



Bethpage High School

1ST

Maya Lillian Maciel-Seidman (Bethpage High School), Ruchitha Channapatna (Bethpage High School),
Suchitha Channapatna (Bethpage High School)

Earth & Environmental AND Environmental Engineering

Soil Moisture Sensing Robot: A Novel Agricultural Device

2ND

Theresa Thulasidas (Bethpage High School), Ava Elizabeth Zingone (Bethpage High School)

Engineering Mechanics

Dye Sensitized v.s. Monocrystalline: Most Cost Efficient Method for Energy Production

Central Islip Senior High School

H.M

Oscar A Murga (Central Islip Senior High School), Leslie Clarice Mejia (Central Islip Senior High
School)

Plant Sciences

The Effects of Rhizobacteria on Hydroponically Grown Arugula

Commack High School

3RD

Ethan Jacob Sontarp (Commack High School)

Earth & Environmental AND Environmental Engineering

*Modeling Uranium Uptake in Fossilized Teeth and Bones: Insight into Potential for Long-Term Uranium
Waste Storage in Phosphates*

H.M

Michael Chacon (Commack High School), Defne Aktuna (Commack High School)

Animal Sciences

Aversive Conditioning and Scent Discrimination in the Green Crab (Carcinus maenas)

Connetquot High School

1ST

Melissa S Oz (Connetquot High School), Biprosad Das (Connetquot High School), Anna Elizabeth Suske (Eastport South Manor Junior-Senior High School)

Biochemistry

Utilizing Protein Crystallography and X-Ray Diffraction to Determine the Structure of TrmD (Co-Crystallized with SAH) From Mycobacterium abscessus and Discover Possible Inhibitors via AutoDock VINA

3RD

Atif Khan (Connetquot High School)

Engineering Mechanics

Using Polarized Light to Create a Cost-Effective Landmine Detector for Use in War-Torn Countries

East Meadow High School

H.M

Alyssa Fong (East Meadow High School)

Computational Biology and Bioinformatics

Analysis of APOBEC3 Hotspots in the Domains of Select Human Herpesvirus Immediate Early Proteins

Eastport South Manor Junior-Senior High School

3RD

Damien Doran Edele (Eastport South Manor Junior-Senior High School), Christopher Matthew Jannotta (Eastport South Manor Junior-Senior High School), Danielle Levanti (Northport High School)

Cellular and Molecular Biology

The Complete Structural Refinement and Analysis of the Protein Anaplasma phagocytophilum tRNA (guanine-N1)-methyltransferase

Elmont Memorial

2ND

Marvia Jozie Pressoir (Elmont Memorial)

Microbiology

The Individual and Synergistic Effect of Combined Heavy Metal Exposure On Dopaminergic Neurodegeneration and Associated Behaviors in C. elegans as a Model for Parkinson's Disease

H.M

Maxline Delorme (Elmont Memorial)

Cellular and Molecular Biology

Expression of Insulin Growth Factor 2 mRNA Binding Protein on the Regulation of Fidgetin Like 2

H.M

Christopher Edward Alexander (Elmont Memorial)

Microbiology

Characterizing the Oncolytic Properties of the Avian Paramyxovirus Serotype 4 (APMV-4) in Comparison to Newcastle Disease Virus (NDV): Developing Oncolytic Therapies Based on Viral Cell Death

Elwood - John H. Glenn

1ST

Rithika Narayan (Elwood - John H. Glenn)

Earth & Environmental AND Environmental Engineering

Coral Grief: Machine Learning on Crowd-sourced Data to Highlight an Ecological Crisis

Garden City High School

1ST

Ian Carlson Bailey (Garden City High School)

Engineering Mechanics

CAD Modeling, Simulation, and Prototyping of a Wave Energy Generation System for USVs

2ND

Farah Kabir (Garden City High School)

Translational Medical Science

Integrated Expression Profiles of MiRNAs and GLUT1 in Murine Blood-Brain Barrier under Hyperglycemic Conditions

2ND

James Zheng (Garden City High School)

Behavioral and Social Sciences

*Microbiome Composition and Environmental pH Modulate the Behavioral Effects of SSRIs in Larval Zebrafish (*Danio rerio*)*

George W. Hewlett High School

3RD

Jude Kristoffer Ramos Tomas (George W. Hewlett High School), Kelvin Reid Cheng (George W. Hewlett High School)

