



### Behavioral/Social Science

#### 1ST

Jessica Valerie Solomon (Paul D Schreiber High School), Evie Loewy (Paul D Schreiber High School)

Paul D Schreiber High School

*What Drives Student AI Use? The Effects of Personality Traits, Grade Level, and English Language Proficiency on Academic Artificial Intelligence Use*

#### 2ND

Kate Alexandra Spieler (North Shore High School)

North Shore High School

*Gut-Brain Connections in Autism: Examining Cross Group Variations in Mental Health and Socioeconomic Status*

#### 2ND

Joia Zahner (Paul D Schreiber High School), Vivienne Gilliar-Smith (Paul D Schreiber High School)

Paul D Schreiber High School

*The Short Term Effects of the New York State Phone Ban on Students' Perceived Satisfaction and Bullying in Schools*

#### 3RD

Tiffany Y Zhou (Herricks High School)

Herricks High School

*Bot Spotting: Identifying Cognitive Predictors of Accuracy in Distinguishing ChatGPT-Generated Faces*

#### 3RD

Erik Cunha Ravn (Chaminade High School)

Chaminade High School

*Donor Commitment Signaling as an Electoral Predictor Compared to Traditional Polling Under Public Financing Policies*

### 3RD

Rose Layla Lifland (Paul D Schreiber High School)

Paul D Schreiber High School

*The New York State "Bell-To-Bell" Ban on Personal Internet Enabled Electronic Devices and Its Impact on Student Perception of Academic Performance and Socialization*

### H.M

Adishree Das (Herricks High School)

Herricks High School

*The Impact of Word Valence, Arousal, and Mood Disorders on Memory Recall and Intrusion*

### H.M

Jivika Mandar Raut (Jericho High School)

Jericho High School

*Effects of Optogenetic Stimulation of the BLA-DMS Pathway on Grooming in Mice*

### H.M

Ella Claire Graziani (Roslyn High School), Zara Cooper (Roslyn High School)

Roslyn High School

*Fair or Flawed? Uncovering Hidden Biases Embedded in AI Grading*

### H.M

Joanna Huang (Roslyn High School), Anannya Anand (Roslyn High School)

Roslyn High School

*AI as a Research Participant – Can AI Supplement Human Data?*

## Cellular and Molecular Biology

### 1ST

Regina Yejin Choi (Herricks High School)

Herricks High School

*Investigating the Effects of Ret Deficiency on Gene Expression and Cellular Phenotypes in Non-Enteric*

*Nervous System Tissues in Hirschsprung Disease*

**2ND**

Samuel Kim (Commack High School)

Commack High School

*Evaluating the Effect of Rottlerin on Muscle-Specific Dystrophin Knockdown in Drosophila melanogaster*

**2ND**

Armaan Singh Dewal (Jericho High School)

Jericho High School

*Mdivi-1 Modulation of Mitochondrial Respiratory Complex Integrity in a Fuchs Endothelial Corneal Dystrophy Model*

**3RD**

Rehan Malhi (Herricks High School)

Herricks High School

*Manganese Exposure During Early Differentiation Alters Adipocyte Maturation and Metabolic Identity.*

**3RD**

Isabella Rosa Mueller (Herricks High School)

Herricks High School

*Engineering ecDNA-Mediated MYC Amplifications in Colorectal Cancer Cells by Combining CRISPR-Cas9 Technology and Cre-loxP Systems*

**H.M**

Ronan Michael Higgins (Walter G. O'Connell Copiague High School)

Walter G. O'Connell Copiague High School

*The Antimicrobial Effects of Syzygium aromaticum Essential Oil as a Preservative Agent in Starch-Based Bioplastic Packaging for Fresh Sus domesticus Sausage Meat*

**H.M**

Austin Qu (Herricks High School)

Herricks High School

*Investigating the Nutrient Production Capacity of Mucin-Associated Gut Bacteria Using Genomic Analysis*

**H.M**

Sohan Shah (Syosset High School)

Syosset High School

*Effect of Sulforaphane and Deferoxamine on Alveolar Bleeding and Macrophage Markers in a Glycerol-Induced Premature Rabbit Model of Intraventricular Hemorrhage*

## **Chemistry**

**1ST**

Liam Patrick Connolly (Manhasset High School), Lucus Pai (Manhasset High School)

