

Computational Biology and Bioinformatics

1ST

Suchir Misra (Jericho High School)

Jericho High School

Abstract Mining to Create Comprehensive Disease-disease Correlation Database

2ND

Catherine Kim (Jericho High School)

Jericho High School

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

3RD

Danielle Lauren Gruber (Great Neck North High School)

Great Neck North High School

A Game-Theoretic Model of Task-Positive Networks

H.M

Alyssa Fong (East Meadow High School)

East Meadow High School

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

H.M

Siean Benson (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

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

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

1ST

Davesh Reddy Valagolam (Jericho High School)

Jericho High School

Monitoring and Diagnosing Pathological Tremors Through Mobile and Neural Network Technology

2ND

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

Half Hollow Hills West

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

3RD

Christopher Hua Moore (Ward Melville High School)

Ward Melville High School

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

H.M

Kevin Douglas Gauld (Manhasset High School)

Manhasset High School

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

H.M

Abdullah Bin Nauman (Ward Melville High School)

Ward Melville High School

Mitigating Communication Bottlenecks in MPI-Based Distributed Learning

Biomedical Engineering

1ST

Sejal Gupta (Hicksville Senior High School)

Hicksville Senior High School

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

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)

North Shore Hebrew Academy High School

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

3RD

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

William A. Shine Great Neck South High School

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

H.M

Ike Zhang (Smithtown High School East)

Smithtown High School East

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

H.M

Alice Zhaoyi Chen (Jericho High School)

Jericho High School

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

Plant Sciences

1ST

Emily Gan (Jericho High School)

Jericho High School

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

2ND

Sophia Seokyoung Jang (Syosset High School)

Syosset High School

The Interactions of the ECT2 and CRY2 Pathways in Arabidopsis thaliana

3RD

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

George W. Hewlett High School

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

H.M

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

Central Islip Senior High School

The Effects of Rhizobacteria on Hydroponically Grown Arugula

Biochemistry

1ST

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

Connetquot High School

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

2ND

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

William A. Shine Great Neck South High School

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

3RD

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

Hebrew Academy of the Five Towns and Rockaways

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

H.M

Rishitha Kudaravalli (Half Hollow Hills West)

Half Hollow Hills West

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

H.M

Farihah Chowdhury (William Floyd High School)

William Floyd High School

Structural Resolution of a New Ligand with Human Insulin

Energy: Sustainable Materials & Design AND Materials Science

1ST

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

Manhasset High School

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

2ND

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

Manhasset High School

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

3RD

Abdullah Ali (Valley Stream South High School)

Valley Stream South High School

Flammability and Water Absorption of Banana Stem Fiber Reinforced Green Composites

H.M

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

Lawrence High School

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

Engineering Mechanics

1ST

Ian Carlson Bailey (Garden City High School)

Garden City High School

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

2ND

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

Bethpage High School

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

3RD

Atif Khan (Connetquot High School)

Connetquot High School

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

H.M

Alex Tang (George W. Hewlett High School)

George W. Hewlett High School

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

H.M

Rachel Catherine Williams (Kings Park High School)

Kings Park High School

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

Earth & Environmental AND Environmental Engineering

1ST

Rithika Narayan (Elwood - John H. Glenn)

Elwood - John H. Glenn

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

1ST

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

Bethpage High School

Soil Moisture Sensing Robot: A Novel Agricultural Device

2ND

William Hu (Jericho High School)

Jericho High School

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

2ND

Katherine Zhang (Jericho High School)

Jericho High School

Dialdehyde Cellulose Nanocrystal Hydrogel Synthesis for Antibiotic Remediation

3RD

Kyra Jamieson McCreery (North Shore High School)

North Shore High School

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

3RD

Ethan Jacob Sontarp (Commack High School)

Commack High School

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

H.M

Andrew John Brinton (John F. Kennedy High School)

John F. Kennedy High School

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

H.M

Caitlin Jean Wilkinson (Smithtown High School East)

Smithtown High School East

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

H.M

Yuktha Chiguripati (W. Tresper Clarke High School)

W. Tresper Clarke High School

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

H.M

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

George W. Hewlett High School

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

H.M

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

Sachem High School East

Use of Mycorrhizal Fungi to Improve Soil Conditions for Agricultural Use

H.M

Serena Zhao (Manhasset High School)

Manhasset High School

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

Biomedical and Health Sciences

1ST

Jacqueline Rose Albert (Syosset High School)

Syosset High School

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

1ST

Nabiha Subzwari (Valley Stream South High School)

Valley Stream South High School

Identifying Functional Disease Drivers in Lupus Nephritis Associated with Glomerular Remodeling

2ND

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

Plainview-Old Bethpage JFK High School

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

2ND

Chelsea Pan (Ward Melville High School)

Ward Melville High School

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

3RD

Arpie Bakhshian (Lynbrook High School)

Lynbrook High School

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

3RD

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

William A. Shine Great Neck South High School

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

H.M

Angelica Abbondandolo (North Shore High School)

North Shore High School

Elucidating the Role of Tenomodulin on IVD Homeostasis and Biomechanical Function

H.M

Tristan Daniel Tran (West Islip High School)

West Islip High School

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

H.M

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

William A. Shine Great Neck South High School

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

H.M

Enyo V Okeoma (Ward Melville High School)

Ward Melville High School

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

H.M

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

Sachem High School East

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

H.M

Seunguk John Baek (Herricks High School)

Herricks High School

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

Cellular and Molecular Biology

1ST

Vyom Shah (Jericho High School)

Jericho High School

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

2ND

Kevin Chen (Smithtown High School East)

Smithtown High School East

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

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)

Eastport South Manor Junior-Senior High School

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

H.M

Evan Joesph Miller (Valley Stream South High School)

Valley Stream South High School

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

H.M

Nicole Julia Blattman (Roslyn High School)

Roslyn High School

Optimized Methods for Personalized Detection of ctDNA in Plasma

H.M

Maxline Delorme (Elmont Memorial)

Elmont Memorial

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

H.M

Benjamin Levi Goldfried (Half Hollow Hills East)

Half Hollow Hills East

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

H.M

Ahmet Burak Buyukbayraktar (Sachem High School North)

Sachem High School North

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

Translational Medical Science

1ST

Hailey Edelman (Syosset High School)

Syosset High School

Exploring the Role of Cannabidiol in a Caenorhabditis elegans Model

2ND

Farah Kabir (Garden City High School)

Garden City High School

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

3RD

Rachel Sydnie Bocian (Half Hollow Hills East)

Half Hollow Hills East

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

Behavioral and Social Sciences

1ST

Abishek T Ravindran (W. Tresper Clarke High School)

W. Tresper Clarke High School

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

1ST

Megan Gole (Half Hollow Hills East)

Half Hollow Hills East

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

2ND

James Zheng (Garden City High School)

Garden City High School

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

2ND

Kira Elyse Conte (Smithtown High School East)

Smithtown High School East

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

3RD

Mariam Zaheera Quraishi (Ward Melville High School)

Ward Melville High School

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

3RD

Olivia Felice Viruet Quintero (Roslyn High School)

Roslyn High School

The Effect of Accent and Accent Strength on Perceptions of Doctors

H.M

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

Huntington High School

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

H.M

Sanjana Ahmed (W. Tresper Clarke High School)

W. Tresper Clarke High School

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

H.M

Madeline Yang (Great Neck North High School)

Great Neck North High School

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

H.M

Kreena Totala (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

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

H.M

Feyi Sayo Rufai (Roslyn High School)

Roslyn High School

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

H.M

Alyssa Dioguardi (W.C. Mephram High School)

W.C. Mephram High School

An Investigation of Hoodies on the Perception of Character

H.M

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

W.C. Mephram High School

The Financial Literacy of High School Students

H.M

Tyler John Ruvolo (Plainedge High School)

Plainedge High School

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

H.M

Feiyang Dai (Jericho High School)

Jericho High School

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

Chemistry

1ST

Tong Ye (Half Hollow Hills East)

Half Hollow Hills East

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

2ND

Riya Patel (Jericho High School)

Jericho High School

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

3RD

Celina Ma (Kings Park High School)

Kings Park High School

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

H.M

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

Huntington High School

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

H.M

Michelle Zeng (Great Neck North High School)

Great Neck North High School

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

H.M

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

William A. Shine Great Neck South High School

Synthesis and Temperature-dependent Phase Behavior of a Dendritic Dipeptide

H.M

Raymond Lin (Great Neck North High School)

Great Neck North High School

Formation of Bilayer Sustainable Food Packaging Films

Animal Sciences

1ST

William Hong Sun (Ward Melville High School)

Ward Melville High School

Lipid Droplets in the Aging Brain

1ST

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

John F. Kennedy High School

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

2ND

Maiya Ali Raghu (Syosset High School)

Syosset High School

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

2ND

Mahnoor Ayaz (Valley Stream South High School)

Valley Stream South High School

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

3RD

Madison Marie Elias (Seaford High School)

Seaford High School

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

3RD

Ashley Cammiso (John F. Kennedy High School)

John F. Kennedy High School

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

H.M

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

Commack High School

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

H.M

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

Manhasset High School

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

H.M

Kayleigh Elizabeth O'Melia (Kings Park High School)

Kings Park High School

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

H.M

Saniya J Gaitonde (W. Tresper Clarke High School)

W. Tresper Clarke High School

Bioinformatic Investigation of the Peculiarities of Long Intron Splicing in Hominidae

Mathematics AND Physics and Astronomy

1ST

Ella Rose Wesson (Manhasset High School)

Manhasset High School

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

2ND

Richard Hui Ren (Jericho High School)

Jericho High School

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

3RD

Caitlin Alexandra Leodis (Smithtown High School East)

Smithtown High School East

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

H.M

Michael Galardi (Plainedge High School)

Plainedge High School

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

H.M

Rohan Nagavardhan (Ward Melville High School)

Ward Melville High School

Identifying Exoplanet Companions using Radial Velocity Data with Deep Learning

Microbiology

1ST

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

Half Hollow Hills West

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

2ND

Marvia Jozie Pressoir (Elmont Memorial)

Elmont Memorial

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

3RD

Giselle Leah Rasquinha (Syosset High School)

Syosset High School

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

H.M

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

Hebrew Academy of the Five Towns and Rockaways

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

H.M

Christopher Edward Alexander (Elmont Memorial)

Elmont Memorial

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

H.M

Sarah Flynn Moran (North Shore High School)

North Shore High School

Antiviral Capabilities of DABCO-hydrocarbon Molecules

Animal Sciences

1ST

Maiya Ali Raghu (Syosset High School)

Syosset High School

The Effect of EGCG on Oxidative Stress in C. elegans

2ND

Jordyn Paige Krinsky (John F. Kennedy High School)

John F. Kennedy High School

The Combinatorial Effects of Diet and Caffeine Mitigate Parkinson's Disease in a Drosophila melanogaster System

3RD

Julia Mary Levine (John F. Kennedy High School)

John F. Kennedy High School

Reduced Fasciclin 2 Expression in Drosophila melanogaster Leads to Impaired Locomotor Function and Abnormal Stress Response Following Dietary Alterations of Carbohydrates in a Celiac Disease Model

H.M

Mary Helen Menger (Sacred Heart Academy)

Sacred Heart Academy

Canaries in the Coalmine: Evaluating the Effect of Petrochemical Contamination on the Cardiovascular Health of Daphnia Magna

Behavioral and Social Sciences

1ST

Isabella Souza (Syosset High School)

Syosset High School

Seeing Through the Scan: The Impact of fMRI Evidence on Juror Satisfaction and Verdicts

1ST

Nethmi Withanage (Smithtown High School East)

Smithtown High School East

The Analysis of the Use of Color in Pandemic Artwork Using Digital Quantifications

1ST

Carly Sara Friedman (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Education During a Pandemic: Exploring the Effectiveness of Synchronous versus Asynchronous E-learning From A Teacher's Perspective

2ND

Aaliyah Naomi Bullen (Half Hollow Hills West)

Half Hollow Hills West

The Prevalence of Energy Intake Methods in New York State Obesity Prevention Policies

3RD

Erin Lynn Ye (Huntington High School)

Huntington High School

Desde Casa: Examining the Correlation between Perception of Learning in a Virtual Model and Bilingual Vocabulary Knowledge in Spanish-Speaking ENL Students

H.M

Jennie Dapice (Syosset High School)

Syosset High School

The Influence of Political Party on the Extent of State E-cigarette Regulation

H.M

Elianna Michelle Rivera (W. Tresper Clarke High School)

W. Tresper Clarke High School

Measuring Opportunity for Immigrants Through the Creation of a Political Index: A Longitudinal Study

Biomedical and Health Sciences

1ST

Samantha Rose Radinsky (Paul D. Schreiber High School)

Paul D. Schreiber High School

The role of bone lineage cells during digit tip regeneration in adult mice

1ST

Yifang Zha (The Wheatley School)

The Wheatley School

Curcumin and Capsaicin Synergistically Suppress Neuroblastoma Tumor Development

2ND

Natalia Pahlavan (Jericho High School)

Jericho High School

AcuRe: Third-Generation Machine Learning Cancer Detection Model Using Nanopore Read Alignments

3RD

Akshay Malhotra (Ward Melville High School)

Ward Melville High School

Impact of Body Mass Index on Clinical Presentation, Management, and Outcomes in Adults with Cardiac Arrest Undergoing Coronary Angiogram

H.M

Rhea Rasquinha (Herricks High School)

Herricks High School

Identifying the Prognostic, Tumor-suppressive and Immunologic Roles of IRF5 in Breast Cancer

H.M

Andrew Khanin (Cold Spring Harbor High School)

Cold Spring Harbor High School

Testing the Effects of Flavorant Propylene Glycol Acetals on the Locomotor Behavior of Drosophila Melanogaster Using the Rapid Iterative Negative Geotaxis (RING) Assay

Cellular and Molecular Biology AND BioChemistry

1ST

Neil Mehta (Ward Melville High School)

Ward Melville High School

The Effect of IL-22 Stimulation on Paneth Cell Granule Morphology and Epithelial Cell Proliferation

2ND

Kyle Pinzon (Herricks High School)

Herricks High School

Screening and Modifying DEDDh Exonuclease Inhibitors for Targeting the SARS-CoV-2 nsp14 ExoN Catalytic Site

3RD

Miah Christina Margiano (St Anthony's High School)

