social Sciences - Neuroscience category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Analyzing Low Voltage Fast Seizures Recorded From Human Patients With Epilepsy***

**Li, Rosanna**, EAEV-482, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Raywattie Chan
***Project Title: Enhancing the Removal of Nitrates and Phosphates in Marsh Water by the Synergetic Relationship between Mytilus edulis and Eisenia fetida***

**Libshutz, Lucas**, PHYS-373, Physics and Space category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: Results of Synthetic High Resolution Spectra from Titan Surface Observations***

**Liew, Alex**, BESP-045, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: How does listening to music of different languages influence academic performance?***

**Lim, Abigail**, PLNT-020, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Kelp Extract on Growth and Development of Phaseolus vulgaris***

**Lim, Mandy**, BCHM-236, Biochemistry category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: Analysis of Conformations of ATP and ADP Bound to Proteins***

**Lim, Sharon**, ANIM-097, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Vitamin C and D3 on Alzheimer's Inflicted C. elegans***

**Lin, Anthony**, EAEV-005, Earth and Environmental Sciences category, 11 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Circulation Patterns and Long-Term Trends in the Duration and Spacing Between Heat Waves for the NYC Metropolitan Area***

**Lin, Calvin**, BESP-045, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: How does listening to music of different languages influence academic performance?***

**Lin, David**, EAEV-384, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Raywattie Chan
***Project Title: The Efficacy of Bioaugmentation and Biostimulation techniques on Remediating Petroleum and Heavy Metal contaminated soil***

**Lin, Jun**, ANIM-046, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Astragalus membranaceus Root Extract on Parkinson Inflicted Caenorhabditis elegans***

**Lin, Kyler**, BESP-191, Behavioral Social Sciences- Psychology/Sociology category, 11 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: How can video game music affect someone's concentration and productivity?***

**Lin, Maggie**, PLNT-047, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Ghost Shrimp (Palaemonetes paludosus) Aquaponics on the Cultivation of Watercress (Nasturtium officinale)***

**Lin, Nicole**, ANIM-147, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Specialized diet on Polystyrene consumption in Galleria Mellonella***

**Lin, Nikki**, ANIM-051, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Noise Pollution on Lumbricidae Behavior***

**Lin, Shiya**, MEDH-202, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: Identifying Patterns in Approval Rationale for Clinical Glioblastoma Drug Treatments***

**Lin, Si Rong**, MRCO-106, Microbiology category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: The Effects of Vapes on the Microbiomes***

**Lin, Vicky**, ANIM-060, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Astaxanthin on the Lifespan of Starved Brine Shrimp***

**Lin, Vivian**, PLNT-050, Plant Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Effectiveness of Egeria Densa on Mitigating Hypoxia Through Oxygen Production***

**Lin, Winni**, BESP-059, Behavioral  Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation Between Caffeine Intake on a High School Student's Algebra 1 Test Score***

**Lin, Yi Ran**, PLNT-020, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Kelp Extract on Growth and Development of Phaseolus vulgaris***

**Liu, Daniel**, SORO-351, Software  Robotics category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Jason Econome
***Project Title: Comparison of Convolutional Neural Network Architectures In Training A Machine Learning Classifier for Urban Home Sounds***

**Liu, Emily**, ANIM-057, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Accelerated Crayfish Regeneration Rate by Turmeric with the Black Pepper Adjuvant***

**Liu, Jed**, SORO-346, Software  Robotics category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Capabilities of SOFA in Simulating REACCH***

**Liu, Jiahe**, EAEV-071, Earth and Environmental Sciences category, 11 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: Identifying Thermokarst Lakes in the Qinghai-Tibetan Plateau Using Discrete Wavelet Transform-Based Deep Learning***

**Liu, Michelle**, BESP-428, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Transitioning from summer vacation to school increases stress levels in high school students with irregular menstruation.***

**Liu, Michelle**, BESP-036, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Effects of Time Since Last Meal on Working Memory***

**Liu, Olivia**, EAEV-071, Earth and Environmental Sciences category, 12 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Melissa Doellman
***Project Title: Identifying Thermokarst Lakes in the Qinghai-Tibetan Plateau Using Discrete Wavelet Transform-Based Deep Learning***

**Liu, Xin Qi**, MEDH-292, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov

***Project Title: New Computational Methodology to Identify Classes of Near-Infrared Fluorescence Cyanine Dyes for Early Diagnosis of Alzheimer's Diseases***

**Liu, Ziqing**, EAEV-325, Earth and Environmental Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Denitrification of Stormwater Outfalls Using Woodchip Bioreactors***

**Livshits, Ilana**, CELL-119, Cellular and Molecular Biology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Jason Econome
***Project Title: High-resolution analysis of human skeletal stem cell function reveals an age-related increase in differentiation that could drive stem cell loss***

**Lok, Ingrid**, BESP-035, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Relationship Between Coping Styles and the Severity of PTSD Symptoms***

**Lomboy, Alexandra**, ANIM-097, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Vitamin C and D3 on Alzheimer's Inflicted C. elegans***

**Long, Anthony**, PLNT-293, Plant Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Transcriptome analysis reveals possible mechanisms of SR45 as a suppressor of defense genes in Arabidopsis thaliana***

**Luo, Joshua**, CELL-387, Cellular and Molecular Biology category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: Single-molecule Investigation of the Interaction between MeCP2 and chromatin***