Manhasset High School

*Novel L-Carnitine-Tuned Fe (II) Phenyl Oxazoline Chitosan-Supported nZVI Composite for Enhanced Visible-Light Photocatalytic Degradation of Organic Pollutants*

**2ND**

Emma Wang (Manhasset High School), Yihan (Anna) Wang (Manhasset High School)

Manhasset High School

*Employment of Microalgal Biofilms in Investigating the Application of Carrot, Raspberry, and Rosehip Seed Oils in Topical Photoprotective Agents as a Method Towards Sustainable Prevention of UV-B Radiation Derived Skin Cancers*

## **Engineering and Physical Science**

**1ST**

Naya Gilja Shah (Manhasset High School), Katelynn Cai (Manhasset High School)

Manhasset High School

*Building a Low-Cost, Paper-Based Sensor for On-Site Detection of Microplastics via Molecular Imprinting and Fluorescent Dye Response using the Natural Biopolymer Cellulose*

**2ND**

Sara Suba Shikder (North Shore High School)

North Shore High School

*Construction of a GHz-modulated injection-locked laser*

**3RD**

Aidan Kai Lee (Friends Academy)

Friends Academy

*Early Failure Prediction in Hydraulic Systems Using Machine Learning Long-Short Term Memory Networks and Multisensor Time-Series Data*

**3RD**

Jack Thomas Laurinavicius (St Anthony's High School)

St Anthony's High School

*Observing the Electrical Behavior of a YBCO Superconductor Above and Below its Electrical Capacity*

**H.M**

Jolyna Weng (Jericho High School)

Jericho High School

*Optimization of PAA, CS, and Gel Concentrations for Hydrogel Synthesis*

**H.M**

Sara Yu (Jericho High School)

Jericho High School

*Assessing Spatial Fidelity Using Fuzzy Ripple Free Functional MRI: An Analysis of Cortical Layers.*

## **Environmental Science**

**1ST**

Nicolas Spencer Keyoung (Manhasset High School)

Manhasset High School

*Solar-Activated TiO<sub>2</sub>-Biochar Smart Filter for Predictive Water Filtration*

**2ND**

Emma Jiayun Yan (Plainview-Old Bethpage JFK High School), Sanjana Kunam (Plainview-Old Bethpage

JFK High School), Manjot Kaur Tamber (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

*Alkaline Pretreatment and Enzyme Synergy for Effects on Surface Erosion and Tensile Strength Reduction in PLA Filaments*

**2ND**

Isabella Elyse Conzo (St Anthony's High School)

St Anthony's High School

*The Digestion of Microplastics in G. sigillatus (banded cricket)*

**3RD**

Charles Qin (Syosset High School)

Syosset High School

*Enhancing Enzyme Reusability: Immobilization of Lipase for PLA Degradation Using Calcium Alginate and Biochar*

**3RD**

Celia Jaye Platt (Paul D Schreiber High School)

Paul D Schreiber High School

*The Effect of Changing Sea Depths and Fault Slip on Tsunami Velocity, Strength, and Future Predictability*

**H.M**

Belén Maria Vázquez (Manhasset High School), Krisha Henna Wadhwa (Manhasset High School)

Manhasset High School

*Investigating the Potential of Algae-Derived Hydrogen from Microplastic-induced Oxidative Stress Combated by Antioxidants for PEM Fuel Cells*

**H.M**

Olivia Hang (Friends Academy), Christina Yin (Friends Academy), Jaya Gambhir (Friends Academy)

Friends Academy

*Determining Quantities of Microplastics in 25 Home Tap Water Samples Throughout Long Island and New York City and Testing a Novel Solution*

## H.M

Aashrita Koyi (Jericho High School)

Jericho High School

*Investigating Earth Orientation Parameters as Predictors of Global Temperature Anomalies*

## Mathematics and Computer Sciences

### 1ST

Cameron Blake Alevy (Paul D Schreiber High School)

Paul D Schreiber High School

*Computational Identification of Novel Regulators of Klotho, SIRT1, and Nrf2 Using Graph Neural Networks*

### 2ND

Matthew Calle (East Hampton High School)

East Hampton High School

*Multi-layer Perceptron and Graph Neural Networks for the accurate prediction of Molecular Properties*