St Anthony's High School

Synergy of Treatment: Therapeutic Vulnerabilities in Small Cell Lung Cancer

Computational Biology and Bioinformatics

1ST

Danielle Lauren Gruber (Great Neck North High School)

Great Neck North High School

A Game Theoretic Model of the Resting State Brain

1ST

Catherine Kim (Jericho High School)

Jericho High School

Novel Prediction of Adverse Drug Reactions and Underlying Pathological Mechanisms via Hierarchical Classification

2ND

Reid Fleishman (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Creation of a Machine Learning App to Facilitate Pancreatic Cancer Prediction

3RD

Mir Zayid Alam (Manhasset High School)

Manhasset High School

Identification of Genetic Biomarkers for Hepatocellular Carcinoma Using an Automated Microarray-Based Pipeline and Pathway Enrichment

H.M

Chapin Luke Zerner (Commack High School)

Commack High School

Using Machine Learning to Predict Features Related to the Adaptive Immune Response in COVID-19

H.M

Michael Chu (Syosset High School)

Syosset High School

CoronaXNet: Using Convolutional Neural Networks to Automate the Detection of COVID-19 from Chest X-Ray Images

Earth and Environmental Sciences

1ST

Ashley Katherine Roth (Lynbrook High School)

Lynbrook High School

Aquatic Habitat Nitrate Levels on Long Island: The Effect of High Nitrate Levels on Anuran Species Abundance

1ST

Rithika Narayan (Elwood - John H. Glenn)

Elwood - John H. Glenn

Harnessing Deep Learning to Assess Coral Reef Health through Crowd-sourced Efforts

2ND

Brianna Han (Commack High School)

Commack High School

Markov chain Monte Carlo methods for estimating rainfall rate from dual-polarization weather radar

3RD

Blessycilia Sebastian (W. Tresper Clarke High School)

W. Tresper Clarke High School

Analyzing the Effect of Silver Nanoparticles on Aquatic Daphnia Magna

H.M

Rebecca Cho (Jericho High School)

Jericho High School

Associations between the North Atlantic Subtropical High and Tropical Cyclone Movement and Precipitation

H.M

Noel F Manalil (East Meadow High School), Jayden Abraham (East Meadow High School)

East Meadow High School

The Effects of Media and Hydraulic Retention time on Nitrogen Retention in Bioreactors for Wastewater Treatment

Embedded Systems AND Engineering Mechanics

1ST

Margaret Anne Gates (Wantagh High School)

Wantagh High School

Autonomous Wildfire Detection and Containment System

2ND

Ryan William Menier (Kings Park High School)

Kings Park High School

The Electron Ion Collider and the Evaluation of Steering Magnets for the Polarized Electron Source Prototype

Translational Medical Science AND Biomedical Engineering

1ST

Janice Kirti Rateshwar (Jericho High School)

Jericho High School

Molecular Mechanisms of Direct Inhibition of NF- κ B Subunits by 9-chloro-8-(hexyloxy)-2H-chromeno[2,3-d] pyrimidine-2,4(3H)-dione (IT-848)

2ND

Alice Zhaoyi Chen (Jericho High School)

Jericho High School

MRgRT and delta radiomics: Early prediction of survival in pancreatic cancer

Systems Software

1ST

James Connor (Northport High School)

Northport High School

Attributing State-backed Information Operations on Twitter through Machine Learning

2ND

Steven Anthony Cayea (St Anthony's High School)

St Anthony's High School

Efficiency of Data Compression Algorithms for Low-Cost Laser Transceivers

Chemistry AND Material Science AND Energy:Sustainable Materials & Design

1ST

Brian Insuhp Lee (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Evaluating the efficacy of repurposed and modified traditional eastern medicinal compounds on Coronavirus Family specific target structures.

2ND

Nishanth Chinnadurai (East Meadow High School), Udithi Kothapalli (St Anthony's High School), Hugo Patrick Onghai (Earl L. Vandermeulen High School/Port Jefferson UFSD)

East Meadow High School

Molecular-Imprinted Biosensor for SARS-CoV-2 Detection

3RD

Benjamin Alex Sherman (George W. Hewlett High School)

George W. Hewlett High School

Robotics and Intelligent Machines

1ST

Ethan Horowitz (Manhasset High School)

Manhasset High School

CET-CNN: Modular Hierarchical Image Classification Using Conditional-Execution Tree CNNs

2ND

Mark Shapiro (Half Hollow Hills East)

Half Hollow Hills East

Analysis of Neural Network Community Structure: a Network-Theoretic Approach

Microbiology

1ST

Giselle Leah Rasquinha (Syosset High School)

Syosset High School

FD028: A Bifunctional HIV-1 Inactivator Acts Before Host Cell Entry

2ND

Christopher Edward Alexander (Elmont Memorial)

Elmont Memorial

Avian Paramyxovirus Serotype 4 (APMV-4) Promotes Apoptotic Cell Death & Stimulated Immune Response in Malignant Melanoma and Relapse Cancers in respect to Newcastle Disease Virus (NDV): Characterization of a Novel Oncolytic Virus

Plant Sciences

1ST

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

George W. Hewlett High School

Lipopolysaccharide and Galactose Induce Cell Death in Prothallial Cells of Gametophytes of Ceratopteris richardii

2ND

Leena Alzafarani (Brentwood High School)

Brentwood High School

TURN TO NATURE: THE USE OF SALT WATER FOR THE MITIGATION AND CONTROL OF JAPANESE KNOTWEED, REYNOUTRIA JAPONICA

Math AND Physics & Astronomy

1ST

Kathryn Elizabeth Postiglione (Lynbrook High School)

Lynbrook High School

Analyzing the Photometry of Star Cluster Messier 39: Creation of Color Magnitude Diagram, Age Calculation, and Distance Measurement

2ND

Uma Arengo (Long Beach High School)

Long Beach High School

Using Box-Counting Dimension to Quantify the Progressive Stages of Diabetic Retinopathy

3RD

Sameer Singh (Valley Stream South High School)

Valley Stream South High School

Exo2: An Investigation into a Novel Characterization Model for Transit Photometry

Environmental Engineering

1ST

Julius Yoh (Manhasset High School)

Manhasset High School

The Optimization of Desalination and Ion-Removal Rate Through the Engineering of Novel Turbulent Modular Designs in an Electrodialysis System

2ND

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

Bethpage High School

Solar-Powered Soil Sensing Robot: A Novel Agricultural Device for Monitoring Moisture and pH

Animal Sciences AND Plant Sciences

1ST

Sarah Kathryn Schubel (Smithtown High School East)

Smithtown High School East

Loss of NMDA Receptor Signaling Results in Excess Proliferation of CNS and Neural Crest-Derived Cells

1ST

Soyoun Moon (Commack High School)

Commack High School

Exploring Sexual Dimorphism and Sex Hormone Receptor Expression in the Bed Nucleus of the Stria Terminalis (BNST) in the Monogamous Prairie Vole

2ND

Madison Elias (Seaford High School)

Seaford High School

*Can Green Tea Extend the Memory for Extinction Training in the Great Pond Snail (*Lymnaea stagnalis*)?*

3RD

Rehan Mujahid Mian (Smithtown High School West)

Smithtown High School West

*A study on the structure, function, and evolution of the $\alpha 1$ and $\alpha 2$ adrenoceptors in *Nematostella vectensis*, the starlet sea anemone.*

H.M

Mariam Nadeem Hassan (Half Hollow Hills West)

Half Hollow Hills West

Effects of CCDC11 on Caudal Fin Regeneration in Danio rerio

H.M

Chelsea Paige Russo (Seaford High School)

Seaford High School

The Effects of the Non-Nutritive Sweeteners Acesulfame Potassium and Neotame on Anxiety in Planaria (Dugesia dorotocephala).?

H.M

Michelle Betty Brown (John F. Kennedy High School)

John F. Kennedy High School

The Concurrent Effects of Metformin and Dietary Restriction on Parkinson's Disease in a Drosophila melanogaster Model

Behavioral and Social Sciences

1ST

Han Byur (Hailee) Youn (Roslyn High School)

Roslyn High School

Why We Vote: How Positive Descriptive Norms and Holding a Minority Political Viewpoint Increase Citizens' Intention and Responsibility to Vote

1ST

Jacob Aaron Leshnower (Half Hollow Hills East)

Half Hollow Hills East

Music and Emotion: The Intervallic Fallacy of the Major-Minor Dichotomy

1ST

Kyle Arjun Kavully (Plainedge High School)

Plainedge High School

American Dream or American Myth? A Linear Regression Analysis of American Attitudes as a Factor of Race and Ideology

2ND

Angelina Marie Livigni (Paul D. Schreiber High School)

Paul D. Schreiber High School

Bad Medicine? An Analysis of Self-Advocacy Regarding Medical Malpractice Scenarios by High School Students

2ND

Leigh Baratta (Smithtown High School East)

Smithtown High School East

*Beauty is in the Eye of the Beholder: The Impact of Beauty on Proliferation of Invasive Insect Species *Lycorma delicatula*, the Spotted Lanternfly*

3RD

Emily Yeh (Roslyn High School)

Roslyn High School

The Effect of Genetically Modified Labeling of Plant and Animal Products on Consumer Perceptions

3RD

Eli Weseley-Jones (North Shore High School)

North Shore High School

Numeracy and the Communication of Medical Risk

3RD

Gabrielle Joy Oliva (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Impact of Ascribed Gender Stereotypes on Public Perceptions of Sexual Assault Victims

H.M

Katherine Yuan Wang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Assessing the Correlation between Perceived Parent-Child Relationship Quality and Executive Functioning in Early Adolescents

H.M

Siddharth Sandeep Desai (Syosset High School)

Syosset High School

Resting-state functional connectivity of the medial dorsal nucleus in First-Episode Psychosis and its role in working memory

H.M

Sabrina Guo (Syosset High School)

Syosset High School

Efficacy of Mask Use in Reducing SARS-CoV-2 Infection Rates

H.M

Abigail Lev (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Inadvertent Detrimental Effects of Caucasian Performative Activism on the Perceived Societal Marginalization of the African American Population

H.M

Hannah Paulina Brooks (Paul D. Schreiber High School)

Paul D. Schreiber High School

“The War in Words”; Effects of Demographic and Personal Differences on Reactions to Semantically Bleached Nazi Compounds

H.M

Olivia Ives Bailey (Garden City High School)

Garden City High School

Machine Learning Prediction and Analysis of COVID-19 Vaccine Rates by State

Biochemistry AND Microbiology

1ST

Lakxshanna Raveendran (Commack High School)

Commack High School

Characterizing the Secretion of the Francisella tularensis Protein FTL_1123

2ND

Collin Steve Lung (Lynbrook High School)

Lynbrook High School

In Silico Studies of Neonicotinoids with CYPs and nAChRs - Opportunities for the Design of Selective Pesticides

3RD

Tyler Daniel Nagosky (Smithtown High School West)

Smithtown High School West

Using Cnidarian nerve nets to visualize the excitotoxic effects of BMAA

H.M

Chloe Chang (Herricks High School)

Herricks High School

Investigating the Therapeutic Potential of Epigallocatechin Gallate and Theaflavin-3, 3'-digallate on Inhibiting ACE2-Spike Protein Binding and Mitigating Induced-Cellular Death by SARS-CoV-2

H.M

Anika G Petruccelli (East Hampton High School)

East Hampton High School

Assessing the Potential of Phage Therapy to Combat Antibiotic Resistance with Mycobacterium smegmatis

Biomedical and Health Sciences AND Biomedical Engineering

1ST

Griffin Hon (Syosset High School)

Syosset High School

Repurposed Cephalexin Causes Multifaceted Pro-cancer Effects by Way of Wnt Signaling Pathway

1ST

Christopher Prainito (John F. Kennedy High School)

John F. Kennedy High School

Development of a Polydiacetylene-Based Paper Biosensor for Naked-Eye Detection of COVID-19 in Saliva

1ST

Natalia Pahlavan (Jericho High School)

Jericho High School

Automatic Diagnosis of the 12-lead Electrocardiogram: Cardiac Arrhythmia Detection Using a Deep Learning Approach

2ND

Maxx Yung (Roslyn High School)

Roslyn High School

Activation of the Mu-Opioid Receptor on the Renin-Angiotensin System and Its Role In SARS-CoV-2 Treatment and Pathology

2ND

Karly Chan (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

A User-Friendly and Non-Invasive Vocal Therapy Progress Tracker

3RD

Stanley Kong (Manhasset High School)

Manhasset High School

Dicafeoylquinic Acids Inhibit SARS-CoV-2 Spike Protein-Induced Apoptosis: An In Silico and In Vitro Implication of a Novel Treatment to Mitigate Infection and Vaccine Side Effects

3RD

Nathan Thomas Han (Syosset High School)

Syosset High School

Elucidating the Molecular Mechanisms of Toxicarioside A and Sulforaphene-Induced Colorectal Cancer Cell Death

3RD

Olivia May Platt (Paul D. Schreiber High School)

Paul D. Schreiber High School

Determining The Regulatory Role of UFD1 in MYCN-driven Neuroblastoma

H.M

Annette Park (North Shore High School)

North Shore High School

SARS-CoV-2 Spike Proteins Induce a Pro-Inflammatory Cytokine Response in Macrophages

H.M

Jessie Dong (Roslyn High School)

Roslyn High School

Luteolin Targets Neuroblastoma and Lymphoma via Mitochondrial Complex 1

H.M

Julie Theresa Moehringer (Sanford H. Calhoun)

Sanford H. Calhoun

Retinal Ganglion Cell Functional Recovery After Intraocular Pressure Lowering Treatment Using Prostaglandin Analogs In Glaucoma Suspects

H.M

Jeylin Elizabeth Lee (Herricks High School)

Herricks High School

The Effect of Prophylactically Prescribed Anticoagulants and Dose Regimen on Prevalence of Venous Thromboembolism After COVID-19 Diagnosis

H.M

Michael Khalfin (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Hemodynamics Model Illustrating Transradial Delivery of Anti-Tau Nanoparticle For Prodromal Alzheimer's Disease Intervention

Cellular and Molecular Biology

1ST

Miah Christina Margiano (St Anthony's High School)

St Anthony's High School

LncRNAs as a Potential Therapeutic Target for Neuroblastoma

2ND

Ethan Masyn Abelev (George W. Hewlett High School)

George W. Hewlett High School

The Role of Irisin in Human Reproduction

3RD

Andrew Lee (Jericho High School)

Jericho High School

A Cell-type-specific Expression and Protein Interaction Analysis to Identify Autism Risk Genes

3RD

Ethan Wang (Jericho High School)

Jericho High School

Gut microbiota and Alzheimer's disease: Investigating the role of copper and CCL11 dysregulation

H.M

Leo Zhang (Jericho High School)

Jericho High School

Investigation of Rutin on Benzene-treated U937: A Focus on TNF- α ; and Superoxides

H.M

Anneliese Margot Baum (George W. Hewlett High School)

George W. Hewlett High School

Profiling pathway dysregulation in ovarian and pancreatic cell lines upon the loss of CUL4 E3 Ligase activity using novel inhibitor KH-4-43

H.M

Benjamin Isaacson (Eastport South Manor Junior-Senior High School), Jane Brylewski (Eastport South Manor Junior-Senior High School), Fiona Schlegel (Eastport South Manor Junior-Senior High School)

Eastport South Manor Junior-Senior High School

Structural Determination of the Native form of tRNA Methyltransferase (TrmD) from Mycobacterium paratuberculosis subspecies avium

H.M

Sinchana Venkatesh (Herricks High School)

Herricks High School

Assessing the Ability of Vitexin in Mitigating Neuroinflammation in Alzheimer's Disease.