**Ma, Alex**, BCHM-327, Biochemistry category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Biophysical Characterization of Human Immune Protein S100A12 and its Interaction with CD36***

**Ma, Angela**, SORO-178, Software Robotics category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Elese Lau
***Project Title: The Implementation of Gesture Prediction through Classification***

**Ma, Nicole**, ANIM-142, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Nanoemulgel Clove oil Anesthesia on Earthworm Physiology and Behaviorology***

**Mackay, Harry**, EAEV-172, Earth and Environmental Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: Identifying the Nutrients That Control Algal Blooms and Hypoxia in New York Estuaries***

**Mahbub, Zubayer**, MEDH-324, Medicine and Health Sciences category, 12 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Goldilocks' Bedtime: The Effect of Hours of Sleep on Adolescent Obesity***

**Mai, Alexis**, BESN-017, Behavioral Social Sciences - Neuroscience category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Impact of Social Isolation on Microglia***

**Mallia, Abigail**, SORO-450, Software Robotics category, 12 grade,
ARCHBISHOP MOLLOY HIGH SCHOOL, Sponsoring Research Teacher: Mary Mallia
***Project Title: Sound-Aid: Using Python to Discriminate Between Music and Speech***

**Marka, Arpad**, MEDH-397, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Beating Tubular Micro-heart Models for Accelerated Drug Discovery***

**Martinez, Denise**, PLNT-078, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kiwi Puree as the Nutrient Source on the Growth of Lactuca sativa var. capitata in a Hydroponic System***

**Mau, Kaitlynn**, PLNT-018, Plant Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Impact of Lactobacillus casei on corn, pea, and radish plants in sterilized and non-sterilized soil***

**Meksi, Erti**, MRCO-144, Microbiology category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: System regulation: Microbial Fuel Cell microorganism comparison***

**Melika, Marcellino**, PLNT-067, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: How does the sound of stream water affect the growth of Cucumis sativus plants under drought?***

**Meneses, Isabelle**, BCHM-053, Biochemistry category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Banana Peel Solution on Buffalo Teeth-Whitening***

**Meylikhov, Denis**, BCHM-010, Biochemistry category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: The Impact of L-carnitine, Phosphatidylcholine, Choline Bitartrate, and L-Arginine (Dietary Supplements) on Escherichia coli Growth and the Subsequent Production of Trimethylamine N-Oxide (TMAO)***

**Meylikhov, Elya**, BCHM-010, Biochemistry category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: The Impact of L-carnitine, Phosphatidylcholine, Choline Bitartrate, and L-Arginine (Dietary Supplements) on Escherichia coli Growth and the Subsequent Production of Trimethylamine N-Oxide (TMAO)***

**Michel, Krislyn**, EAEV-123, Earth and Environmental Sciences category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Communicating the Plastic Pollution Issue in New York City through Data Visualization: An Interactive Microplastics Information Platform***

**Mikheyeva, Marianna**, ANIM-256, Animal Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: A Comparative Investigation of Maximum Likelihood Methods for Estimating Phylogenies from DNA Barcodes***

**Mishra, Arjun**, BESP-377, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Mindful Breathing Techniques Exercises on the Visual Intelligence of Students***

**Mitchneck, Samuel**, BESP-244, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Comparing the Accuracy of Two Indicators of Gerrymandering***

**Mohammed, Siddiq**, ENGN-130, Engineering category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: Investigating the Production of Gelatin Methacryloyl Polymerized Microspheres with Breast Cancer Cells Using Microfluidic Devices***

**Moonthaha, Siddratul**, BESN-203, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: The Role of Melanocortin 4 Receptor GABAergic Neurons in Depression and Feeding in the Dorsal Raphe Nucleus***

**Morehead, Wilhelmina**, ENGN-041, Engineering category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Modifications of Turbo Chargers in a Common Passenger Car***

**Morgan, Kiele**, BESN-232, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: The Effect of NMDA Receptor Blockade on Neurogenesis and Neural Crest Development.***

**Morshed, Sadeea**, MRCO-479, Microbiology category, 11 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The effect of electrolytes on growth of Agrobacterium tumefaciens***

**Motwani, Zahra**, CELL-375, Cellular and Molecular Biology category, 12 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: The Isolation of Exosomes from Bovine Colostrum and Preparation and Characterization of Exosomal-Curcumin Formulation with Lung Cancer Cell Lines A549 and H1299***

**Mulholland, Blair**, BESP-473, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,

Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: Increased use of Social Media Impacts the Establishment of Autonomy in Adolescents: a Possible Effect of COVID-19 Quarantine***

**Mulkandov, Joshua**, ANIM-007, Animal Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Artificial Intelligence vs. Organic Intelligence: Testing the Route Optimization Efficiency of Google Maps Compared to Pogonomyrmex barbatus***

**Munoz, Sophie**, PLNT-030, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Concentrations of Phosphatic Clay on Inhibiting the Growth of Harmful Algae in a Hydroponic System***

**Murray, Annette**, BESP-386, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Emotional factors in maternal relationships predict the diagnosis of anorexia nervosa, bulimia nervosa, and binge eating disorder***

**Mushiyev, David**, BESP-131, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Machine Learning and Artificial Intelligence Approach to Forecasting COVID-19 Complications with the Purpose of Early Treatment and Combating Systemic Racism***