Plant Sciences

*Regulation of a Temperature-Induced Lipocalin (TIL) by Cold Stress and Epibrassinolide in the Gametophytes of *Ceratopteris richardii**

H.M

Alex Tang (George W. Hewlett High School)

Engineering Mechanics

Validation of High-Order Theories for Sandwich Beam Behavior Using Direct Image Correlation (DIC) Techniques

H.M

Blake Charles Lippman (George W. Hewlett High School), Tyler Bissoondial (John F. Kennedy High School)

Earth & Environmental AND Environmental Engineering

*Investigating the Use of *Ceratopteris richardii* as a Model Plant for the Phytoremediation of Cadmium*

Great Neck North High School

3RD

Danielle Lauren Gruber (Great Neck North High School)

Computational Biology and Bioinformatics

A Game-Theoretic Model of Task-Positive Networks

H.M

Madeline Yang (Great Neck North High School)

Behavioral and Social Sciences

Hyperscanning via fNIRS Reveals Eye Contact Engages Specific Neural Responses Within and Across Brains

H.M

Michelle Zeng (Great Neck North High School)

Chemistry

Addition of Cost Effective Common Materials for a More Accessible Method of Solar Distillation

H.M

Raymond Lin (Great Neck North High School)

Chemistry

Formation of Bilayer Sustainable Food Packaging Films

Half Hollow Hills East

1ST

Megan Gole (Half Hollow Hills East)

Behavioral and Social Sciences

Analyzing the Foundation of Rhetorical Gender Inequality through Competitive High School Debating During Adolescence and the Connection to the Workplace

1ST

Tong Ye (Half Hollow Hills East)

Chemistry

Investigations into the Significance of Epidermal Fatty Acid Binding Protein (FABP5) in Breast Cancer Survival and Design of Novel FABP5 Inhibitors

3RD

Rachel Sydnie Bocian (Half Hollow Hills East)

Translational Medical Science

A Novel Cationically Enframed High Density Aromatic Peptide, A2, Mitigates Mitochondrial Dysfunction and Promotes Cell Survival Via Reduction of ROS and Maintenance of Mitochondrial Inner Membrane Potential

H.M

Benjamin Levi Goldfried (Half Hollow Hills East)

Cellular and Molecular Biology

Enhanced Cholinergic Interneuron Striatal Density Demonstrated in a SAPAP3 Knockout: An Indirect Quantification of Elevated Acetylcholine Levels in an OCD Mouse Model

Half Hollow Hills West

1ST

Poojan Pandya (Half Hollow Hills West), Leo Takemaru (Ward Melville High School)

Microbiology

CHMP2A and TSG101 Interact with the Novel ESCRT-III Recruiter CCDC11 in HIV-1 Viral Budding

2ND

Yash Gupta (Half Hollow Hills West), Collin Li (William A. Shine Great Neck South High School),
Atreya Rawat (Half Hollow Hills East)

Robotics and Intelligent Machines AND Embed. Sys. AND Sys. Software

A Proposal of Deep-learning-based Magic Mirror Modules to Identify Specific Health Aspects

H.M

Rishitha Kudaravalli (Half Hollow Hills West)

Biochemistry

GFP Tagged Mitochondrial IMG1 and BSCI Proteins Disrupt Normal Huntingtin Inclusion Body Formation in Saccharomyces cerevisiae

Hebrew Academy of the Five Towns and Rockaways

3RD

Jonathan Aaron Lederer (Hebrew Academy of the Five Towns and Rockaways), Abraham Balsam (Rambam Mesivta)

Biochemistry

The Effects of Graphene Oxide and Partially Reduced Graphene Oxide on the Enzymatic Activity of Thrombin

H.M

Katherine (Lulu) Grace Morse (Hebrew Academy of the Five Towns and Rockaways)

Microbiology

Prevention of Shiga-Toxin-Producing E.coli Outbreaks in Flour: The Elimination of E.faecium in Ruminant Probiotics

Herricks High School

H.M

Seunguk John Baek (Herricks High School)

Biomedical and Health Sciences

The Evaluation of the Therapeutic Potential of Orlistat on a Mouse Model of Hereditary Hemorrhagic Telangiectasia (HHT)