Chemistry AND Materials Science

1ST

Alex Lin Wang (Syosset High School)

Syosset High School

Computational Assessment of Macrocyclic Host-Guest Ion-Dipole Interactions with Negative Pores

2ND

Erin Yim (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Rationalization of Simple Ring Intermolecular π - π Stacking Interactions Investigated with DFT-d

3RD

Cathrine Efsun Sakin (Walter G. O'Connell Copiague High School)

Walter G. O'Connell Copiague High School

The Efficacy of Chitosan on the Construction and Function of Compostable Wind Turbine Blades

H.M

Paul Vincent Pillitteri (West Islip High School)

West Islip High School

Compositional Analysis of Oyster Shells Using Submicron Resolution X-Ray Spectroscopy

H.M

Samuel Philip Jacobson (Roslyn High School)

Roslyn High School

The Effectiveness of Self-Oscillating, Catalyzed Belousov-Zhabotinsky (BZ) Gel in Solving the Traveling Salesman Problem

Computational Biology and Bioinformatics AND System Software

1ST

Kevin Zhu (Jericho High School)

Jericho High School

Investigating Recurrent Repeat Contractions in 10 Human Cancers

1ST

Amber Kaixin Luo (Ward Melville High School)

Ward Melville High School

RiboBayes: Assessing the Transcriptome-wide Expression of Ribosome Pause Sites in Ribosome Profiling Data With Bayesian Wavelet Thresholding

2ND

Aaquib Ahmed Syed (Smithtown High School West)

Smithtown High School West

Non-invasively Guiding Breast Cancer Chemotherapy Using Machine Learning with GLCM Textural Analysis

3RD

David Liang (Ward Melville High School)

Ward Melville High School

Beyond the Scales: A physics-informed machine learning approach for more efficient modeling of SARS-CoV-2 spike glycoprotein

3RD

Shreya Kannan (Half Hollow Hills West), Bethany Siegel (Half Hollow Hills West), Marlene McKinney (Half Hollow Hills West)

Half Hollow Hills West

Development of a Chromotherapy-based Mobile Game for Stress and Mood Management

H.M

Chloe Chan (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Support Vector Machine for Autism Spectrum Characterization: Exploiting Brain Connectivities from fMRI, DWI, and a Combination of Both Modalities for Improved Diagnostic Accuracy

H.M

Wafiq Khondkar (Herricks High School)

Herricks High School

A Novel Framework for Evaluation and Parameter Tuning of Missing Value Imputation

H.M

Brian Song (Roslyn High School)

Roslyn High School

Detection of Northern Leaf Blight in Natural Environment Using Optimized YOLOv3

Earth and Environmental Sciences

1ST

Rebecca Cho (Jericho High School)

Jericho High School

Reconstruction modeling using tectonics and climate of western North America

1ST

Tarunika Sasikumar (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Assessing the Efficacy of the U.S Endangered Species Act through the Novel Quantification of Species Charisma and Respective Population Trends

2ND

Dylan Maxwell D'Agate (Half Hollow Hills East)

Half Hollow Hills East

Climatological Impact of Sudden Stratospheric Warming Events on the Atmospheric Circulation and Nature of Extratropical Cyclones over Eastern North America

3RD

roberto Antonio Lopez (Brentwood High School)

Brentwood High School

EVALUATING PHRAGMITES AUSTRALIS WRACK ACCUMULATION IN A LONG ISLAND SALT MARSH ECOSYSTEM AND ASSESSING ITS EFFECT ON CARBON SEQUESTRATION, THE NITROGEN CYCLE, AND SEDIMENT BIOTA

H.M

Ricardo Lopez (Brentwood High School)

Brentwood High School

EVALUATING SALT MARSH RESTORATION AT SUNKEN MEADOW: ANALYSIS OF SEDIMENT LOSS AND ACCRETION.?? ??

H.M

Kiera McKenna Darnell (Paul D. Schreiber High School)

Paul D. Schreiber High School

Modelling coastal erosion using future hurricane scenarios

H.M

Kayla J Sohn (Herricks High School)

Herricks High School

Energy: Sustainable Materials & Design AND Engineering Technology AND Environmental Engineering

1ST

Ava Malysa (Manhasset High School), Samantha Palmadessa (Manhasset High School)

Manhasset High School

Electrocoagulation with Aluminum, Copper, and Zinc Electrodes for Aqueous Methylene Blue Dye Remediation and Sustainable Energy Production

1ST

Emily Kim (Jericho High School)

Jericho High School

Synergistic removal of RB5 by activated carbon under UV irradiation

2ND

Aavi Lund (East Meadow High School)

East Meadow High School

The Utilization of a Tilt-rotor Mechanism to Minimize Forward Flight Drag of an H-shaped Quadcopter for Delivery Drone Applications

3RD

Emily Theodosopoulos (Manhasset High School), Adam De Leeuw (Manhasset High School)

Manhasset High School

Engineering the optimal dye-sensitized solar cell by comparing anthocyanin and chlorophyll dyes, dye immersion time, and counter electrodes.

H.M

Ericka Lai (Manhasset High School), Christian Kim (Manhasset High School)

Manhasset High School

Simultaneous Azo Dye Removal and Bioelectricity Generation by an Up-Flow Constructed Wetland-Microbial Fuel Cell with Biochar Substrate

H.M

Allison Zhang (Manhasset High School)

Manhasset High School

Design of a Soft Robotic Gripper Inspired by the Seahorse Skeleton

Embedded Systems AND Robotics and Intelligent Machines

1ST

James Nagler (Garden City High School)

Garden City High School

Project Vision - Virtual environment through AI recognition

2ND

Samay Lakhani (Jericho High School)

Jericho High School

Applying Spatiotemporal Attention to Identify Distracted and Drowsy Driving with Vision Transformers

3RD

Chigozirim Nodebechukwu Ifebi (Elmont Memorial)

Elmont Memorial

How to Train Your Multi-view Cloth Classifier

H.M

Kevin Holden Taylor (Paul D. Schreiber High School)

Paul D. Schreiber High School

Creating a "Third Eye" for the Visually Impaired with Object Detection

H.M

Sreenand Mallisetty (Hauppauge High School)

Hauppauge High School

Creating an Algorithm for a Handwritten Digit Recognition - Convolutional Neural Network Model by Optimizing Momentum, Weights, and Biases.

Mathematics AND Physics and Astronomy

1ST

Daniel Salkinder (Half Hollow Hills East)

Half Hollow Hills East

nxn Rubik's Cubes and God's Number

2ND

Kailly Elizabeth Nocera (Seaford High School)

Seaford High School

Glacial and Fluvial Activity During Periods of High Obliquity in Arabia Terra

3RD

Alice Tianxin Wang (Half Hollow Hills East)

Half Hollow Hills East

A magic condition monochromator design for implementation at the NSLS-II

H.M

Zachary Finger (Smithtown High School East)

Smithtown High School East

Rare Isotope Production at the Electron Ion Collider

H.M

Katherine Ranjbar (Earl L. Vandermeulen High School (Port Jefferson))

Earl L. Vandermeulen High School (Port Jefferson)

Impact of Imperfection Spin Resonance Strength on Depolarization in RHIC

Translational Medical Science

1ST

Collin Li (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

SmartClick: A Novel Automated Segmentation Tool for Medical Images with Interactive Optimization Capabilities Designed for Liver Cysts

2ND

Ethan Anthony Chiu (Syosset High School)

Syosset High School

Developing a Self-Formed Ectodermal Autonomous Multi-Zone Organoid Model using Human Stem Cells to Examine the Effect of Doxycycline Treatment on Uveal Melanoma.

3RD

Janice Rateshwar (Jericho High School)

Jericho High School

Novel Small Molecule IT-848 Treatment of Hematological Malignancies: IT-848-based Direct Inhibition of NF- κ B and Combination Treatments*

H.M

Jessica Guo (Ward Melville High School)

Ward Melville High School

Piperlongumine and Piperlonguminine Mitigate Rotenone Induced Neurotoxicity: Implications for a Novel Parkinson's Disease Treatment

H.M

Sana Saleem Nabi (Herricks High School)

Herricks High School

A Novel Assessment of Splenic Tissue Following Electrical Stimulation of the Dorsal Motor Nucleus of the Vagus in Murine Endotoxemia

Animal Sciences

1ST

Ibrahim Syed Qadri (Valley Stream South High School)

Valley Stream South High School

The Ability of Vitamin E to Improve the Locomotor Fitness, Reproduction, and Metabolic Respiration of Nicotine-Induced D. melanogaster

2ND

Jennifer Zhong (Smithtown High School East)

Smithtown High School East

A Larval Zebrafish Model for the Developmental Effects of Hypoxia on Survival and Behavior

3RD

Hiral Milind Chavre (George W. Hewlett High School)

George W. Hewlett High School

NMDA Receptor Mutation and KCC2 Inhibition Induce Changes in Brain Development Associated with Neurodevelopmental Diseases

H.M

JIn Ko (Commack High School)

Commack High School

Behavioral Analysis on the discrepancies in Circadian Rhythms of Drosophila melanogaster and its mutational counterparts

H.M

Devaanshi Kawatra (Bethpage High School)

Bethpage High School

Investigating the Role of Sunlight in Regenerating Planarians

Behavioral and Social Sciences

1ST

Mikayla Schwartz (Paul D. Schreiber High School)

Paul D. Schreiber High School

Occupational Stress and Mental Health Outcomes among the Emergency Medical Services Population

1ST

Elif Koch (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Impacts of Levodopa and Traditional Medicines on the Locomotion of Alpha-Synuclein Caenorhabditis elegans

1ST

Holy Mary Zaher (Smithtown High School East)

Smithtown High School East

The Correlation Between Peroxisome Levels and Short-Term Memory Loss in a PINK1 -/- Rat Model of Parkinson's Disease

2ND

Zachary David Kam (Syosset High School)

Syosset High School

Transformative Transactions: An Analysis of Factors Affecting ESG and Impact Investing Behaviors

2ND

Sabrina Guo (Syosset High School)

Syosset High School

Differential Emergency Contraceptive Use Among Young Women in the United States from 2006 to 2019

2ND

Jacob Aaron Leshnower (Half Hollow Hills East)

Half Hollow Hills East

Employing the Open Fifth to Determine Emotional Bias in Music's Major-Minor Dichotomy

3RD

Jonathan Zhang (Commack High School)

Commack High School

Differential Diagnosis of Sleep Disorder Subtypes with Neural Aperiodic Components

3RD

Margaret H. Lin (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Effect of Eco-Labeling Methods on Food Packaging on Consumer Health Halos

3RD

Sara Rosenbaum (Roslyn High School)

Roslyn High School

The Effect of Image Manipulation on Social Comparison, Body Satisfaction, and Self-Esteem

H.M

Sydney Flisser (Paul D. Schreiber High School)

Paul D. Schreiber High School

Verb Learning With and Without Modifiers in Autistic Toddlers

H.M

Rena Geula (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

Comparison of Human Social Brain Activity During Eye-Contact With Another Human and a Humanoid Robot

H.M

Samantha Altieri (Valley Stream North High School)

Valley Stream North High School

Analyzing Adult Political Opinion Through Alternative Characterizations of the January 6th, 2021, Capitol Attack

H.M

Zainab Razia (Valley Stream South High School)

Valley Stream South High School

Differences in the Emotional Interpretation of Whole-Body Expressions based on Immigrant Status and the Role of Cognitive and Affective Empathy.

Bio Chemistry and Bio Medial Engineering

1ST

Natalia Pahlavan (Jericho High School)

Jericho High School

Bidirectional 12-lead Electrocardiogram and Electrogram Reconstruction Using a Cycle Generative Adversarial Network

2ND

Alex L Wang (Syosset High School)

Syosset High School

Spatially Multiplexed Gold Leaf Electrodes for Affordable Pathogenic Detection

3RD

Amber Sun (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Neuroprotective Effects of Red Raspberry Extract and Broussonetol B in Alzheimer's Disease Models

H.M

Abigail Smith (Paul D. Schreiber High School)

Paul D. Schreiber High School

Skin Cancer Detection with Raspberry Pi and TensorFlow

H.M

Alice Tianxin Wang (Half Hollow Hills East)

Half Hollow Hills East

A novel general method for in-liquid atomic force microscopy and near-field optical microscopy of photosensitive proteins

Biomedical and Health Sciences

1ST

Jake Ethan Konigsberg (Roslyn High School)

Roslyn High School

Investigating the Anti-Inflammatory Effects of Famotidine

1ST

Natasha Kulviwat (Jericho High School)

Jericho High School

Claudin-5: A Novel Biomarker of Blood-Brain Barrier Breakdown to Predict and Prevent Suicide

2ND

Andria Chen (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Investigating Genetic and Biological Differences between African American and Caucasian Endometrial Cancer Patients

2ND

Benjamin Nyein Punzalan (Manhasset High School)

Manhasset High School

Crosstalk between Alzheimer's disease and SARS-CoV-2 infection is mitigated by ginkgolides A and B in HTB-11 and U937 cell models

3RD

Alexis Lauren Alfasi (Oceanside High School)

Oceanside High School

The Effects of Mevastatin on 3p Loss and 3q Chromosome Gain

3RD

Emelie Jada Nguyen (Roslyn High School)

Roslyn High School

Global DNA Methylation Profiles of WTC-Associated Breast and Prostate Cancer Tissue

H.M

Amanda Gail Liswood (Roslyn High School)

Roslyn High School

Effects of Cytokines on Lacrimal Gland Myoepithelial Cell Contractile Ability

H.M

Grace Motta (Elwood - John H. Glenn), Alexandra Nicole Ebanks (Harborfields High School)

Elwood - John H. Glenn

Examining the Relationship between gC1qR and the PD-1/PD-L1 Axis in Hepatitis-C, HIV-1, and Cancer Cells.