**Nadler, Hannah**, BESN-210, Behavioral Social Sciences - Neuroscience category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: The Effect of Cancer on the Spontaneous Signals of Neurons in the PNS and CNS***

**Nanberg, Lena**, EAEV-414, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: The Effects of Calcium Hydroxide and Potassium Hydroxide on the Degradation of PFAS***

**Nasir, Aleeza**, BESP-086, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Screen Brightness on the Attention of Teens***

**Nassar, Salma**, BCHM-179, Biochemistry category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Elese Lau
***Project Title: A Biomimetic Approach to Serotonin Regulation: Examining Serotonin Degree of Association to Select Aromatic Dipeptides***

**Newman, Elizabeth**, BESP-301, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Crumbling Faith in Democracy: the Relationship Between Trust in Government and Gerrymandering***

**Newman, Rosemary**, BESP-275, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Partisanship or Partnership: Tracing the Connection Between Political Ideology and Financial Support From Bipartisan Sources***

**Ng, Veronica**, EAEV-107, Earth and Environmental Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Performing Barcoding and Soil Analyses to Investigate Ecosystem Resiliency in Different Flood Zones of Brooklyn, NY***

**O'Connor, Theresa**, BESP-223, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: Learning Without Trying: Detecting Evidence of Unconscious Learning During Visual Task with Multiple Goal-Relevant Stimuli***

**Obertos, Anna**, MEDH-011, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Food Environment and Life Expectancy in California***

**Obertos, Christina**, MEDH-011, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Food Environment and Life Expectancy in California***

**O'Gallagher, Katie Anne**, BESP-443, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: Analyzing Twitter Hate Speech as a Predictor for LGBTQ+ Hate Crimes***

**Oh, Yeon Su**, BESP-065, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation of Students' Chopstick Grips with Their Pencil Grips and MBTI Personality Types***

**Oke, Stutee**, MATH-156, Mathematical Sciences category, 12 grade,
ARCHBISHOP MOLLOY HIGH SCHOOL, Sponsoring Research Teacher: Mary Mallia
***Project Title: Analysis of Operational Performance***

**Olhoviks, Michelle**, ENGN-442, Engineering category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: Improving MRI Function with $5 Walkman Audio Tape: Nanoparticle Amplification of Transverse Fields in Magnetic Resonance***

**Ong, Maggie**, PLNT-078, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kiwi Puree as the Nutrient Source on the Growth of Lactuca sativa var. capitata in a Hydroponic System***

**Owens, Benjamin**, MATH-328, Mathematical Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS

***Project Title: Perfect Numbers and the Repeated Sigma Function***

**Pabon, Mariah**, CELL-393, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Validation and Optimization of Fluorescent Probes to Detect Dkk2 mRNA***

**Panchal, Shivani**, BESN-140, Behavioral  Social Sciences - Neuroscience category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Literal Optical Illusions on the Accuracy of Mathematical Exams***

**Pankevich, Vera**, PLNT-222, Plant Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: A new montane species of Protium from Ecuador and Peru.***

**Papamitsakis, Lucas**, BESP-141, Behavioral  Social Sciences- Psychology/Sociology category, 11 grade,
Brooklyn Technical HIgh School, Sponsoring Research Teacher: MacRae Maxfield
***Project Title: A Quantitative Analysis of Global Well-being***

**Parkin, Zoe**, BESP-151, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Ellen Schweitzer
***Project Title: Promising increases in third-grade test scores following the institution of high-quality universal pre-K in NYC***

**Parsa, Oriana**, CELL-481, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Exosomes  the Early Detection of Gynecologic Cancers***

**Paschke, Lucas**, MATH-034, Mathematical Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: Multivariable analysis on stock price and trade volume trends in the post-COVID-19 stock market shutdown era***

**Patel, Rohan**, MRCO-332, Microbiology category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Optimal Conditions for an Influenza A Viral Infection in MDCK Cells***

**Patel, Ruchi**, PLNT-068, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The effect of Saccharomyces Cerevisiae on Spinacia Oleracea under high temperature conditions***

**Patel, Shirish**, ENGN-313, Engineering category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Revolutionizing Fluid Flow Using Triply-Periodic Minimal Surfaces***

**Patel, Shivansh**, SORO-174, Software  Robotics category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Elese Lau

***Project Title: Implementing a Novel Feature Selection Framework for EMG Signal Classification***

**Paul, Swarnali**, BESP-269, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Age Gaps and Divorce: An Examination into How Age Gaps Affect Likelihood of Divorce***

**Pavon-Trujeque, Valeria**, EAEV-482, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Raywattie Chan
***Project Title: Enhancing the Removal of Nitrates and Phosphates in Marsh Water by the Synergetic Relationship between Mytilus edulis and Eisenia fetida***

**Pensabene, Isabella**, SORO-247, Software Robotics category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Elese Lau
***Project Title: Using MATLAB and the Ninapro Database to Determine the Most Accurate Method for Surface Electromyography Collection***

**Perazzo, Alexandra**, BESP-186, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Economic Recession Prejudice Towards the Unsheltered: Creation of a New Scale on the Basis of Terror Management Theories***

**Perez, Camille**, CELL-189, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Prematurely terminated NSD1 escapes nonsense-mediated mRNA decay to promote stem cell self-renewal***