Hicksville Senior High School

1ST

Sejal Gupta (Hicksville Senior High School)

Biomedical Engineering

Development of a Machine Learning Algorithm to Predict the Path of Joints for Gait Rehabilitation

Huntington High School

H.M

Diya Kallimar Rai-Gersappe (Huntington High School), Ikshu Pandey (East Meadow High School)

Behavioral and Social Sciences

Development of Novel Cerebral Aneurysm Embolization Method via Injection of Pluronic F-127 Multiblock Copolymer Hydrogel

H.M

Bryce Alexander Vitulli (Huntington High School), Ryan Terence Knowles (Huntington High School)

Chemistry

The Effect of Fruit-Based Super Absorbent Polymers on the Moisture Retention of Topsoil

Jericho High School

1ST

Suchir Misra (Jericho High School)

Computational Biology and Bioinformatics

Abstract Mining to Create Comprehensive Disease-disease Correlation Database

1ST

Davesh Reddy Valagolam (Jericho High School)

Robotics and Intelligent Machines AND Embed. Sys. AND Sys. Software

Monitoring and Diagnosing Pathological Tremors Through Mobile and Neural Network Technology

1ST

Emily Gan (Jericho High School)

Plant Sciences

Insights into Biotic Light Manipulation: Microbial Characterization of Alkaline Model and Environmental Microalgae

1ST

Vyom Shah (Jericho High School)

Cellular and Molecular Biology

Linking Diet and Cancer: Arachidonic Acid Augments Canonical Wnt Signaling to Enhance Stemness

2ND

Catherine Kim (Jericho High School)

Computational Biology and Bioinformatics

Co-administration of Atorvastatin Blocks CYP3A4: Exacerbated Risk of Interstitial Lung Disease

2ND

William Hu (Jericho High School)

Earth & Environmental AND Environmental Engineering

*Modeling Environmental Effects on Gulf of Maine Atlantic Herring (*Clupea harengus*) Using Generalized Additive Models*

2ND

Katherine Zhang (Jericho High School)

Earth & Environmental AND Environmental Engineering

Dialdehyde Cellulose Nanocrystal Hydrogel Synthesis for Antibiotic Remediation

2ND

Riya Patel (Jericho High School)

Chemistry

Next Generation Ultrafiltration for Wastewater Treatment: Characterization and Performance of Fouling-Resistant Polymeric and Lyocell Cellulose Nanofiber Membranes

2ND

Richard Hui Ren (Jericho High School)

Mathematics AND Physics and Astronomy

An S-polarized Scattering Near-field Microscopy Probe Design for Nanoscale Dielectric Anisotropy Analysis

H.M

Alice Zhaoyi Chen (Jericho High School)

Biomedical Engineering

Estimating Rectal Cancer Response to Chemoradiation: Longitudinal MRI-based Radiomics

H.M

Feiyang Dai (Jericho High School)

Behavioral and Social Sciences

Predicting Major Depressive Disorder Treatment Response: Examining Pretreatment Biomarkers GABA and Glx

John F. Kennedy High School

1ST

Katherine June St George (John F. Kennedy High School)

Animal Sciences

*The Ketogenic Diet Ameliorates the Effects of Caffeine in Seizure Susceptible *Drosophila melanogaster**

3RD

Ashley Cammiso (John F. Kennedy High School)

Animal Sciences

The Effect of Cell-Cell Communication on the Polarization of Hair Cells on the Lateral Line of Zebrafish

H.M

Andrew John Brinton (John F. Kennedy High School)

Earth & Environmental AND Environmental Engineering

*Marsh Restoration: Ribbed Mussels (*Geukensia demissa*) as a Revival Mechanism to Rebuild the Coastal Salt Marshes of Long Island, New York*

Kings Park High School

3RD

Celina Ma (Kings Park High School)

Chemistry

*The Synthesis of a Novel Streptogramin A-Benzoxaborole Conjugate and Its Potential as a Bivalent Ribosomal Inhibitor Against *Staphylococcus aureus**

H.M

Rachel Catherine Williams (Kings Park High School)

Engineering Mechanics

The Design and Construction of a Stamping Die to Improve the Accuracy of Bending Orthopedic Implants

H.M

Kayleigh Elizabeth O'Melia (Kings Park High School)