### 3RD

Juan Felipe Torres (East Hampton High School)

East Hampton High School

*Effects of multi-Acousto-Optic Deflectors (AOD) on Circuit's Compilation Runtime and Fidelity in Neutral Atom Quantum Circuits that use the Zoned Quantum Architecture Compiler (ZAC).*

## H.M

Jonah Rolnick (Lynbrook Senior High School)

Lynbrook Senior High School

*Development of an Electromyography Tracked Virtual Reality Glove with Electric Muscle Stimulation Haptics*

## H.M

Michael Zvi Bank (The Wheatley School)

The Wheatley School

*The Investor Emotional Volatility Index (IEVI)*

## Medicine and Health Services

### 1ST

Aanya Gupta (Jericho High School)

Jericho High School

*The Effect of Erlotinib on TRPV3 Skin Ion Channels as an Inhibitor in Olmsted Syndrome.*

### 2ND

Baran Kamil Eriskin (Commack High School)

Commack High School

*The Effect of Alpha Lipoic Acid in Drosophila Melanogaster With Dilated Cardiomyopathy: A Focus on Reducing Oxidative Stress in Myocardial Cells*

### 2ND

Joshua Lin (Manhasset High School), Daniel Shen (Manhasset High School)

Manhasset High School

*Exploring the efficacy of short chain fatty acids on reducing cancer biomarkers in gut immune crosstalk-related oncogenesis in a C. elegans model*

### 2ND

Jonah Sethna (Manhasset High School), Arjun Wanchoo (Manhasset High School)

Manhasset High School

*Development of a Waste-Based Quercetin&dash;D-Limonene Hydrogel for Anti-Biofilm Wound Treatment.*

### 3RD

Sarah Khan (Friends Academy)

Friends Academy

*Comparison of Fascicular Network Topology in Paired Human Cervical and Thoracic Vagus Nerves via Morphometric Micro-CT Analysis*

### 3RD

Brianna Tam (Herricks High School)

Herricks High School

*Investigating the Changes in Water Compartmentalization in Epilepsy Associated With Inflammation Using NODDI and SANDI Diffusion Models*

### 3RD

Vanessa Theodos (Roslyn High School), Patrick Hermosura (Roslyn High School)

Roslyn High School

*Using ResNet-18 to Detect the Three Major Blood Cancers: Leukemia, Lymphoma, and Myeloma*

### 3RD

Grace Li (Jericho High School)

Jericho High School

*Comparative Antibiofilm Activity of Manogepix and Micafungin Against Clinically Relevant Candida Species*

### H.M

Elivia Choong Yi Choong (Manhasset High School), Talie Lin (Manhasset High School)

Manhasset High School

*Ecotoxicological effects of polyethylene microplastics on the growth, regeneration, and behavior of Dugesia tigrina*

### H.M

Prisha Chadha (Commack High School)

Commack High School

*Identifying a Correlation of Non-Coding MicroRna Gene Expression Between Oral Cavity Squamous Cell Carcinoma and Colorectal Cancer*

### H.M

Terrence Wang (The Stony Brook School)

The Stony Brook School

*A Brain-Computer Interface Soft Exoskeleton for Gamified and Adaptive Upper-Limb Post-Stroke Rehabilitation*

**H.M**

Kayla Margaret Straker (Seaford High School)

Seaford High School

*The Effect of Eugenol on the Short-and-Long Term Memory of Planaria (Dugesia dorotocephala)*

## **Plant Sciences**

**1ST**

Bentley Lam (Manhasset High School)

Manhasset High School

*Optimizing Hydrogels as Amendments and for the Control of Invasive Ant Species*

**2ND**

Alessa Picco (East Hampton High School)

East Hampton High School

*Conditions that affect the Properties of Nanoparticles*

**3RD**

Rosina Marie Wickham (Walter G. O'Connell Copiague High School)

Walter G. O'Connell Copiague High School

*The Effect of Microplastics on the Photosynthetic Properties of Medicago sativa via Aquatic Exposure at Various Time Increments During Growth*

**H.M**

Asher Jacob Abir (Lynbrook Senior High School)

Lynbrook Senior High School

*The Effects of Rhizobium Inoculation and Red Worm Activity on Vigna Radiata Growth in Lunar Regolith Simulant*