**Perkis, Ruby**, MRCO-110, Microbiology category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Modeling the Infant Microbiota: Influence of Baby Formulas on Bacterial Growth and Absorbance***

**Peter, Sarah**, BESP-115, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Ellen Schweitzer
***Project Title: COVID Pandemic Effects on Marriage and Fertility Rates: Evidence from the American Community Survey***

**Petrovici, Paul**, MEDH-263, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: .Does Nutrition Information Affect Obesity Rates? A study of trends across the United States.***

**Pham, Tony**, BCHM-053, Biochemistry category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Banana Peel Solution on Buffalo Teeth-Whitening***

**Pilozo, Ida**, PLNT-050, Plant Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Effectiveness of Egeria Densa on Mitigating Hypoxia Through Oxygen Production***

**Pokharel, Rishima**, MEDH-470, Medicine and Health Sciences category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: Microengineering Biosystems for Pancreatic Cancer Modeling***

**Pozhoga, Daria**, PHYS-026, Physics and Space category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: Characterization of WASP-39b atmosphere with JWST***

**Pradhan, Avik**, EAEV-361, Earth and Environmental Sciences category, 9 grade,
KEW FOREST SCHOOL (THE), Sponsoring Research Teacher: Amanprit Kaur
***Project Title: The Effect of Air and Water Temperature on the Pollution Concentration of Nitrate, Nitrite and Heavy Metals in the East River, NY***

**Qureshi, Sara**, MRCO-039, Microbiology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: Association of Malassezia in Crohn's Disease and its detection through an RT-PCR test***

**Ramlall, Arianna**, MEDH-407, Medicine and Health Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: PARP inhibitors Cause Low Viability and Higher Cytotoxicity in Cells with BRCA Mutations***

**Ranjan, Ashwin**, BESP-458, Behavioral  Social Sciences- Psychology/Sociology category, 11 grade,
DALTON SCHOOL (THE), Sponsoring Research Teacher: Joaquin Ramsey
***Project Title: A Novel Method for Real-Time Detection of Psychological Stress in High School Students***

**Rawshan, Tasnuva**, MRCO-052, Microbiology category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Food Sources on Slime Mold Growth and Memory***

**Reich, Logan**, PHYS-048, Physics and Space category, 11 grade,
HUNTER COLLEGE CAMPUS SCHOOLS, Sponsoring Research Teacher: Brian Park
***Project Title: A Detailed Model of the AGN in NGC 7469***

**Reid, Natalie**, CELL-204, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: In-silico analysis of post-translational modifications of PTEN suggest a role in pathogenicity of PTEN hamartoma tumor syndrome, autism spectrum disorder and developmental delay***

**Reynoso, Mariella**, ANIM-282, Animal Sciences category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Can SLEAP be used to track and quantify octopus arm movement?***

**Ritz-Jack, Alden**, MATH-494, Mathematical Sciences category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Creating a Mathematical Model to find cost-effective solutions to Beamforming***

**Roh, Kun-Hyung**, MEDH-382, Medicine and Health Sciences category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Novel pharmacogenomic methodology for the identification of the first-in-class mechanisms of phenothiazine derivatives to delay and rescue Alzheimer's Disease pathology and extend lifespan in C. elegans***

**Rosenberg, Julian**, MRCO-388, Microbiology category, 12 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: Knocking Out SMG6L to Examine Nonsense-Mediated-Decay and Antigenic Variation in Plasmodium falciparum***

**Rothman, Gabe**, MRCO-459, Microbiology category, 12 grade,
YESHIVA UNIVERSITY HIGH SCHOOL FOR GIRLS, Sponsoring Research Teacher: Ruth Fried
***Project Title: Rheological and Toxicological Properties of the Extracellular Polymeric Material (EPM) Produced by Rhizobium Tropici ATCC 49672***

**Roy, Nilanjana**, BCHM-160, Biochemistry category, 12 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The Application of Cyanobacteria on H2O-Based Medium Solutions and its effect on Biohydrogen Generation and Electrical Conductivity***

**Rualo, Gavin**, BESP-381, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Has the COVID-19 pandemic affected implicit bias as a result of increased mortality salience?***

**Rubinoff, Joshua**, PLNT-089, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of a Phosphate Buffer on the pH and Growth of Hydroponically Grown Kale***

**Rukin, Sophie**, MEDH-403, Medicine and Health Sciences category, 11 grade,
HORACE MANN SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: Evaluating the Efficacy of Ventilatory Burden***

**Rup, Taylor**, ANIM-355, Animal Sciences category, 12 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: Evolutionary significance of Drosophila species enzyme function***

**Rupert-Gopalsami, Daniella**, MRCO-157, Microbiology category, 12 grade,
ARCHBISHOP MOLLOY HIGH SCHOOL, Sponsoring Research Teacher: Mary Mallia
***Project Title: The Efficacy of Ginger vs Neomycin vs Combination of Both on Inhibition of Bacterial Growth in the Treatment of Infectious Disease***

**Ryan, Oliver**, CELL-214, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: Modified forward genetic screen in neurexin knockout C. elegans identifies mutants with mutations relevant to presynaptic assembly***

**Saha, Sharna**, BESN-394, Behavioral Social Sciences - Neuroscience category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: ASSESSMENT OF DRUGS INHIBITING METABOLIC GENES AND THEIR IMPLICATION IN ALZHEIMER'S DISEASE MODEL IN CAENORHABDITIS ELEGANS***