H.M

Aleeza Naeem Mughal (Plainedge High School)

Plainedge High School

An Examination of the American Smile: An Analysis of Dental Attendance Disparity Factors

Cellular and Molecular Biology

1ST

Lucas Evan Sher (Jericho High School)

Jericho High School

Rethinking Pancreatic Ductal Adenocarcinoma (PDAC) Prognosis: Analysis of KRAS-dependent Biomarkers Across Subtypes

2ND

Miah Margiano (St Anthony's High School)

St Anthony's High School

Spontaneous Regression in Neuroblastoma: Analysis of Prognostic lncRNAs

3RD

Dana Kagan (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Employing CRISPR Cas9 editing to correct the Δ F508 mutation of the Cystic Fibrosis Transmembrane Conductance Regulator Gene

H.M

Addison Miles Klebanov (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

Evaluating the Effect of β -II Spectrin Knockout on Pyruvate Kinase Molecule 2 Expression and Hepatocellular Carcinoma Development

H.M

Amelia Ilyse Abell (Paul D. Schreiber High School)

Paul D. Schreiber High School

Analyzing the interaction between HRAS, STAT3 and LRPPRC in the mitochondria

Chemistry and Material Science

1ST

Vincent W. Huang (Syosset High School)

Syosset High School

An advanced computer app for simulating white-beam diffraction Laue patterns ?in modern X-ray crystallography?

2ND

Jolene Hanying Cao (Smithtown High School East)

Smithtown High School East

Periodic Arrays of PDMS for Light-Driven Reversible Printing and Encryption

3RD

Ericka Lai (Manhasset High School)

Manhasset High School

Phosphorylation of Cellulose Nanofibers for Ammonium Adsorption

H.M

Asfar Chaudhry (West Islip High School)

West Islip High School

Elemental Analysis of Lichens Through Tender Energy X-ray Spectroscopy

H.M

Hannah Helen Van Son (Cold Spring Harbor High School)

Cold Spring Harbor High School

The Mechanosynthesis of Yb³⁺ Doped CsPbCl₃.

Computational Biology and Bioinformatics

1ST

Kevin Zhu (Jericho High School)

Jericho High School

Micro-Changing Short Tandem Repeats: Investigating A Novel Genomic Factor of Polymorphism in 10 Human Cancers

2ND

Camryn Marisa Neches (Paul D. Schreiber High School)

Paul D. Schreiber High School

The Identification and Analysis of Novel TP53 Hotspots and p53 Protein Structures

3RD

Alexandre Tourneux (George W. Hewlett High School)

George W. Hewlett High School

The Annotation of Novel Datasets for the Training of Cellori (Cell Origin) Spots, a Deep Learning Algorithm for RNA FISH Spot Detection

H.M

Reed Matthew Paltrow (Paul D. Schreiber High School)

Paul D. Schreiber High School

Online Machine Learning of Platelet Dynamics via Massive Multiscale Modeling

H.M

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

William A. Shine Great Neck South High School

Deep Learning Accelerated Lattice-Boltzmann Simulations for Multiscale Modeling of Thrombosis

Earth and Environmental Sciences

1ST

Joseph Daniel Sciotto (Ward Melville High School)

Ward Melville High School

Laboratory studies of X-ray amorphous phases: Constraining the amorphous components in Martian Soils and Rocks

1ST

Kevin Mauricio Leal (Brentwood High School)

Brentwood High School

Cost-Effective Air Quality Monitoring Using Readily Available Programming Interfaces

1ST

Emma D Fallon (West Islip High School)

West Islip High School

Analysis of Microplastic Compositions in Salt and Freshwater on the South Shore of Long Island

2ND

Christina Ziccardi (Kings Park High School)

Kings Park High School

Projected spatial overlap of Brevoortia tyrannus with BOEM Wind Farm Lease Areas in the New York Bight as influenced by time and water temperature changes

2ND

Megan Cheng (Herricks High School)

Herricks High School

Normalized Difference Vegetation Index and Gross Primary Productivity: Predicting Biogenic Carbon Fluxes in the New York City Metropolitan Area

2ND

Gabrielle Hope Geller (Lynbrook Senior High School)

Lynbrook Senior High School

The Effects of Ocean Acidification and Different Plastic Substrates on the Abundance of Pathogenic Vibrio in the Plastisphere

3RD

Sophia Davis Marchioli (North Shore High School)

North Shore High School

The Morning Cup of Joe is in Danger: A climate assessment of Ethiopia, Kenya, Tanzania, and Uganda in relation to coffee

3RD

Zoe Naree Chinda (Bethpage High School)

Bethpage High School

Minimizing Nitrogen Fertilizer Use for Residential Lawns

3RD

Michelle Yu (North Shore High School)

North Shore High School

Don't Count Your Styela plicata Eggs Before They Hatch: The Impact of Salinity on Fertilization

H.M

Skye Louise Tanzmann (East Hampton High School)

East Hampton High School

Estimating Oyser Reef Clearance Rates and Evaluating Reef Mortality

H.M

Ryan Matthew Guzman (Kings Park High School)

Kings Park High School

Using Artemia salina as a model to observe the effect of acidification on a marine ecosystem.

H.M

Parisa Pitiranggon (Bethpage High School)

Bethpage High School

The Effects of Fertilizers with Different Levels of Element Content on Soil pH

Embedded Systems, Robotics and Intellectual Machines and System Software

1ST

Imran Karim Gangat (Syosset High School)

Syosset High School

A Novel Reinforcement Learning-Based Neural Network for Stock Portfolio Management

2ND

Samay Lakhani (Jericho High School)

Jericho High School

Fusing ConvNeXt and Histogram of Oriented Gradients (CNHOG) for Modular and Efficient Driver Distraction Detection

3RD

James Nagler (Garden City High School)

Garden City High School

Project Shadow - Custom Wireless Student Safety Tracker For Schools

H.M

Anagh Gupta (Smithtown High School East)

Smithtown High School East

Computational Modeling of Pedestrian Traffic Flow in a Suburban High School

H.M

Mannat Vikramaditya Jain (Garden City High School)

Garden City High School

Using Machine Learning to Translate Sign Language Gestures into Text and Speech

Engineering: Sustainable Energy and Engineering Technology

1ST

Emily Theodosopoulos (Manhasset High School)

Manhasset High School

Production of Plasma-Enhanced SiO₂ films for optimizing photovoltaic cells

2ND

Egan Robert Barzilay (East Hampton High School)

East Hampton High School

Time-Averaged Flow Field Prediction Of Wind Turbine Wakes Using Autoencoder Convolutional Neural Networks

3RD

Manav Gupta (Manhasset High School), William Charles Wesson (Manhasset High School)

Manhasset High School

Application of Piezoelectrics to Solar Cells to Optimize Energy Harvesting Abilities via Exposure to Varying Weather Conditions

H.M

Chelsea Lim (Manhasset High School)

Manhasset High School

Optimizing the Conversion Efficiency of Dye-Sensitized Solar Cells Using Chlorophyll and Anthocyanins

H.M

ivy li (The Stony Brook School)

The Stony Brook School

Analysis and Design of Biomorphic Snake Robot

Environmental Engineering

1ST

Sofia Eliza Maciel-Seidman (Bethpage High School), Riya Saha (Bethpage High School), Joy Kim (Bethpage High School)

Bethpage High School

Developing a Hydroponic System With The Incorporation of an Arduino Uno Powered pH Sensor

2ND

Ankur Raghavan (Bethpage High School)

Bethpage High School

Reduction of Agricultural Water Consumption through the Utilization of a Wireless Sensor Array

3RD

Ashley Lam (Herricks High School)

Herricks High School

Novel Zinc Oxide/Nanocellulose Composite as a Low-Cost Photocatalyst for Water Purification

H.M

Dylan Yoon (Manhasset High School), Emily Zhao (Manhasset High School)

Manhasset High School

Sustainable Sargassum Supercapacitive Microbial Desalination Fuel Cell for Improved Bioelectricity Production and Simultaneous Desalination

H.M

Shaan Merchant (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Plant Guardian: Hybrid Drone System and Deep Learning Approach to Plant Disease Classification

Math, Physics and Astronomy

1ST

Yida Pan (William A. Shine Great Neck South High School), Luke Huang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

VaSt-ID: Novel Application for Variable Star Identification and Classification using Machine Learning

2ND

Kailly Elizabeth Nocera (Seaford High School)

Seaford High School

An Analysis of Exoplanets WASP-33b, WASP-3b, CoRoT-8b, and HAT-P-32b Using the Transit Method

3RD

Brandon David Berkoff (Commack High School)

Commack High School

Lunar Water Content as Determined by Crater Feature Analysis

H.M

Miraj Ketan Shah (Bethpage High School)

Bethpage High School

The Impact of New Base Size on Major League Baseball Outcomes

H.M

Viti Chandra (Half Hollow Hills West)

Half Hollow Hills West

Quantum Computing for Rotating, Charged, de Sitter, and String Black Holes

Microbiology

1ST

Sammer Soliman (John F. Kennedy High School)

John F. Kennedy High School

Pioneering Microbial Communities and Biofilm Succession on Plastic in a New York City Waterway

2ND

Jacob Tyler Gross (Roslyn High School)

Roslyn High School

In Vitro Analysis Reveals Synergistic Interactions Among SARS-CoV-2 Neutralizing Antibodies

3RD

Riley J Fowler (Lynbrook Senior High School)

Lynbrook Senior High School

Establishing the Connection Between the Twin-Arginine Translocation A1 and Twin-Arginine Translocation A2 Protein Pathways in Acinetobacter baylyi as a Model Organism

H.M

Grace YS Na (Syosset High School)

Syosset High School

Antibacterial Activity of Spice Essential Oils Against Escherichia coli

H.M

Cooper Alan Ceva (East Hampton High School)

East Hampton High School

The Effect of pH on Growth and Hydrocarbon Metabolism of Alcanivorax Borkumensis sk2

Plant Sciences

1ST

Jack C Schultz (Westhampton Beach High School)

Westhampton Beach High School

Alteration in Concentration and Spatial Distribution of Selenium, Copper, and Essential Physiological Micronutrients in Saccharina Latissima in a Dose-Response to Carbon Dioxide.

2ND

Tyler Logan Bissoondial (John F. Kennedy High School)

John F. Kennedy High School

Isolation and Characterization of a Class III High-Affinity Potassium Transporter (HKT) in the Seedless Vascular Fern Ceratopteris richardii

3RD

Landon Asher D'Agate (Half Hollow Hills East)

Half Hollow Hills East

Seed Priming with Melatonin Improves Drought Tolerance in Maize

H.M

Jessica Donna Penna (Smithtown High School East), Sanjivani Singh (Smithtown High School East)

Smithtown High School East

Reducing Nitrogen Pollution from Chemical Fertilizers Through the Implementation of Nitrogen-Fixation-Inducing Bacillus subtilis

H.M

Mikayla Joseph (George W. Hewlett High School)

George W. Hewlett High School

Orthologue of Root Hair Defective 3 (RHD3) in Ceratopteris richardii is affected by DNA Methylation and Regulates Rhizoid Development in Gametophytes

Translational Medical Science

1ST

Yifu Zuo (William A. Shine Great Neck South High School), Richard Li Xu (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

FetA.I.: A novel fetal health classification program using soft voting with deep and ensemble learning

2ND

Ty Michael Gelman (John F. Kennedy High School)

John F. Kennedy High School

The Concurrent Effects of Dietary Restriction and Exercise on a Drosophila melanogaster Model of Spinal Muscular Atrophy

3RD

Rhea Sakaria (Jericho High School)

Jericho High School

Identifying a Potent Wnt Compound to Enhance Stemness Post-Radiation through Activating the Canonical Wnt Signaling Pathway

H.M

Anna Louise Rohring (Commack High School)

Commack High School

ssPERG Parameters Associated with Visual Field Global Indices and OCT Thickness Measurements in Glaucoma Suspects

H.M

Xinyi Zhang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Alpha-lipoic acid treatment of Drosophila melanogaster as a novel therapeutic method targeting mTOR-associated cognitive deficits in Fragile X Syndrome

Plant Sciences

1ST

Leah Irene Fromm (East Hampton High School)

East Hampton High School

Growth promotion of hydroponic Lactuca sativa var. capitata and microgreen Raphanus sativus when exposed to Pseudomonas psychrotolerans consistently throughout the growth period

2ND

Jessica Mary Curran (Westhampton Beach High School)

Westhampton Beach High School

The Efficacy of Rhodophyta as a Seaweed Liquid Fertilizer through Okra and Arabidopsis Growth, Pigment Concentration, and Macronutrient/Micronutrient Distribution Using Tender Energy Spectroscopy

2ND

Lilly Sarah Horowitz (Jericho High School)

Jericho High School

The Role of DNA Methylation as an Epigenetic Silencing Mechanism of Ds1 and Ds2 Transposition in Maize

3RD

Ariella Joy Golbin (George W. Hewlett High School)

George W. Hewlett High School

Regulation of Mitogen-activated Protein Kinase Kinase 7 (MKK7) affects salt tolerance in the gametophytes of Ceratopteris richardii?

3RD

Meredith Margaret Browne (East Hampton High School)

East Hampton High School

Influence of mycorrhizal inoculants on mass, and water uptake in Lactuca sativa var. capitata under salt stress

H.M

Samuel Hsu (George W. Hewlett High School)

George W. Hewlett High School

A Matrix Metalloproteinase (MMP) Regulated By Salicylic Acid (SA) And Lipopolysaccharide (LPS) Plays An Integral Role In Prothallial Development Of Gametophytes Of Ceratopteris richardii

H.M

Cameron Oliver Mitchell (East Hampton High School)

East Hampton High School

Influence of common chemical phosphorus and nitrogen fertilizers with mycorrhizal fungi Rhizophagus and Glomus families on the growth of Pisum sativum legumes.