Animal Sciences

Grooming Behavior and Social Hierarchy among Adult Female Trachypithecus phayrei (Phayre's leaf monkey)

Lawrence High School

H.M

Bhawan Kaur Sandhu (Lawrence High School), Christine Kong (Commack High School)

Energy: Sustainable Materials & Design AND Materials Science

A Novel Nafion-free Proton Transport Membrane for the Proton Exchange Membrane Fuel Cell

Lynbrook High School

3RD

Arpie Bakhshian (Lynbrook High School)

Biomedical and Health Sciences

The Development of a CRISPR/Cas9 System with Nanoblades in Order to Study IBD-Related Genes in an in vitro Model

Manhasset High School

1ST

Samantha Chen (Manhasset High School), Emma Wang (Manhasset High School)

Energy: Sustainable Materials & Design AND Materials Science

The Creation and Optimization of a Plant Microbial Fuel Cell for Energy Generation with Brassica rapa

1ST

Ella Rose Wesson (Manhasset High School)

Mathematics AND Physics and Astronomy

Engineering One Layer of a Two-Dimensional Acoustic Band Gap Material and Reconstructing the Sound Pressure Field Using Acoustic Holography

2ND

Sanjna Kedia (Manhasset High School), Emily Ma (Manhasset High School)

Energy: Sustainable Materials & Design AND Materials Science

Remediation of Wastewater Using a Microbial Fuel Cell with Optimized Electricity Generation and an Algae Bioreactor

H.M

Kevin Douglas Gauld (Manhasset High School)

Robotics and Intelligent Machines AND Embed. Sys. AND Sys. Software

Optimizing Classification Efficacy of Image Classifiers Through the Usage of Neural Style Transfer in Image Preprocessing

H.M

Serena Zhao (Manhasset High School)

Earth & Environmental AND Environmental Engineering

Targeting Marine Plastic Pollution with Numerical Data Modeling: Predicting Plastic Transport in Massachusetts Bay Through Flow Map Composition

H.M

Mir Zayid Alam (Manhasset High School), Taylor Geeta Fox (Manhasset High School)

Animal Sciences

*Relating Major Depressive Disorder (MDD) to Circadian Signaling in *Drosophila melanogaster**

North Shore Hebrew Academy High School

2ND

Jeremy Noah Bernstein (North Shore Hebrew Academy High School), Aaron Michael Baruch (North

Shore Hebrew Academy High School), Joseph Abraham Masri (North Shore Hebrew Academy High School)

Biomedical Engineering

Addressing SIDS: Analyzing the Respiratory Rate of Infants Using Image Processing Algorithm

North Shore High School

3RD

Kyra Jamieson McCreery (North Shore High School)

Earth & Environmental AND Environmental Engineering

Associations between the Slowdown in North Atlantic Tropical Cyclone Translation Speed and Intensifying Storm Precipitation

H.M

Angelica Abbondandolo (North Shore High School)

Biomedical and Health Sciences

Elucidating the Role of Tenomodulin on IVD Homeostasis and Biomechanical Function

H.M

Sarah Flynn Moran (North Shore High School)

Microbiology

Antiviral Capabilities of DABCO-hydrocarbon Molecules

Plainedge High School

H.M

Tyler John Ruvolo (Plainedge High School)

Behavioral and Social Sciences

A Regression Based Investigation Into Presidential Public Approval as a Factor of Political and Economic Policy

H.M

Michael Galardi (Plainedge High School)

Mathematics AND Physics and Astronomy

A Regression-Based Analysis of Salary as a Function of Individual Performance in Major League Baseball

Plainview-Old Bethpage JFK High School

2ND

Min Jee Kim (Plainview-Old Bethpage JFK High School)

Biomedical and Health Sciences

Analysis of Pore Formation and Control in Gluconacetobacter Xylinus Through Organic Additives

H.M

Siean Benson (Plainview-Old Bethpage JFK High School)

Computational Biology and Bioinformatics

The Role of Delayed Rectifier Potassium Currents in Human Ventricular Cardiomyocyte Arrhythmogenesis

H.M

Kreena Totala (Plainview-Old Bethpage JFK High School)

Behavioral and Social Sciences

A Novel Predictive Paradigm for Pediatric ADHD Behavior Through Thalamocortical White Matter Analysis

Roslyn High School

3RD

Olivia Felice Viruet Quintero (Roslyn High School)