**Sami, Shahabir**, CELL-132, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: An overview of the distribution of the structural motifs among DNA-binding proteins.***

**Sampson, Angel**, BESP-165, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: How does music affect reaction rate?***

**Samuels, Eliana**, MRCO-459, Microbiology category, 12 grade,
YESHIVA UNIVERSITY HIGH SCHOOL FOR GIRLS, Sponsoring Research Teacher: Ruth Fried
***Project Title: Rheological and Toxicological Properties of the Extracellular Polymeric Material (EPM) Produced by Rhizobium Tropici ATCC 49672***

**Sandoval, Hailey**, MEDH-409, Medicine and Health Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Long-Term Consequences of Growth Hormone Therapy and the Likelihood of Developing Germ Cell Tumors and Arthritis***

**Sasson, Rommy**, BCHM-312, Biochemistry category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Development of a Short Peptide to Prevent Non-Thrombogenic Clot Formation on Hydrophobic Surfaces***

**Schein, Hillel**, CELL-467, Cellular and Molecular Biology category, 12 grade,
YESHIVA UNIVERSITY HIGH SCHOOL FOR GIRLS, Sponsoring Research Teacher: Ruth Fried
***Project Title: Evaluating the Effect of Increased Resorcinol Diphenyl Phosphate (RDP) Concentrations in Clay on the Neurogenic Differentiation of Human Dental Pulp Stem Cells (hDPSCs)***

**Schwartz, Zoe**, PLNT-085, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Concentrations of Earl Grey Tea on the Growth of Daikon radish (Raphanus sativus)***

**Shafique, Shahrin**, PLNT-058, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Aloe vera on the Water Retention of Soil of Ocimum basilicum***

**Shah, Rajne**, ENGN-008, Engineering category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: The 6th Sense***

**Shaham, Roni**, BESP-264, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: #HermanWho? Using Linguistic Analysis To Empirically Measure the Fifth Filter of the Propaganda Model in 2022***

**Shan, Annie**, BESP-484, Behavioral Social Sciences- Psychology/Sociology category, 9 grade,
BASIS INDEPENDENT BROOKLYN, Sponsoring Research Teacher: Matthew Goldman
***Project Title: Functional Decline as a Major Outcome of Geriatric Depression and Predictor of Its Trajectories: Longitudinal Evidence from the Health and Retirement Study (HRS)***

**Sharafa, Shefa**, MEDH-031, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: COVID-19 PPE on Acne Vulgaris and Atopic Dermatitis***

**Shek, Ethan**, BESP-027, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effects of Different Learning Conditions on Students' Performance During Reading Comprehension Tests***

**Shi, Johnny**, ENGN-326, Engineering category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Viability of Aluminum Amide Deep Eutectic Electrolytes in Batteries***

**Shoshin, Daniel**, ENGN-339, Engineering category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: A Study of Complex Mirror Symmetry in RLC Circuits***

**Sivakumar, Vigneshwari**, MRCO-061, Microbiology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Different Combinations of Orange and Lemon Essential Oil on Serratia marcescens***

**Sklyar, Aleena**, BESN-017, Behavioral Social Sciences - Neuroscience category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Impact of Social Isolation on Microglia***

**Sloane, Lucia**, EAEV-414, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: The Effects of Calcium Hydroxide and Potassium Hydroxide on the Degradation of PFAS***

**Soltau, Nikhil**, BCHM-367, Biochemistry category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Flicker On, Flicker Off: Investigations into the Luminescent Detection of Heavy Metal Ions in Plant Life***

**Spaet, Annika**, EAEV-319, Earth and Environmental Sciences category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin

***Project Title: Water Retention of Small-Scale Green Roofs with Edible Vegetation***

**Spina, Stefan**, PHYS-477, Physics and Space category, 12 grade,
ARCHBISHOP MOLLOY HIGH SCHOOL, Sponsoring Research Teacher: Mary Mallia
***Project Title: Is the Increasing Detection of Gravitational Waves a Result of Technological Improvements or Natural Causes?***

**Stanescu, Cristina**, MEDH-362, Medicine and Health Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: James LaRocca
***Project Title: Assessing if Certain Orthodontic Indexes are Risk Factors to Obstructive Sleep Apnea***

**Stanley, Zoe**, CELL-199, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Tracy LaGrassa
***Project Title: Elucidating Ionizing-Radiation Activated Apoptosis: A Genetic Screen to Define the Cytoplasmic Caspase-2 Activation Platform***

**Stasiewicz, Ewa**, BESP-461, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: Effects of Perceived Video Emotion on Typing Efficiency***

**Stefanakis, Johanna**, MRCO-220, Microbiology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Beyond a Scientific Method: A Novel Methodology to Create New Means of Fighting Antibiotic Resistance***

**Stewart, Tessa**, MRCO-110, Microbiology category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Modeling the Infant Microbiota: Influence of Baby Formulas on Bacterial Growth and Absorbance***

**Strickman, Orli**, BESP-266, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Women in the Workforce: How Parental Leave Affects Maternal Mental Health***