Animal Sciences

1ST

Kaitlin Kaiting Ho (North Shore High School)

North Shore High School

Cocoa's Cognitive Triumph: The Rescue of the Alzheimer's Model of Drosophila melanogaster with Theobroma cacao Supplementation

1ST

Katherine Lee (Jericho High School)

Jericho High School

C-Fos and Reelin Protein Localization: Brain Fluorescence Imaging of Activity Pathways in Mice During Sensory Behavior Tasks

2ND

Nicole Lynn Yeroushalmi (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

The Effect of Diet on Galleria mellonella Larvae's Resistance to Bacillus thuringiensis

3RD

Kayla Palumbo (Sacred Heart Academy)

Sacred Heart Academy

CAN MODERN BLUE LIGHT-BLOCKING TECHNOLOGY EFFECTIVELY SHIELD DROSOPHILA MELANOGASTER FROM HARM?

3RD

Yasmeen Antonia Muñoz (Paul D. Schreiber High School)

Paul D. Schreiber High School

Host Preference of the Spotted Lanternfly, Lycorma delicatula (Hemiptera: Fulgoridae), Throughout its Life Cycle: A Citizen Science Observational Analysis

H.M

Margit Tess Romero (Paul D. Schreiber High School)

Paul D. Schreiber High School

Estimating the Density of the Endangered Agile Gibbon (Hylobates agilis) Using Passive Acoustic Monitoring

H.M

Brenton Lee (Syosset High School)

Syosset High School

The Effects of Astragalus membranaceus Derivatives on the Prevention of Neuron Degeneration Caused by Amyotrophic Lateral Sclerosis in C. elegans and Computational Protein Software

Embedded, Technology Arts, Technology Engineering, and Energy Sustainability

1ST

Michelle Luo (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Anisotropic Ion Transport Properties of Thin-Film Solid Polymer Electrolytes

1ST

James Nagler (Garden City High School)

Garden City High School

Project Vision - Assisted Navigation & Waypoint Positioning through 3D Mapping

2ND

Dylan Ann Cashin (East Hampton High School)

East Hampton High School

Saccharina latissima in biofuel production: Identifying the ideal water conditions and their effect in biofuel production through a chemical extraction method

3RD

Sarah Phinney (Garden City High School)

Garden City High School

Using an Intraoral Scanner to Extract and Evaluate Contours of Oboe Reeds

H.M

Vincent W. Huang (Syosset High School)

Syosset High School

An Aerodynamic Analysis of Blended-Wing Body Aircraft with Nonplanar Wing Geometry

Earth and Environment with Environmental Engineering

1ST

Yoav Zeev Muscal (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Using Machine Learning Species Distribution Modeling as a Novel Approach to Efficiently Predict Forest Development Suitability

1ST

Dylan Yoon (Manhasset High School)

Manhasset High School

The Enhancement of a Novel 3D-Printed Electrodialysis Device through the Implementation and Optimization of Spacer Designs

1ST

Manfred Lim (Jericho High School)

Jericho High School

From Data to Insights: Understanding Global Soil Respiration Through Machine Learning

2ND

Allison Chen (Herricks High School)

Herricks High School

The Accelerated Retreat of Andean Glaciers: Using Google Earth Engine and Landsat Satellite Imagery to Quantify the Imminent Threat to Water Security in Andean Communities

2ND

Shuwei Chen (Manhasset High School), Sonali Patel (Manhasset High School)

Manhasset High School

Adapted Algae-Powered Photovoltaic Cells Remediate Microplastics From Water: A Cost-Effective and Sustainable Solution

2ND

Gunoo Shin (Smithtown High School West)

Smithtown High School West

Erosia: A Fully Digitally Focused Application to Accurately Compute Soil Erosion in a Raster Format via GIS Based on the Universal Soil Loss Equation.

2ND

Bradley Scott Kelton (Ward Melville High School)

Ward Melville High School

Geochronologic and Dynamic Constraints on the Topographic Evolution and Critical Mineral Deposits of the Southwestern United States

3RD

Andrew Michael Falco (Walter G. O'Connell Copiague High School)

Walter G. O'Connell Copiague High School

The Use of Pueraria montana in the Production of a Biodegradable Low Density Polyethylene Plastic

3RD

Emily Zhao (Manhasset High School)

Manhasset High School

Novel Eutrophication Remediation Turbine For Piezocatalytic Inactivation Of Anabaena In Optimized Turbulent Flow

3RD

Dylan Jinghong Shen (Smithtown High School East)

Smithtown High School East

A Novel Algorithm for Measuring Forest Incursions Using Pixelated Remote Sensing Data

3RD

Tej Jonah Parekh (Paul D. Schreiber High School)

Paul D. Schreiber High School

Utilizing Artificial Intelligence for Categorizing Wildfire Origins through Satellite Image Analysis

3RD

Yujay An (Ward Melville High School)

Ward Melville High School

Understanding the Predictability of the U.S. Seasonal Surface Temperature with Convolutional Neural Networks Trained on CESM2 LENS

H.M

Oscar Wang (Syosset High School)

Syosset High School

Scale-Invariance of Trait Distribution Patterns in Tropical Trees: Consistency Across Spatial Scales

H.M

Alenna Lin (Ward Melville High School)

Ward Melville High School

AOP (Advanced Oxidation Process)/ARP (Advanced Reduction Process) for PFAS in Water Systems

H.M

Grace Kathryn Orr (Westhampton Beach High School)

Westhampton Beach High School

*Calcium Hydroxide Enhances the Adaptive Ability of Coral Species *E. Ancora*, *D. Actinodiscus*, and *M. Capricornis*, Exposed to Decreased pH and Elevated Temperatures in an Ocean Simulated Environment*

H.M

Bethany Marie Kosinski (Valley Stream South High School)

Valley Stream South High School

The Effect of Increased Oxygen and Temperature on Microalgae's Ability to Remove Phosphorous and Nitrogen From Water Samples

Cellular and Molecular Biology with Biomedical Engineering

1ST

Ava Brooke Goldsmith (John F. Kennedy High School)

John F. Kennedy High School

Targeting of Epichaperome Downregulates HCFC1 Mediated Transcription of Oncogenes: Implications in Breast Cancer Therapy

1ST

Rishi Aravind (Half Hollow Hills East)

Half Hollow Hills East

A Novel Role for αIIbB3 in the Development of Procoagulant Platelets via Phosphatidylserine (PS) Exposure

2ND

Madeline Ella Rong (The Wheatley School)

The Wheatley School

Investigating the Impacts of Dasatinib, Resveratrol and Gallic Acid on Non-Hodgkin's Lymphoma Cell Proliferation

2ND

Anjali Anand (Jericho High School)

Jericho High School

Fli1 and Galectin-3: Targets to Reduce Collagen Accumulation in Scleroderma.

3RD

Hannah Rubin (Manhasset High School)

Manhasset High School

Assessing the quality of 5% GelMA bioink

3RD

Aasiya Zehra Zaidi (Roslyn High School)

Roslyn High School

Reading the Book of Life, One Palindrome at a Time: Creating Novel Short Palindromic Sequence Detectors and High-Resolution Conservation Tools to Identify Important Sequence in C. elegans

H.M

Sahil Nilesh Patel (St Anthony's High School)

St Anthony's High School

Unraveling a Circrna-Mirna-Mrna Axis: A Potential Therapeutic Target for Non-small Cell Lung Cancer

H.M

Aafia Ahmed (Elmont Memorial)

Elmont Memorial

Investigating the JAK2/STAT3 Signaling Pathway in Methylmercury-Induced Toxicity in Mouse Astrocyte Neuronal C8-d1a Cell Line

H.M

Ishana Chadha (Commack High School)

Commack High School

The Effect of Metal Toxicity Induced mtDNA Mutations on Parkinson's Disease Pathology in Model Organism C. elegans

Behavioral and Social Sciences

1ST

Stasya Selizhuk (Half Hollow Hills East)

Half Hollow Hills East

Design of Generic Epinephrine Auto-Injector Minimizes Administration Error and Fingertick Injury

1ST

Syon Khatter (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Investigating Impacts of Sucralose on Hedonic Feeding Behaviors in C. elegans as a Model for Prevention and Treatment of Obesity and Eating Disorders

2ND

Ryan Joon Yong Lee (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Investigating the Effects of Emotional Parent-Child Communication and Perceived Parental Acculturation on the Coping-Self Efficacy of Adolescents

2ND

Ashley-Ann Vinece Francis (Valley Stream South High School)

Valley Stream South High School

Childhood Environment & Maternal vs. Paternal Role in Food Addiction Development: A Cross-Cultural Study

3RD

Matthew Wang (Jericho High School)

Jericho High School

Elucidating Adolescent Mental Health via Social Determinants of Mental Health Clusters

3RD

Holly Rae Sternlicht (Paul D. Schreiber High School)

Paul D. Schreiber High School

Investigating the Influence of Closed Captions on Viewers' Advertisement Experience

3RD

Eli Joshua Weseley-Jones (North Shore High School)

North Shore High School

Improving Understanding of Conditional Probability in Medical Screening Tests

H.M

Damariz Irene McCrae (Plainedge High School)

Plainedge High School

Predicting GOP Voter Preferences Through Sentiment, Polarity, and Word Cloud analyses of Political Rhetoric from The 2023 GOP Primaries; Implications on the Democratic Process

H.M

Hannah Isabelle Rosenberg (Paul D. Schreiber High School)

Paul D. Schreiber High School

Christian Nationalism, Anti-Semitism, and Attitudes Toward the War in Ukraine

Microbiology and Biochemistry

1ST

Mehek Kaur Sawhney (Commack High School)

Commack High School

Secretion of the Francisella tularensis Protein FTL_1123 by Escherichia coli Containing the HlyBD Operon

2ND

Kiran Kaur Johar (Jericho High School)

Jericho High School

Determination and Analysis of Apolipoprotein-L1 Binding Site Nature with Partnering Isoforms to Treat APOL1-Mediated Kidney Dysfunction

3RD

Jayden Tucker Simon (John F. Kennedy High School)

John F. Kennedy High School

The Utilization of Metagenomics to Determine the Effects of Plastic Polymer Types and a Temporal Gradient on Microbial Communities

H.M

Zoe Naree Chinda (Bethpage High School)

Bethpage High School

Evaluating the Effects of Plasmid Copy Number and Size on Bacterial Host Cell Fitness

H.M

Nicole Kiaei (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

The Binding Affinity of Python-Derived 16 α -Hydroxylated Bile Acid 'Pythocholic Acid' to Human Bile Acid Receptors TGR5, FXR, and VDR

Robotics, Intelligent Machines and Software

1ST

Milan Lustig (Cold Spring Harbor High School)

Cold Spring Harbor High School

A Configurable Compiled Programming Language With Integrated Transpilation

2ND

Marcus Wu (Manhasset High School)

Manhasset High School

Optimizing Measurement Error Mitigation to Account for Cross-Talk Errors in Superconducting Quantum Computers

3RD

Alexander Y Xu (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

CARe-BERT: BERT-Powered Graph Augmentation for Context-Aware Radiology Report Retrieval

H.M

Zabelle Bobelian (Cold Spring Harbor High School)

Cold Spring Harbor High School

Deep Neural Nets for Imaging Systems

H.M

Alex Lu (Manhasset High School), Johnny Liu (Manhasset High School)

Manhasset High School

Context Is All You Need: Learning Context-Based Emotional Nuances From Uncontextualized Labels

Math, Physics and Astronomy

1ST

Arav Chand (Half Hollow Hills West)

Half Hollow Hills West

Extensions of Legendre's Formula and Fine's Theorem to the Fibonacci Factorial

2ND

Nora Kathleen Kane (Lynbrook Senior High School)

Lynbrook Senior High School

Analysis of Fourier Transforms Using a Combined Encoder-Decoder and Deep Neural Network Model: A Novel Method for Determining Chromaticity

3RD

Cayden Shen (Roslyn High School)

Roslyn High School

Using an Inexpensive Night Vision Camera as a Detector in NIR Spectroscopy

3RD

Benjamin Hongxuan Zhang (Ward Melville High School)

Ward Melville High School

Emulating Quenching in Galaxy Groups Using High-Resolution Cosmological Simulations

H.M

Ethan Cole Berkowitz (Roslyn High School)

Roslyn High School

The Strength of p -Coloring as a Knot Invariant

H.M

Tiffany Zhang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Resolving the Constraints Imposed by Chiral Effective Field Theory and Perturbative Quantum Chromodynamics on the Neutron Star Equation of State

Chemistry and Material Science

1ST

Samyra Mahiba (Jericho High School)

Jericho High School

DNA Crystallography: Exploring Small-Molecule Interactions With DNA for Nanoscale Drug Delivery

2ND

Jolene Hanying Cao (Smithtown High School East)

Smithtown High School East

Synthesis of Stable and Magnetically Tunable Cesium Lead Halide Perovskite Quantum Dots by Nano-Encapsulation

3RD

Derek Zhang (The Wheatley School), Ashley Huang (Syosset High School)

The Wheatley School

The Impact of Titanium Dioxide Nanoparticles on Keratinocyte Proliferation and Differentiation

H.M

Dylan Dale Butler (George W. Hewlett High School)

George W. Hewlett High School

Synthesis of N2, N4-Disubstituted quinazoline-2,4-diamine Derivatives as inhibitors of Adenosine/Guanosine Nucleoside Hydrolase in Trichomoniasis

H.M

Aman Thawani (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Computational Solution of the Time-Independent Schroedinger Equation via a Finite Legendre Polynomial-based Spectral Expansion

Translational Medical Science

1ST

Sophia Antonina Tarasenko (Jericho High School)

Jericho High School

Effects of Calcitriol on Menstrual Effluent-Derived Endometrial Stromal Cell Viability, Decidualization, and Proliferation

2ND

Caden Li (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Automated Volumetric Biomarker Segmentation and Combination for Superior ADPKD Progression Prediction using Machine Learning

3RD

Alex Chen (Syosset High School)

Syosset High School

Evaluating the Neuroprotective Effects of Spearmint Oil in the Caenorhabditis elegans Model of Alzheimer's Disease

H.M

Amy Hong Xiao (Garden City High School)

Garden City High School

A Novel Approach to Characterizing Pathogenicity of SLC25A13 Variants in Patients with Citrin Deficiency

H.M

Jonathan Zhu (Carle Place High School)

Carle Place High School

Exploring the Potential Synergistic Antitumor Effect of L-Se-Methylselenocysteine and Sulforaphane on Human Cancer Cell Lines

Computational Biology and Bioinformatics

1ST

Tessla Chan (Roslyn High School)

Roslyn High School

Utilizing Deep-Learning to Facilitate Diagnosis of Look-Alike Leukemia Subtypes

2ND

Mannat V. Jain (Garden City High School)

Garden City High School

A Deep Learning Algorithm to Identify and Predict Tissue Abnormality in Fetal Ultrasounds.