Behavioral and Social Sciences

The Effect of Accent and Accent Strength on Perceptions of Doctors

H.M

Nicole Julia Blattman (Roslyn High School)

Cellular and Molecular Biology

Optimized Methods for Personalized Detection of ctDNA in Plasma

H.M

Feyi Sayo Rufai (Roslyn High School)

Behavioral and Social Sciences

Does That Make Me Crazy? The Effects of Type of Psychological Disorder and Treatment Sought on Person Perception

Sachem High School East

H.M

Emma Michelle Foster (Sachem High School East), Julia Ashley Nadolne (Sachem High School East)

Earth & Environmental AND Environmental Engineering

Use of Mycorrhizal Fungi to Improve Soil Conditions for Agricultural Use

H.M

Antonia Mirra Pavek (Sachem High School East), Yousuf Suleman (Sachem High School East)

Biomedical and Health Sciences

The Effects of Ganoderma lingzhi and Lentinula edodes on the Longevity of Drosophila melanogaster and Regeneration Rates of Lumbriculus variegatus

Sachem High School North

H.M

Ahmet Burak Buyukbayraktar (Sachem High School North)

Cellular and Molecular Biology

Targeting Dihydroceramide Desaturase 1 (DES1) as a Method to Overcome Anoikis Resistance in Basal Breast Cancer

Seaford High School

3RD

Madison Marie Elias (Seaford High School)

Animal Sciences

Can Green Tea Alleviate the Effects of Stress Related to the Learning and Long-Term Memory of the

Smithtown High School East

2ND

Kevin Chen (Smithtown High School East)

Cellular and Molecular Biology

A Toxic Lunar Environment: Adverse Effects of a Lunar Soil Simulant (JSC-1A) on Alveolar Cellular Health and Genomic Integrity

2ND

Kira Elyse Conte (Smithtown High School East)

Behavioral and Social Sciences

Think Positive! The Effect of Growth Mindset Training on Academic Attitudes

3RD

Caitlin Alexandra Leodis (Smithtown High School East)

Mathematics AND Physics and Astronomy

Solving the Neighboring Borders Problem: Conceptualizing a Mathematical Model with Number Sets

H.M

Ike Zhang (Smithtown High School East)

Biomedical Engineering

Texture-based Radiomics of Peritumoral Tissue Predict Subsequent Progression into Cancer in Glioblastoma Multiforme

H.M

Caitlin Jean Wilkinson (Smithtown High School East)

Earth & Environmental AND Environmental Engineering

Rates and Traits: The Potential for Utilizing Above-ground Plant Traits to Predict Denitrification in Long Island Salt Marshes

Syosset High School

1ST

Jacqueline Rose Albert (Syosset High School)

Biomedical and Health Sciences

The Use of Curcumin to Mitigate the Inclusion of Alpha-synuclein in Transgenic Caenorhabditis elegans

1ST

Hailey Edelman (Syosset High School)

Translational Medical Science

Exploring the Role of Cannabidiol in a Caenorhabditis elegans Model

2ND

Sophia Seokyoung Jang (Syosset High School)

Plant Sciences

The Interactions of the ECT2 and CRY2 Pathways in Arabidopsis thaliana

2ND

Maiya Ali Raghu (Syosset High School)

Animal Sciences

The Effect of Blue Light on Oxidative Stress in C. elegans

3RD

Giselle Leah Rasquinha (Syosset High School)

Microbiology

Lipid-Conjugated Anti-HIV Fusion Inhibitor Exhibits Enhanced Potency and Stability

Valley Stream South High School

1ST

Nabiha Subzwari (Valley Stream South High School)

Biomedical and Health Sciences

Identifying Functional Disease Drivers in Lupus Nephritis Associated with Glomerular Remodeling

2ND

Mahnour Ayaz (Valley Stream South High School)

Animal Sciences

The Use of Curcumin to Mitigate the Negative Effects of Nicotine on Diabetic Fruit Flies

3RD

Abdullah Ali (Valley Stream South High School)

Energy: Sustainable Materials & Design AND Materials Science

Flammability and Water Absorption of Banana Stem Fiber Reinforced Green Composites

H.M

Evan Joseph Miller (Valley Stream South High School)