**Sullivan, Rebecca**, CELL-467, Cellular and Molecular Biology category, 12 grade,
YESHIVA UNIVERSITY HIGH SCHOOL FOR GIRLS, Sponsoring Research Teacher: Ruth Fried
***Project Title: Evaluating the Effect of Increased Resorcinol Diphenyl Phosphate (RDP) Concentrations in Clay on the Neurogenic Differentiation of Human Dental Pulp Stem Cells (hDPSCs)***

**Sumaita, Tasnim**, CELL-398, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Impact of UV-exposure and Polycomb activity on H3K36me2 expression in EpSCs***

**Sumona, Tanzina**, BESP-116, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Ellen Schweitzer
***Project Title: Pandemic Effects on High Schoolers' Social and Academic Experiences: Evidence from the Adolescent Behavior and Experience Survey***

**Sun, Selina**, MRCO-061, Microbiology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Different Combinations of Orange and Lemon Essential Oil on Serratia marcescens***

**Super, Devon**, SORO-246, Software  Robotics category, 11 grade,
PACKER COLLEGIATE INSTITUTE, Sponsoring Research Teacher: Erin Schmitz
***Project Title: A pipeline to deploy monocular depth estimation on autonomous drones***

**Suri, Suraiya**, BCHM-291, Biochemistry category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Rational Design of Small Molecules to Inhibit the Reston Ebola Virus: Identification of Cryptic Pockets within a Protein***

**Tabassum, Adiba**, BESP-169, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Internet Addiction and its Effects on Adolescents in the United States***

**Tang, Angel**, MEDH-399, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Characterization of FSH in Down Syndrome Mouse Model Ts65Dn***

**Taylor, Elijah**, ANIM-173, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Kale Powder on Silkworms Silk Quality and Yield***

**Thanikachalam, Santhosh**, ANIM-147, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Specialized diet on Polystyrene consumption in Galleria Mellonella***

**Thompson, Kayla**, PLNT-099, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Calcium Silicate on solanum tuberosum (potato) in Drought Stress***

**Tiger, Sabrina**, EAEV-233, Earth and Environmental Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: A Panel Threshold Regression: The Effect of Urbanization, Industrialization, and Population Aging on Carbon Emissions in 132 Countries***

**Toque, Ariadne Grace**, MEDH-194, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Khaled Mahmoud
***Project Title: The Effect of polg-1 Gene SNPs on Human Female Infertility***

**Tran, Mingtam**, ANIM-043, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen

***Project Title: The Effect of Fish Oil on Planaria Memory, Learning, and Regenerative Abilities on Navigation through a Maze***

**Tse, Chloe**, MEDH-042, Medicine and Health Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effect of Blue Light Blocking Lenses on Digital Eye Strain***

**Tsoi, Ka Tak**, ANIM-437, Animal Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Emily Schmidt
***Project Title: The Effect of Facial Morphology on Cat and Dog Perception of the Rotating Snakes Illusion***

**Uceda, Helena**, BESP-303, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: LATINOS AS CREATORS AND CONSUMERS: THE EFFECTS OF SOCIAL MEDIA ON PERCEPTION AND COMMUNICATION***

**Ullah, Akram**, CELL-481, Cellular and Molecular Biology category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Exosomes  the Early Detection of Gynecologic Cancers***

**Usvyat, Gabrielle**, MEDH-254, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Max Chomet
***Project Title: Characteristics of Epithelial Cells in Pancreatic Ductal Adenocarcinoma***

**Vaithilingam, Archana**, ANIM-040, Animal Sciences category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Does the number of monk parakeets in a group effect the frequencies of different calls?***

**Vasilescu, Margaux**, CELL-415, Cellular and Molecular Biology category, 11 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Making Sense of Missense: Machine Learning Training On a Model for Missense Variants Data Anomalies***

**Vasilescu, Nicholas**, PHYS-103, Physics and Space category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Stephanie Doire
***Project Title: Deep Learning to Find Anomalies in Large Astrophysics Data Such As Star Candidates That Could Be SETI Or Other Anomalies, Such As Unusually Large and/or Double Exoplanents***

**Wade, Arthur**, EAEV-434, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: Effects of Aluminum on Northeastern Freshwater Habitats***

**Waitz, Elias**, EAEV-434, Earth and Environmental Sciences category, 10 grade,
EDWARD R MURROW HIGH SCHOOL, Sponsoring Research Teacher: Howie Wong
***Project Title: Effects of Aluminum on Northeastern Freshwater Habitats***

**Wang, Yuxuan**, BESP-406, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
COLUMBIA GRAMMAR PREPARATORY SCHOOL, Sponsoring Research Teacher: Ilya Yashin
***Project Title: Loneliness and Well-being in Mid and Late Adolescents: The Role of Resilience, Hope, and Wisdom as Protective Factors***

**Weinberg, Ethan**, BESP-249, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joshua Fialkow
***Project Title: Redrawing the Lines: Simulating Gerrymandering's Adverse Impacts On Competitiveness, Representation, and Other Political Factors***

**Widjaja, Jocelyn**, MEDH-399, Medicine and Health Sciences category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Characterization of FSH in Down Syndrome Mouse Model Ts65Dn***

**Wieland, Amelia**, BESN-462, Behavioral Social Sciences - Neuroscience category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Lrrk2-G2019S mutations impact on corticostriatal signaling***

**Wijoyo, Arnold**, BCHM-153, Biochemistry category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Ferulic Acid enhancing topical antioxidants preventing free radical damage oxidative stress on phycocyanin.***