3RD

Michael Ren (Syosset High School)

Syosset High School

Elucidating Resistance Mechanisms in Staphylococcus epidermidis: A High-Performing MALDI-TOF MS-Based Proteomic Approach for Predictive Modeling

H.M

Erin Wong (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Predicting Lobula Columnar Cell Responses in Drosophila

H.M

Matt Yang (W.C. Mepham High School)

W.C. Mepham High School

MultiFormer: Single-Cell ATAC to RNA Prediction Framework

Biomedical and Health Sciences

1ST

Natasha Kulviwat (Jericho High School)

Jericho High School

CLDN5 Downregulation and Albumin: Investigating Hallmarks of Blood-Brain Barrier Breakdown as Novel Biomarkers of Suicide Neuropathology

1ST

Alena Tsai (Manhasset High School)

Manhasset High School

Integrated In-silico and In-vitro Experimental Strategies for the Application of Carbon Quantum Dots in Alzheimer's Research

2ND

Griffin Hon (Syosset High School)

Syosset High School

Evaluating Differential Nutritional Regulation of Stem Cell Plasticity

2ND

Hiuyi Cheng (Herricks High School)

Herricks High School

Evaluating Border Associated Macrophages: A Novel Approach to Investigating Cerebral Blood Flow Dysregulation in APOE4 Mice

3RD

Alaina Brooke Pinto (The Wheatley School)

The Wheatley School

Microscopy of Claudin and Occludin Internalization in Brain Endothelial Cells After IL-32 Stimulation.

3RD

Rebecca Bover (Herricks High School)

Herricks High School

The Novel Effect of Rosuvastatin on Cholesterol 25-Hydroxylase (Ch25h) Oxysterol Metabolism and IL-6 in Response to LPS and ssRNA40 Stimulation

3RD

Shayla Zheng (Roslyn High School)

Roslyn High School

Cell Fusion as a Novel Mechanism Behind JQ1 Resistance in Triple-Negative Breast Cancer

H.M

Ashna Muni (Herricks High School)

Herricks High School

A Novel Prognostic Assessment of an Anti-tumor Biomarker: An in silico Analysis of Tumor Infiltrating Lymphocytes in Melanoma

H.M

Evalina Lentini (Sacred Heart Academy)

Sacred Heart Academy

Evaluation of Therapeutics to Target γ Stem Cell-Like Prostate Cancer

Behavioral and Social Sciences

H.M

Sarah Sun (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Cognitive Differences in the Optimization of Entrepreneurial Constructs and Opportunity Exploitation in Experienced vs. Novice Entrepreneurs

Earth and Environment with Environmental Engineering

H.M

Stephanie Pizano (Brentwood High School)

Brentwood High School

The Development and Assessment of Anionic Resins for the Use in Mitigating Nitrogen in Sewage Drains and Agricultural Runoff

Behavioral and Social Sciences

H.M

Alexandra Kanner (Roslyn High School)

Roslyn High School

The Effect of Logo and Board Representation on Perceptions of Autism Advocacy Organizations

Biomedical and Health Sciences

H.M

Lillian Wu (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

Developing an Organoid Model Using Mouse Intestinal Stem Cells To Examine the Effect of Retinoic Acid on Inflammatory Bowel Disease

Animal Sciences

1ST

Alexandra Claire D'Alessio (Half Hollow Hills West)

Half Hollow Hills West

The Adverse Effects of Hunting on the Length of Bellows of American and Canadian Bison During Rut

2ND

Nicholas Borruso (Westhampton Beach High School)

Westhampton Beach High School

Assessment of the Behavioral Impacts of PFAS on Danio rerio

2ND

Jack Ryan Levitt (John F. Kennedy High School)

John F. Kennedy High School

The Supplementation of Probiotics via Yogurt Ameliorates Parkinson's Disease Phenotypes in a Drosophila melanogaster Model

3RD

Ishana Chadha (Commack High School)

Commack High School

The Role of Oligophrenin1 and Pcsin2 in Modulating Radial Migration of Pyramidal Neurons During Brain Development

3RD

Evelyn Taylor Caputo (Wantagh High School)

Wantagh High School

A Survival Analysis into the Interactions between Cardenolide-Toxic Milkweed and the Invasive Spotted Lanternfly

H.M

Emilia Marie Miranda (West Islip High School)

West Islip High School

Analyzing Microplastic Quantity and Chemical Composition in Farm-Raised vs Wild-Caught Shrimp for Human Consumption Using Infrared Spectroscopy

H.M

Emaan Tehseen (Elmont Memorial)

Elmont Memorial

Genetic interactions characterizing gene functions downstream of oncogenic GNAQ signaling in Uveal Melanoma using Drosophila melanogaster

H.M

Jasmine Liu (Syosset High School)

Syosset High School

Analysis of the Flavonoid Corylin's Impact on Aging in C. elegans

Behavioral and Social Sciences

1ST

Chloe Yerin Lee (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Exploring the Effects of Cannabidiol-Medium Chain Triglyceride Oil on Locomotion and Tap Withdrawal Response Using Caenorhabditis elegans as a Model for Alzheimer's Disease?

2ND

Joshua Marc Kleyner (Syosset High School)

Syosset High School

Neural Correlates During Human-Canine Face to Face Interactions

2ND

Michael Benjamin Lyakhov (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

Predicting Schizophrenia via Cognitive Biomarkers: Development of a Machine Learning Algorithm for Early Diagnosis and Accessible Care

2ND

Grace Chenxin Liu (Syosset High School)

Syosset High School

Evaluating Gender Disparities Due to Decision-Making Under Uncertainty in Entrepreneurship: A Panel Data Analysis

2ND

Sadelle Gelman Poulsen (Paul D. Schreiber High School)

Paul D. Schreiber High School

Exploring the Content Themes and Engagement Strategies Employed by First-Time Voters on TikTok

3RD

Nyra Steffini Mehra (Paul D. Schreiber High School)

Paul D. Schreiber High School

Bilingualism, Executive Functions, and COVID-19

3RD

Sarah Nicole Fernbach (Roslyn High School)

Roslyn High School

Relationships Between Racial Socialization, Endorsement of a Racial Colorblind Ideology, and Perceptions of Race-Based Microaggressions Among Young Adults

3RD

Gabriella Elliott (John F. Kennedy High School)

John F. Kennedy High School

The Use of Diagnostic Coding Processes in the Analysis of Verbal Behaviors to Enhance Patient-Provider Connection

H.M

Brice Chiu (New Hyde Park Memorial High School), Harmehar Kaur (Syosset High School)

New Hyde Park Memorial High School

Investigating the Impact of Social Connectivity on Self-Reported Cardiovascular, Cognitive, and Mental Health: A Survey-Based Study

H.M

Ava Ramsey (Roslyn High School)

Roslyn High School

Clever or Conceited? Investigating the Effects of Gender and Self-Promotion on Perceptions of a Potential Employee

H.M

Saswati Bhattacharya (Commack High School)

Commack High School

The Impact of Social Media on the Glorification of Mental Illness Across Age Groups

H.M

Aleeza Dhillon (Valley Stream North High School)

Valley Stream North High School

Investigating the Impact of the Big 5 Personality Traits on Teacher Burnout and Job Satisfaction Among High School Educators

H.M

Garrett Greenberg (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

A Novel Application of Machine Learning to Detect Indicators of Student Depression As a Tool for the Multi-tiered Systems of Support

Biochemistry

1ST

Natalie Osorio (H. Frank Carey)

H. Frank Carey

Biophysical Investigations Into the Structure and Function of Pseudomonas aeruginosa Nitric Oxide Signaling System

2ND

Kevin Liu (Jericho High School)

Jericho High School

Querying the Functional Properties of GEM Mutants Using in vitro FRET and NanoBiT Assays: Implications in Glucose Metabolism Disorders

3RD

Ashka Shah (Jericho High School)

Jericho High School

Regulating Cancerous Hyperactive Wnt Signalling Through a Novel GID8 Mechanism in Drosophila and Human Embryonic Kidney Cells

H.M

Alex Matthew Silbert (Eastport South Manor Junior-Senior High School), Logan Jack Silbert (Eastport South Manor Junior-Senior High School), William Steinacher (Eastport South Manor Junior-Senior High School)

Eastport South Manor Junior-Senior High School

Ballistic Barrage Against Beta Lactamases

H.M

Gabrielle Victoria DeCapua (Connetquot High School), Michael Benedict Fabbri (Connetquot High School)

Connetquot High School

Biomolecular Dynamics of Perfluoroalkyl Pollutants in Complex with Bovine Serum Albumin

Biomedical and Health Sciences

1ST

Sophia Antonina Tarasenko (Jericho High School)

Jericho High School

Effects of Vitamin D Metabolites and Vitamin K2 on Menstrual Effluent-Derived Endometrial Stromal Cell Viability and Decidualization

2ND

Leah Manshu Dong (Paul D. Schreiber High School)

Paul D. Schreiber High School

The Role of Fe-S Cluster Biosynthesis in the Regulation of Fe-S Proteins, Fe-Metabolism, and Downstream Stress Responses In-Vivo

2ND

Aryana Adur (Jericho High School)

Jericho High School

Larazotide Acetate as a Novel Approach to Mitigate Food Allergy-Induced Intestinal Epithelial Cell Lining Damage

3RD

Grace Rose Nolan (St Anthony's High School)

St Anthony's High School

Cell-Type Contributions of the Myrf-1 Gene to Development in Caenorhabditis Elegans

3RD

Ashna Muni (Herricks High School)

Herricks High School

Asymptomatic Intracranial Hemorrhages Correlate with Poor Patient Outcomes and NIHSS Predictivity: A Retrospective Analysis of Post-Thrombectomy Ischemic Stroke Patients

3RD

Abigail Kavinal Rajan (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

A Novel Link Between Chemotherapy-Induced Ryanodine Receptor 2 (RyR2) Dysfunction and Alzheimer's Disease Pathology

H.M

Emily Maria Podolska (West Islip High School)

West Islip High School

Evaluating Herbal Supplements through Mineral Content and DNA Analysis

H.M

Paul Santy (Syosset High School)

Syosset High School

The Effect of Semaglutide Acetate on Lifespan and Reproductive Capacity in Caenorhabditis elegans

H.M

Ryan Matthew Deegan (West Islip High School), Isabella Rose Tussie (West Islip High School)

West Islip High School

Analyzing C. elegans as a Cancer Model using Infrared Microspectroscopy

Biomedical Engineering

1ST

Sandeep Sawhney (Herricks High School)

Herricks High School

Gallium Mediated DNA Tensegrity Triangle Based Crystals: A Novel Prototype Facilitating Gallium Cancer Therapy

2ND

Parshwa Shah (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

A Novel Unobtrusive Silent Speech Recognizer for Patients Suffering From Voice Disorders Using Machine Learning

3RD

Hallie Lee (Herricks High School)

Herricks High School

A Novel Evaluation of Transcatheter Mitral Balloon Valvuloplasty Preprocedural Analysis in Rheumatic Stenosed Patients Broadens Eligibility Through Cardiac Imaging

H.M

Sara Shamail (Garden City High School)

Garden City High School

Development of an Innovative Hydroxyapatite-Agarose Hydrogel Grid to Enhance Bone Stabilization and Regeneration

H.M

Claudia Modica (Kings Park High School)

Kings Park High School

A Comparative Analysis of the Effects of Low Intensity Vibrations on the Tibial and Femoral Properties of a Duchenne Muscular Dystrophy Mouse Model

Cellular and Molecular Biology

1ST

Daanish Bassi (Smithtown High School East)

Smithtown High School East

Assessing Novel RIPK2-MKK7 Interaction Inhibitors in Prostate Cancer Cell Lines

2ND

Lilly Sarah Horowitz (Jericho High School)

Jericho High School

The Effect of Histone Modifications Induced by Ack sRNAs on Ac Transposable Elements

3RD

Aafia Ahmed (Elmont Memorial)

Elmont Memorial

The antioxidant role of JAK2/STAT3 signaling pathway against methylmercury-induced toxicity in a mouse astrocyte neuronal C8-D1A cell line

H.M

Alicia Imani Madjido (Half Hollow Hills East)

Half Hollow Hills East

Conditional elimination of a centriolar protein exhibits stage-specific cell cycle arrest in mouse embryonic fibroblasts.

H.M

Serena J Chen (Herricks High School)

Herricks High School

The Novel Involvement of Peroxisomal Beta-Oxidation During Mitochondrial Inhibition in Catecholamine-Stimulated Acyl-Coenzyme A Oxidase 1 (ACOX1) Knockout White Adipocytes

Chemistry and Material Science

1ST

Lucienne Keyoung (Manhasset High School), Isabel Rose Gonzalez (Manhasset High School)

Manhasset High School

Ag-TiO₂@HNT Nanotubes for Highly Efficient and Eco-Friendly Organic Pollutant Degradation

2ND

Emily Rose Smukler (George W. Hewlett High School)

George W. Hewlett High School

Aptamer-Mediated Biosensing using Self-Assembled DNA Nanomaterials

3RD

Serin Jo (Roslyn High School)

Roslyn High School

Characterization of Novel Amyloid- β ; Peptide Coacervate Release Kinetics and Drug Loading for Doxorubicin

H.M

Richard Chai (Smithtown High School East)

Smithtown High School East

Optimizing the Nitro-Oxidation Process to Convert Lignocellulosic Waste into Fertilizers and Nanocellulosic Materials

H.M

Julang Wang (Friends Academy)

Friends Academy

Magneto-optical effects induced by chiral lattice vibrations in two-dimensional materials

H.M

Liza Sophie Zelkin (Commack High School)

Commack High School

Computational Biology and Bioinformatics

1ST

Erin Wong (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

StAIR: Stepwise All-Atom Iterative Reconstruction of Large Coarse-Grained Protein Structures

2ND

Melody Heeju Hong (General Douglas MacArthur High School)

General Douglas MacArthur High School

A Bayesian Exploration Into More Flexible trans-Methylation Quantitative Trait Locus Mapping

3RD

Tessla Chan (Roslyn High School)

Roslyn High School

Investigating Synthetic Lethality as a Novel Treatment for 9p21.3 Deletion and MSI-H cancers

H.M

Nicholas Tumelty (Waldorf School of Garden City)

Waldorf School of Garden City

Improving kNN: Downsampling & Bootstrapping

H.M

Evan Matthew Kolberg (John F. Kennedy High School)

John F. Kennedy High School

Identification of Excitatory and Inhibitory E18 Neurons for Frequency Regulation of Network Activity via HD-MEAs

Earth and Environmental Sciences

1ST

Winston Zhou (Syosset High School)

Syosset High School

Wavelet Based Parallel Hybrid Deep Learning Model for Forecasting El Nino-Southern Oscillation Cycles

1ST

Taylor Maguire (Garden City High School)

Garden City High School

Evaluating the Long Range UVA Blocking Abilities of an Eco-Friendly Sunscreen Substitute Derived From Musa acuminata on Girardia tigrina Locomotion and the Degree of UV-Induced Cellular Damage.