Cellular and Molecular Biology

Protein X: A Novel Protein in Enhancing Anti PD-1 and Treating Cancer

W. Tresper Clarke High School

1ST

Abishek T Ravindran (W. Tresper Clarke High School)

Behavioral and Social Sciences

Implementation of Novel Sector Weight and Google Trends Data Objectives using MOEA/D Curtails Systematic Risk for Quintessential Investors

H.M

Yuktha Chiguripati (W. Tresper Clarke High School)

Earth & Environmental AND Environmental Engineering

Pretreatment of Arachis hypogaea Seeds with a Coating of Trichoderma harzianum and Polymer 1 or Trichoderma harzianum and Chitosan Induces Greater Tolerance to Drought Conditions

H.M

Sanjana Ahmed (W. Tresper Clarke High School)

Behavioral and Social Sciences

Volumetric Measurements Offer a Differential Diagnosis of Schizophrenia from Related Disorders.

H.M

Saniya J Gaitonde (W. Tresper Clarke High School)

Animal Sciences

Bioinformatic Investigation of the Peculiarities of Long Intron Splicing in Hominidae

W.C. Mepham High School

H.M

Alyssa Dioguardi (W.C. Mepham High School)

Behavioral and Social Sciences

An Investigation of Hoodies on the Perception of Character

H.M

Ryan Joseph Pittman (W.C. Mepham High School)

Behavioral and Social Sciences

The Financial Literacy of High School Students

Ward Melville High School

1ST

William Hong Sun (Ward Melville High School)

Animal Sciences

Lipid Droplets in the Aging Brain

2ND

Chelsea Pan (Ward Melville High School)

Biomedical and Health Sciences

Dysregulation of Dopamine-2 Receptor with Neuronal Deficits Underlies Loss of Control in Cocaine Addiction

3RD

Christopher Hua Moore (Ward Melville High School)

Robotics and Intelligent Machines AND Embed. Sys. AND Sys. Software

Evaluating V-MAC: A Raspberry Pi Based Data-Centric MAC for Vehicular Video Transmission

3RD

Mariam Zaheera Quraishi (Ward Melville High School)

Behavioral and Social Sciences

The Effect of Sibling Status of Adolescents with Autism Spectrum Disorder on Symptom Severity and Social Development

H.M

Abdullah Bin Nauman (Ward Melville High School)

Robotics and Intelligent Machines AND Embed. Sys. AND Sys. Software

Mitigating Communication Bottlenecks in MPI-Based Distributed Learning

H.M

Enyo V Okeoma (Ward Melville High School)

Biomedical and Health Sciences

Semen Extracellular Vesicles (SEVs) Contain Proteins that Inhibit HIV-1 Reverse Transcriptase RNA-dependent DNA Polymerization in vitro

H.M

Rohan Nagavardhan (Ward Melville High School)

Mathematics AND Physics and Astronomy

Identifying Exoplanet Companions using Radial Velocity Data with Deep Learning

West Islip High School

H.M

Tristan Daniel Tran (West Islip High School)

Biomedical and Health Sciences

Examining the Paracrine Effects of Adipose-Derived Mesenchymal Stem Cells in a Bovine Model of

William A. Shine Great Neck South High School

2ND

Shourav Binayak Saha (William A. Shine Great Neck South High School)

Biochemistry

The Role of YY1 in the Modulation of the Podocyte Molecular Phenotype in High Glucose Conditions

3RD

Somya Pathak (William A. Shine Great Neck South High School)

Biomedical Engineering

Depth-of-Interaction Resolution Improvement via Directional Control of Scintillator Light

3RD

Joelle Siong Sin (William A. Shine Great Neck South High School)

Biomedical and Health Sciences

Understanding the Role of Microbes in the Pathogenesis of Intestinal Tumor Development

H.M

Kallista Zhuang (William A. Shine Great Neck South High School)

Biomedical and Health Sciences

Xenoestrogen Bisphenol-A's Neurotoxicity via Estrogenic Activity and Resulting Alzheimer's Disease Pathogenesis

H.M

Emma Yeung (William A. Shine Great Neck South High School)

Chemistry

Synthesis and Temperature-dependent Phase Behavior of a Dendritic Dipeptide

William Floyd High School

H.M

Farihah Chowdhury (William Floyd High School)

Biochemistry

Structural Resolution of a New Ligand with Human Insulin