**Wilson, Emani**, MEDH-185, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Elese Lau
***Project Title: The exploration of classification between action and rest tremors***

**Wolfson, Alana**, ANIM-142, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Nanoemulgel Clove oil Anesthesia on Earthworm Physiology and Behaviorology***

**Wong, Nicolas**, CELL-405, Cellular and Molecular Biology category, 12 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Alyssa Shearer
***Project Title: A Nutritional Approach For The Treatment Of Alzheimer's Disease: EPA and Vitamin B12 as Separate and Combined Treatments For Alzheimer's-induced Cytotoxicity***

**Wu, Angel**, BESP-028, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effect of Background Sounds on Food Choice***

**Wu, Jamie**, ANIM-147, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effects of Specialized diet on Polystyrene consumption in Galleria Mellonella***

**Wu, Katelin**, CELL-315, Cellular and Molecular Biology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner

***Project Title: Optimizing a Cerebral Organoid Model of HIV-1 Pathogenesis in the Central Nervous System***

**Wu, Katlyn**, PLNT-058, Plant Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effects of Aloe vera on the Water Retention of Soil of Ocimum basilicum***

**Wu, Nora**, BESP-059, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation Between Caffeine Intake on a High School Student's Algebra 1 Test Score***

**Xie, Frank**, MEDH-211, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Joann Gensert
***Project Title: Overview of bike concussions during the Covid-19 Epidemic***

**Xie, Jiahui**, PHYS-427, Physics and Space category, 11 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Stephanie Doire
***Project Title: Searching For Fast Radio Bursts in Radio Ranges of 10-88 mHz***

**Xing, Zheng**, PHYS-195, Physics and Space category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Linear localization of non-Hermitian with Partially Integrated PT-symmetry Electronics***

**Xu, Aaron**, BESP-028, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Stacy Goldstein
***Project Title: The Effect of Background Sounds on Food Choice***

**Xu, Owen**, EAEV-145, Earth and Environmental Sciences category, 11 grade,
FOREST HILLS HIGH SCHOOL, Sponsoring Research Teacher: Matthew Woo
***Project Title: Using Phytoplankton to Reduce CO2 Concentration in Designated Oceanic and Atmospheric Locations***

**Xu, Priscilla**, BESP-357, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Richard Lee
***Project Title: Researching Meditation: An Analysis of Participant Retention***

**Xylas, Arietta**, EAEV-250, Earth and Environmental Sciences category, 12 grade,
TOWNSEND HARRIS HIGH SCHOOL, Sponsoring Research Teacher: Katherine Cooper
***Project Title: The Effect of State Marine Reserves on Kelp Coverage in the Northern and North-Central California Coastal Ecosystems***

**Yang, Isabel**, PLNT-047, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Ghost Shrimp (Palaemonetes paludosus) Aquaponics on the Cultivation of Watercress (Nasturtium officinale)***

**Yang, Jeffrey**, BESN-466, Behavioral Social Sciences - Neuroscience category, 10 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: The impact of COVID on the teenage brain and a novel screening tool for assessing brain health***

**Yang, Jeffrey**, MEDH-271, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Erin O'Leary
***Project Title: USING LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY TO DETERMINE ASSOCIATION BETWEEN PANCREATIC CANCER RISK AND PER- AND POLYFLUOROALKYL SUBSTANCES***

**Yang, Paddy**, ENGN-104, Engineering category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Stephanie Doire
***Project Title: Efficiency Comparison of Hybrid and Conventional Vertical Axis Wind Turbines (VAWT)***

**Yang, Yewon**, BESN-400, Behavioral  Social Sciences - Neuroscience category, 12 grade,
HIGH SCHOOL FOR MATH SCIENCE AND ENGINEERING AT CCNY, Sponsoring Research Teacher: Hossein Aleyasin
***Project Title: Projection patterns of the ventral hippocampus***

**Ye, Bryant**, PLNT-092, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Green, Oolong, and Black Tea Bags vs. Rockwool on the Growth of Cucumis sativus (Corinto cucumers)***

**Ye, Susan**, BESP-261, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: How are Men Impacted by Sexual Assault? An Examination into the Relationship Between Sexual Misconduct with Men and Subsequent PTSD Symptoms***

**Yeh, Anna**, BESP-294, Behavioral  Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Marisa Wagner
***Project Title: The Effect of Internet Access on Suicide Rates of Adolescents***

**Yeung, Crystal**, CELL-314, Cellular and Molecular Biology category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Measuring the decrease in myelin in the brain after a traumatic brain injury***

**Yilmaz, Alara**, EAEV-464, Earth and Environmental Sciences category, 11 grade,
HORACE MANN UPPER SCHOOL, Sponsoring Research Teacher: Stephanie Feigin
***Project Title: Investigating the Metallic Fabric Electrodes of Water Electrolysis for Corrosion Reduction and Hydrogen Generation Enhancement***

**Yu, Erica**, EAEV-300, Earth and Environmental Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: The Effect of Drought on Grassland Bird Species in an Urban Reclaimed Landfill***

**Yu, Grady**, SORO-330, Software  Robotics category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: An Evaluation Mechanism For Crowdsourcing Storefront Accessibility Data***

**Yu, Leheng**, BESP-027, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: The Effects of Different Learning Conditions on Students' Performance During Reading Comprehension Tests***