2ND

Emily Zhao (Manhasset High School)

Manhasset High School

Integrated Geospatial and Socioeconomic Analysis Forecasting Food Insecurity Under Climate Change

2ND

Samantha Ruano Leon (East Hampton High School)

East Hampton High School

Comparison of Microplastic Abundance and Composition Between Bivalves: Geukensia demissa, Mytilus edulis, Mercenaria mercenaria, Crassostrea virginica, and Argopecten irradians

2ND

Tyler Michael Matukonis (Ward Melville High School)

Ward Melville High School

Predictive Modeling of Vibrio Spp. Planktonic Growth and Biofilm Formation Under Environmental Stressors Using Machine Learning

3RD

Kahela Jade Michel (Elmont Memorial)

Elmont Memorial

Coral Geochemistry Reconstruction Predicts South Pacific Convergence Zone Dynamics in a Changing Climate

3RD

Zohia Tahir (Brentwood High School)

Brentwood High School

Assessing and Evaluating the Effects of Various Plastic Pollutants on Geukensia demissa Filtration Efficiency: An Investigation into Marine Pollution and Its Ecological Consequences

3RD

Elizabeth Cruz (Brentwood High School)

Brentwood High School

Evaluating Microfiber Emission from Domestic Laundering and Their Effects on the Filtration Rate of Geukensia demissa

H.M

Noah Ryan Berlin (Half Hollow Hills East)

Half Hollow Hills East

Evaluating the Relative Importance of the Causes of Hypoxia in the Eastern and Western Narrows Regions of the Long Island Sound

H.M

Michelle E Leal (Brentwood High School)

Brentwood High School

Evaluating the Effects of Ocean Acidification on Argopecten Irradians Using Advanced Analytical Techniques and Shell Morphology

H.M

Graelyn Mar LoRusso (Westhampton Beach High School)

Westhampton Beach High School

The Effects of Sunscreen Chemical Avobenzone in Seawater on the Development and Mortality of Juvenile M. mercenaria Shellfish

H.M

Taylor Madison Carpentieri (Sayville High School), Adria Marina Vargas (Sayville High School)

Sayville High School

Testing the Efficacy of Biofiltration Media for Stormwater Nitrate Filtration and Reduction

Energy and Environmental Engineering

1ST

Alexandra Eileen Gregory (Garden City High School)

Garden City High School

Novel Magnetic Device for Microplastic Capture via Van Der Waals Forces

2ND

Kate H Adams (Walt Whitman High School)

Walt Whitman High School

The Development of a Low-Cost Lycorma Delicatula Trap

3RD

Samantha Liu Stoneking (Manhasset High School), Kristina Theodosopoulos (Manhasset High School)

Manhasset High School

Enhancing Dye-Sensitized Solar Cell Performance: The Role of Gelled Electrolytes and Natural Dye Co-Sensitization

H.M

Ryan Tae (Jericho High School)

Jericho High School

Optimizing Silicon Anodes: Investigating Ultra-High Carboxyl Density Binders

H.M

Sophie Hu (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Cost-efficient catalysis: Scaling and characterization of the SSZ-13 (CHA) zeolite synthesis process

Embedded, Technology Arts, Technology Engineering, and Energy Technology

1ST

Alexander Thomas Singer (Ward Melville High School)

Ward Melville High School

Novel CMOS Level Shifting Topologies for Signal Transmission Between Chiplets of Different Voltages

2ND

Bryan Cheng (William A. Shine Great Neck South High School), Yuhao (Henry) Xu (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Adaptive Optics Beam Steering System Utilizing Nematic Liquid Crystal & Machine-Learning Predictive Correction for Enhancing Fso Systems

3RD

Abdullah Ahmed Ashrafi (George W. Hewlett High School)

George W. Hewlett High School

Development of a Thermal Camera for Imaging Using Terahertz Radiation

H.M

Noah Reid Kay (Half Hollow Hills East), Adithya Patnam (Herricks High School)

Half Hollow Hills East

Adaptive Haptic Feedback Device for Observing the Delivery of Information in Time-Critical Human-Machine Interfaces

H.M

Sean Matthew Skinner (Ward Melville High School)

Ward Melville High School

Physics-Informed Machine Learning for Many-Objective Generative Design

H.M

Daniel Sawicki (St Anthony's High School)

St Anthony's High School

Waterless technology to clean dust from photovoltaic cells using additive manufacturing of Indium Tin Oxide Electrodes

Microbiology

1ST

Mehek Kaur Sawhney (Commack High School)

Commack High School

Characterizing the Secretion Signal in the C-Terminus of the Francisella tularensis protein FTL_1123: Insights for Type 1 Secretion and Therapeutics

2ND

Cody Cheng (Syosset High School)

Syosset High School

An analysis of truncated Sgs1 protein interactions with Mek1, Srs2, and Zip1 using the two-hybrid system in budding yeast

3RD

Caitlin Avery Lee (Herricks High School)

Herricks High School

In vitro Analysis of SARS-CoV-2 Omicron JN.1 Subvariants with Spike S31 Deletion and Their Evasion of COVID-19 Therapies

H.M

Alyssa Shuchen Huang (Syosset High School)

Syosset High School

Assessment of wastewater exposure and horseradish peroxidase on the removal of bisphenol A by Chlorella vulgaris

H.M

Maroska Ishak (Walt Whitman High School), Elizabeth Hsiao (Roslyn High School), Claire Parks (Huntington High School)

Walt Whitman High School

The Effect of Glyphosate on Plant and Microbial Health

Physics and Astronomy

1ST

Gary Han (Syosset High School)

Syosset High School

Discovery of the First Double Exocomet Using an Automated Deep Learning Convolutional Neural Network

2ND

Vivian Chen (Manhasset High School)

Manhasset High School

Probing Electron Spin Using Optically Detected Magnetic Resonance

3RD

Mia Cavero (Sanford H. Calhoun)

Sanford H. Calhoun

Calibration of a Laboratory Version of the NASA Mars 2020 Perseverance Rover PIXL micro-XRF Instrument

H.M

Tiffany Chung (Smithtown High School East)

Smithtown High School East

Methods of Surfactant Purification for Large-Scale Water-based Liquid Scintillator Neutrino Detection

H.M

Zen Pinkenburg (Rocky Point HS), Om Patel (Rocky Point HS)

Rocky Point HS

Deep Learning on sPHENIX Calorimeter Waveform Fits

Plant Sciences

1ST

Dora Fields (Northport High School)

Northport High School

Effects of Nitrogen-Doped Carbon Dots on Germination and Growth in Solanum lycopersicum (tomatoes) Using Keratin-Based Hydroponic Substrates

2ND

Ariel Sofia Greenberg (George W. Hewlett High School)

George W. Hewlett High School

Identification and Characterization of a Mutant Tolerant to Na⁺ and Ag⁺ in Fern Ceratopteris richardii

3RD

Kevin John Tritschler (Valley Stream South High School)

Valley Stream South High School

Natural Pesticides: Assessing the Influence of Salinity Stress and Mitigation via B. Subtilis Application on the Development of Lamiaceae Botanicals and their Impact on the Natural Predator H. convergens

H.M

Mark Prainito (John F. Kennedy High School)

John F. Kennedy High School

A Novel Evaluation of the Efficacy of Ulva spp. in Mitigating Ocean Acidification and Cochlodinium polykrikoides Toxicity in Mercenaria mercenaria and Crassostrea virginica Larvae

H.M

Cassel Claire Koss (Long Beach High School)

Long Beach High School

Utilization of Bacillus megaterium and Pseudomonas fluorescens to Substitute Fertilizer Usage in the Hydroponic Cultivation of Lactuca Sativa

Robotics, Intelligent Machine, Software, and Math

1ST

Arav Chand (Half Hollow Hills West)

Half Hollow Hills West

Matrix Product Formulas for Generating Functions for p -adic Valuations of Generalized Binomial Coefficients

2ND

Partap Singh Sidhu (Bethpage High School)

Bethpage High School

Low-Cost, High-Performance Humanoid Upper Body for Automating Hazardous Tasks with Quasi-Direct Drive Actuators and Machine Learning

2ND

Michael Petrizzo (Commack High School)

Commack High School

Building a Conversational AI Medium to Enhance Psychotherapy Training with Virtual Patients

3RD

Anish Pahari (Jericho High School)

Jericho High School

High-Rank Elliptic Curve Generation: A Novel Algorithm with Cryptographic Applications

3RD

Mohammad Wasim (Half Hollow Hills East)

Half Hollow Hills East

Optimizing Quantum Support Vector Classifiers in Flood Prediction: Data Specific Quantum Kernel Training for Enhanced Feature Mapping Capabilities

H.M

Alexandra Lindsay Miller (Paul D. Schreiber High School)

Paul D. Schreiber High School

Enhancing Policy Learning in Autonomous Robots through Multi-Perspective Visual Data Inputs via Imitation Learning

H.M

Samvath Karanam (Hauppauge High School)

Hauppauge High School

Ear-ly Detection: A Machine Learning Approach to Identification of Ear Infections

H.M

Dean Chen (Paul D. Schreiber High School)

Paul D. Schreiber High School

Improving the Precipitation Distribution Around Synthetic Tropical Cyclone Tracks Using Radar, P-CLIPED Precipitation Model, and Deep Learning

Translational Medical Science

1ST

Caden Li (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Automated Segmentation and Characterization of Hemorrhagic Cysts in Autosomal-Dominant Polycystic Kidney Disease: A Comparative Study of PKD1 and PKD2 Genotypes

2ND

Mahin Ryan Gupta (Roslyn High School)

Roslyn High School

Evaluating Readability Metrics in AI-Summarized Versus Standard Patient Education Materials: A Quantitative Analysis

3RD

Ariel River (George W. Hewlett High School)

George W. Hewlett High School

Characterizing miRNA Associated With Gastroesophageal Reflux Disease

H.M

Misha Gujja (Jericho High School)

Jericho High School

Spatial Transcriptomic Analysis of Human Dopaminergic Neurons and Breast Cancer Cells Co-cultured In Vitro: Implications for Perineural Invasion

H.M

Emma Wen (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

AUM-302, A Novel Triple PIM/PI3K/mTOR Inhibitor, Offers Promising Potential in Reducing the Growth of Pancreatic Ductal Adenocarcinoma Spheroids and Organoids

Animal Sciences

1ST

Alexandra Claire D'Alessio (Half Hollow Hills West)

Half Hollow Hills West

A Comparison of Ceramic and Wooden Mediums for Artificial Pollinator Habitats to Mitigate Thermal Shock and Fungal Spread

2ND

Aleeza Akhtar (Valley Stream South High School)

Valley Stream South High School

Timing-Dependent Effects of Resveratrol on FASD and Diabetes-Induced Developmental Deficits in Drosophila Melanogaster

3RD

Alexa Joy Kosinski (Valley Stream South High School)

Valley Stream South High School

Mitigating Implications of Glyphosate-based Herbicides on Earthworms Through Cyanobacteria (Spirulina) and Fungi (Trichoderma) Supplementation

3RD

Anthony Richard Caiazza (St Anthony's High School)

St Anthony's High School

Optimizing DNA Extraction for Non-Invasive Tarantula (Theraphosidae) Exuviae DNA Barcoding, utilizing Oxford Nanopore Sequencing

3RD

Naima Brown (Valley Stream South High School)

Valley Stream South High School

The Long Term Effect of Styrofoam Based Diets on Zophobas morios

H.M

Kyle Wasserman (Bellmore John F. Kennedy High School)

Bellmore John F. Kennedy High School

The Synergistic Effect of Spermidine and Urolithin A on Muscle Degeneration in a Drosophila melanogaster Duchenne Muscular Dystrophy Model

H.M

Amanda Klein (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Impacts of Curcumin and Methylene Blue on the Rough Eye Phenotype of V337M Drosophila?.