**Yue, Fiona**, BESP-229, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Prevalence of eating disorders among sexual and gender minority teens***

**Yukhanov, Ariana**, ANIM-062, Animal Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Rhodiola rosea on Vanessa cardui Growth and Development when Administered at Various Life Stages***

**Yung, Isabelle**, PLNT-047, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Ghost Shrimp (Palaemonetes paludosus) Aquaponics on the Cultivation of Watercress (Nasturtium officinale)***

**Zaba, Alex**, BESP-183, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: Does reading books affect a person's IQ?***

**Zagoria, Grace**, BESP-234, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: "Four Effects on the Strength of the American Response to Russian Aggression in Ukraine."***

**Zaman, Mahdher**, BESP-242, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: The Effect of Connectedness Factors on Vaccine Hesitancy***

**Zaslow, Mia**, MEDH-262, Medicine and Health Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: Ethnic Demographics and Tendency to Share Genetic Test Results in Families: A Correlation Study***

**Zeng, Xiaohui**, BESP-182, Behavioral Social Sciences- Psychology/Sociology category, 11 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: Do academic games have the same negative effects as non-academic video games?***

**Zhang, Hilary**, BESP-065, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Correlation of Students' Chopstick Grips with Their Pencil Grips and MBTI Personality Types***

**Zhao, Amy**, BESP-133, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano

***Project Title: Ukrainian Refugee Education***

**Zhao, Sean**, BESP-299, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Perceptions of Real and Plant-Based Meat***

**Zheng, Christine**, ENGN-360, Engineering category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Building a device that measures indoor air quality.***

**Zheng, Edna**, ENGN-285, Engineering category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: An ANN-based method to optimize the parameters and dramatically reduce diagnostic errors from cutting-edge MRI-based experimental medical diagnosis techniques for the brain***

**Zheng, Eileen**, EAEV-107, Earth and Environmental Sciences category, 12 grade,
BROOKLYN TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: Michael Estrella
***Project Title: Performing Barcoding and Soil Analyses to Investigate Ecosystem Resiliency in Different Flood Zones of Brooklyn, NY***

**Zheng, Joyce**, ANIM-064, Animal Sciences category, 10 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Lingyan Wang
***Project Title: The Effect of Barley Grass on Malnourished Silkworm's Productivity***

**Zheng, Winni**, PLNT-020, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Kelp Extract on Growth and Development of Phaseolus vulgaris***

**Zhong, Andy**, CELL-080, Cellular and Molecular Biology category, 12 grade,
STUYVESANT HIGH SCHOOL, Sponsoring Research Teacher: Jason Econome
***Project Title: Predictive Epitope Mapping of DNASE1L3 Reveals Sites of Autoantibody Binding***

**Zhong, Mingfeng**, BESP-015, Behavioral Social Sciences- Psychology/Sociology category, 12 grade,
MIDWOOD HIGH SCHOOL, Sponsoring Research Teacher: Glenn Elert
***Project Title: Fiction vs. Nonfiction: Motivating Pro-Environmental Behavior***

**Zhou, Emily**, MEDH-439, Medicine and Health Sciences category, 12 grade,
Saint Francis Preparatory School, Sponsoring Research Teacher: Casey Clark
***Project Title: Analyzing the nutritional composition of public and private lunch menus in four different countries***

**Zhou, Ivy**, PLNT-030, Plant Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Different Concentrations of Phosphatic Clay on Inhibiting the Growth of Harmful Algae in a Hydroponic System***

**Zhou, Nicole**, MEDH-241, Medicine and Health Sciences category, 12 grade,

BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Scott Savaiano
***Project Title: An Analysis of the Barriers that Impact Asian American Elderly Immigrant Access to Mental Health Services with an Emphasis on Languages Offered at Mental Hospitals***

**Zhou, Vicki**, BESP-166, Behavioral Social Sciences- Psychology/Sociology category, 10 grade,
QUEENS METROPOLITAN HIGH SCHOOL, Sponsoring Research Teacher: Soonyoung Kwon
***Project Title: How does participation in sports impact students' grades?***

**Zhu, Enyu**, MEDH-342, Medicine and Health Sciences category, 11 grade,
STATEN ISLAND TECHNICAL HIGH SCHOOL, Sponsoring Research Teacher: JOHN DAVIS
***Project Title: Analyzing Dermatology Workforce Trends and Melanoma Mortality***

**Zhu, Yunqing Alison**, ANIM-051, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Noise Pollution on Lumbricidae Behavior***

**Zinczuk, Victoria**, PLNT-099, Plant Sciences category, 11 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Calcium Silicate on solanum tuberosum (potato) in Drought Stress***

**Zou, Vivian**, EAEV-181, Earth and Environmental Sciences category, 12 grade,
BRONX HIGH SCHOOL OF SCIENCE, Sponsoring Research Teacher: Vladimir Shapovalov
***Project Title: Analyzing Effects of Data Fluctuation on Models of Groundwater Level Using Time Series Modeling on PASTAS***

**Zuniga, Michelle**, ANIM-051, Animal Sciences category, 12 grade,
FRANCIS LEWIS HIGH SCHOOL, Sponsoring Research Teacher: Jessica Cohen
***Project Title: The Effect of Noise Pollution on Lumbricidae Behavior***