H.M

Salvatore LoBrutto (W.C. Mephram High School)

W.C. Mephram High School

Trabecular Bone Adaptation to Mechanical Forces in the Proximal and Distal Regions of Canine Fabellae

Behavioral and Social Sciences

1ST

Karina Sofia Rios (Long Beach Schools)

Long Beach Schools

Evaluating Behavioral Outcomes and Gut Microbiome Diversity in Drosophila melanogaster Following Exposure to Natural Versus Prescription ADHD Interventions

1ST

Daniel Lang Ming (Syosset High School)

Syosset High School

Digital Expressions of Discontent: A Computational Analysis of Anti-Work Reddit Communities and Evolving Work Narratives

1ST

Nikhil Shah (Syosset High School)

Syosset High School

Examining the Impact of the Federal Sentencing Guidelines on Racial Disparities in Federal Sentencing

2ND

Kate Marianne Ragona (Long Beach Schools)

Long Beach Schools

Consumer Explicit vs. Implicit Attitudes and Taste Perception of Dairy and Plant-based Milks

2ND

Sydney Pollux Bergstein (Long Beach Schools)

Long Beach Schools

The Impact of AI-Generated Social Media Photo Filters on Self Reported Confidence and the Efficacy of Media Literacy Interventions

2ND

Yael Novak (Roslyn High School)

Roslyn High School

Broken Mass Index (BMI): Developing Inclusive Anthropometric Tools for Diverse Populations

2ND

Elaine Liu (Syosset High School)

Syosset High School

The Effects of Apology Strategies on the Spread and Intensity of Cancel Culture Incidents

3RD

Ruby Baik (Commack High School)

Commack High School

Effects of Dop1R Knockdown and Dop2R Overexpression on Addiction-Related Behavior in Drosophila

3RD

Taylor Amber Fong (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Intersecting Impacts of Racial Identity and Ascribed Gender Stereotypes on Public Perceptions of Intimate Partner Violence Victims

3RD

Soha Jhaveri (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

Evaluating the Effectiveness of Various Interpreter Modalities on the Behaviors of Medical Providers in a Clinical Setting

3RD

Kkomal Dhillon (East Meadow High School)

East Meadow High School

Through Their Eyes: The Impact of 2D Simulations on Empathy and Attitudes Toward Schizophrenia

3RD

Emily Zheng (East Meadow High School)

East Meadow High School

Facing Fears: Developing a Cognitive Behavioral Therapy Based Mobile Application to Combat Adolescent Specific Phobia

3RD

Maya Shiloh Stromer (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Role of the Implementation of the Multi-Tiered System of Supports on Teacher Effectiveness in Accommodating Student Mental Health Needs

H.M

Leonora Bella Atmadjaja (North Shore High School)

North Shore High School

Questioning Rules: How Rule Relativity Beliefs Shape Human Responses to AI

H.M

Asees Kaur Chhabra (W. Tresper Clarke High School)

W. Tresper Clarke High School

Environmental Stress Responses in Drosophila melanogaster: Implications for Human Disease Models

H.M

Giana Carla Diaz (Plainedge High School)

Plainedge High School

TikTok Tics: Exploring the Outbreak of Functional Tics on TikTok

H.M

Jia Ru Yang (Valley Stream South High School)

Valley Stream South High School

HOW DIFFERENT MOTIVATIONS OF PENPALLING AFFECT THE PERCEIVED QUALITY OF RELATIONSHIPS, COMPARED TO SOCIAL MEDIA

H.M

Gianni Livigni (Paul D Schreiber High School)

Paul D Schreiber High School

The Effect of AI Content Labels on Music Consumption and Marketing

H.M

Samaya Syali (Half Hollow Hills East)

Half Hollow Hills East

How the long-term effects of Unemployment Insurance Generosity and Secondary Measures affect Opioid Overdose Mortality before and after the COVID-19 Pandemic (2018 to 2023)

Biology Related

1ST

Benson Lu Huang (Half Hollow Hills West)

Half Hollow Hills West

BLADE: Bioimpedance-Enabled Laparoscopic Articulated Dual-purpose EndoWrist for Force Sensing and Anomaly Detection in a Glove-Based Robotic Surgery Interface

1ST

Anchita Agrawal (Jericho High School)

Jericho High School

Characterizing Convergent Transcriptomic Impacts of Norepinephrine Across Breast Cancer Grades via Element AVITI-24

1ST

Tessla Chan (Roslyn High School)

Roslyn High School

Uncovering Mechanistic Insights into PELO Dependency Across Molecular Subtypes of Gastrointestinal Cancers

1ST

Nikita Kumar (Herricks High School)

Herricks High School

BRAINMAP-NET: A Multilayer Convolutional Neural Network-Based Tool for Clustering Glioma Mechanical Subregions Using Topological Modeling of MRE-Derived Stiffness Gradients and Curvature

2ND

Taylor Maguire (Garden City High School)

Garden City High School

Dragon Gel: Exploring the Capabilities of a Dragon Fruit-Infused Wound Healing Hydrogel in the Mitigation of Oxidative Stress

2ND

Austin Hanchi Jin (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

M-CATCH: A Multiplex Microparticle CRISPR Assay for Mycobacterium Tuberculosis Drug Resistance Characterization

2ND

Samantha Liu Stoneking (Manhasset High School)

Manhasset High School

CLECL1+ CLL Cells Drive Lymph Node Fibroblast Reprogramming via Lymphotoxin Secretion

2ND

Alexandra LaBella (Bellmore John F. Kennedy High School)

Bellmore John F. Kennedy High School

The Effects of Adolescent Isolation on Social Behavior and Their Relationship with Neural Activity Utilizing Brain Tissue from TRAP2 Male Mice

2ND

Rachel Sloane Braverman (Half Hollow Hills West)

Half Hollow Hills West

A Comparison of Deep Neural Networks and Random Forests in Binary Single Nucleotide Polymorphism Pathogenicity Classification

2ND

Wenshu Wang (Herricks High School)

Herricks High School

Developing a Novel Hippocampus-Specific Epigenetic Clock Based on DNA Methylation Signatures of Late-Life Individuals

3RD

Connor William Chiu (Jericho High School)

Jericho High School

Uncovering a Novel miR-6068–RSPO3 Axis Driving Hyperactive Wnt Signaling and Treatment Resistance in Glioblastoma

3RD

Vanessa Rose Maltez (Long Beach Schools)

Long Beach Schools

Synthetic and Natural Food Dye- Induced Modulation of Probiotic Biofilm Formation, Viability, and Chemical Resistance in L. acidophilus

3RD

Natalie Horioglu (Paul D Schreiber High School)

Paul D Schreiber High School

Effects of Post-Dauer Development on Longevity in miRNA-Deficient C. elegans

3RD

Abigail Thomas (Herricks High School)

Herricks High School

Examining the Pathway of Rab8 Mediated Trafficking of GluA1-AMPARe in Response to In Vitro Chemical LTP Induction in Wildtype and Lrrk2G2019S Striatal and Cortical Neurons

3RD

Kevin Liu (Jericho High School)

Jericho High School

Integrative Structural Modeling and Molecular Dynamics Simulations Reveal Novel Insights Into Autism SORCS3 Missense Mutations

3RD

Ethan Y Wang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

SPARK - Simulation Platform for Adaptive Resistance Kinetics

3RD

Nathanial Ma (Half Hollow Hills East)

Half Hollow Hills East

Genome-Wide Mapping of Hyperhidrosis Vulnerability: Novel Loci and Mechanisms

H.M

Isabel Rose Gonzalez (Manhasset High School)

Manhasset High School

Towards Highly Sensitive, Non-Invasive Liquid Biopsy-Based Cancer Detection: Evaluating The Stability of Frenkel Excitonic Supramolecular Nanoassemblies with Biological Systems

H.M

Cathlyne Gabrielle Cueto (Lynbrook Senior High School)

Lynbrook Senior High School

Engineering a Microneedle-Mediated Transdermal Epinephrine Administration Platform for Prophylaxis Against Anaphylactic Immunological Responses

H.M

Trisha Samanpure (Garden City High School)

Garden City High School

Transtibial Prosthetic Socket Engineering: A Closed-Loop Workflow Combining 3D Limb Reconstruction, Stereolithographic Fabrication, Mechanical Load Characterization, and Finite Element Analysis

H.M

Kaylee Xinying Kuhr (Half Hollow Hills East)

Half Hollow Hills East

Embryonic Stage-Specific Localization and Enrichment of RhoGEFs in Drosophila PGCs Suggests Candidates for Therapeutic Metastatic Cancer Suppression

H.M

Brendan Lo (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Blocking SERCA2a With Thapsigargin Induces Cytokinesis Failure in Cardiomyocytes

H.M

Colin Davison (North Shore High School)

North Shore High School

Serine Threonine Kinase 25 (STK25) is an Integral Regulator of Basal Myeloid Cell Production

H.M

Noa Karp (Roslyn High School)

Roslyn High School

Basal Type I Interferon Signaling Pre-Programs Effector Memory CD4⁺ T Cells in a Genetically Tunable IFNAR Model

H.M

Sahil N Patel (St Anthony's High School)

St Anthony's High School

Direct Visualization and Comparative Analysis of Let-7 and Lin-4 Transcriptional Dynamics in C. elegans With MS2-MCP Signal Optimization

H.M

Dominic Cyril (New Hyde Park Memorial High School)

New Hyde Park Memorial High School

Anti-Inflammatory Properties of Naproxen Sodium Combined With Cerium Oxide (CeO₂) Nanoparticles on IL-1 β -Inflamed Chondrocyte Cells

H.M

Alan Shiheng Yu (Half Hollow Hills West)

Half Hollow Hills West

CEP164 as a Focused Full Cilia-Function Knockout for Neurodevelopment

H.M

Varda Qudratullah (Elmont Memorial)

Elmont Memorial

Synergistic Toxicity of Manganese and MPP⁺ Through Oxidative and Metabolic Collapse in SH-SY5Y Cells in Parkinsons Disease

H.M

Manasvi Dendukuri (Jericho High School)

Jericho High School

A Computational Ranking of Relapsed and Refractory Multiple Myeloma CAR-T Targets Using Antigen Stability Signals

H.M

Liana Cheng (Smithtown High School West), Jacey Lin (Smithtown High School West), Gyuree Lee Kim (Bethpage High School)

Smithtown High School West

Comparative Study of Mucilaginibacter sp. AK6, Mucilaginibacter sp. AK15 and Pedobacter sp. AK17 on their Effect on Wheat Plant Health and Growth

Chem Related

1ST

Ryan Tae (Jericho High School)

Jericho High School

Unlocking a Tenfold Increase in Battery Performance: Poly(citric Acid) as a Novel Binder for Silicon Anode Batteries

2ND

Lucienne Keyoung (Manhasset High School)

Manhasset High School

Tunable Morphology of Zero-Waste Cellulose Nanofiber Hydrogels via a Novel Gelatin-Mediated Ice Inhibition Mechanism for Sustainable Agriculture and Water Remediation

3RD

Michelle Okonowicz (Commack High School)

Commack High School

New Approaches for Affordable, Earth Abundant Dye-Sensitized Solar Cells: Synthesis and Characterization of $[Fe(CN)_4(dppz)]^{2-}$ and $[Fe(CN)_4(dppn)]^{2-}$

3RD

Catherine Chen (Manhasset High School)

Manhasset High School

Preventive and Restorative Strategies for Multifunctional Concrete Using Hydrogel-Encapsulated Healing Agents and CNF: Integrated Wet-Lab and Computational Approaches

3RD

Matthew Lin (Roslyn High School)

Roslyn High School

Using Bayesian Optimization to Design Conductive PEO-Based Mixed-Graft Block Copolymers

H.M

Charlie Mastroberti (West Islip High School)

West Islip High School

Analysis of Microplastic and Chemical Filtration Through Different Water Filters

H.M

Odelia Syrai Nugent (Elmont Memorial)

Elmont Memorial

Investigating the Effects of Graphite Particles on the Electrical Conductivity of Concrete

H.M

Xiaowu Lai (Jericho High School)

Jericho High School

Printing the Future of Flight: Additive Manufacturing of Carbon Fiber/Carbon Nanotube Hybrid Reinforced Polyetheretherketone (PEEK) Composites using Selective Laser Sintering

Enviroment Related

1ST

Vedant Balani (Jericho High School)

Jericho High School

Hurricane Forecasting Using Comprehensive Multivariable Machine Learning Modeling with Atmospheric Temperatures, Polar Motion, and Sunspot Numbers

1ST

Sydney Grace Olivo (Long Beach Schools)

Long Beach Schools

Detection of Trifluoroacetic Acid in Commercial Water Filters and Its Toxicological Impacts on Keystone Aquatic Species

1ST

Rachel Olivia Master Huth (Huntington High School)

Huntington High School

Design and Evaluation of an Energy-Efficient CO₂ Capture System Utilizing Sodium Hydroxide for Ammonium Bicarbonate Fertilizer Synthesis

2ND

Christina Jeannette Bayne (Elmont Memorial)

Elmont Memorial

Utilizing Foraminifera to Compare Temperature Changes in the Western Pacific Warm Pool Thermocline to Orbital Forcing.

2ND

Anjali Ponugupati (Bethpage High School)

Bethpage High School

Effect of pH-Modified Dissolved Organic Matter On Per- and Polyfluoralkyl Substance Adsorption by Granular Activated Carbon

2ND

Victoria Rose Sinnona (Long Beach Schools)

Long Beach Schools

Pilot Study: Low-Cost Removal of Polypropylene Microplastics Using Electrospun Biocompatible Fiber Mats

2ND

Joshua Norman Fields (Northport High School)

Northport High School

Evaluating rGO/ZIF-67 Nanocomposites for Dye Remediation Using an Algal Photosynthesis Bioassay

3RD

Alice Huang (Syosset High School)

Syosset High School

Advancing Ensemble Tropical Cyclone Forecasts with a Novel Integration of Atmospheric Physics-Aware Consistency Frameworks in Artificial Intelligence Weather Prediction Models

3RD

Ella Marie Menu (East Hampton High School)

East Hampton High School

Ocean Wave Growth Measurements in Hurricane-Force Winds

3RD

Vaibhavi Hegde (Hauppauge High School)

Hauppauge High School

Textile Recycling: Exploring Enzymatic and Anaerobic Methods for Blended Textile

3RD

Humzah Syed Mohsin (Valley Stream South High School)

Valley Stream South High School

A Machine Learning–Powered Water Quality Prediction Model and Cost-Effective Iot Water Quality Monitoring Systema Machine Learning–Powered Water Quality Prediction Model and Cost-Effective Iot Water Quality Monitoring System.

3RD

Cynthia Qian (Jericho High School)

Jericho High School

Computational Discovery of Marine Plastic-Degrading Enzymes Enhanced by Deep Eutectic Solvents

H.M

Cynthia Zhang (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Evaluation of AI Weather Prediction Model on Extreme Eastern U.S. Extratropical Cyclones Using a Cyclone-Relative Approach

H.M

Thomas James Fini (Manhasset High School)

Manhasset High School

Longitudinal Comparison of Microeukaryote Diversity in Contrasting Urban Reservoirs

H.M

Robert Lu (Manhasset High School), Yu Xiang Lin (Manhasset High School)

Manhasset High School

Iron-Based Ferrofluids Enhance Chlorella vulgaris-Mediated Bioremediation of Sewage Water Contaminants

H.M

Charlotte Avery Rothemich (St Anthony's High School)

St Anthony's High School

Examination of the Clearance Rate and Effects of Short-Term Exposure of Crassostrea virginica to Margalefidinium polykrikoides

H.M

Gregorio Andres Bonetti (Bethpage High School), Sarah Oh (Bethpage High School), Aryaan Khalfan (Bethpage High School)

Bethpage High School

The Effect of the Proximity of a Salt Marsh to Urbanized Areas on the Presence of Heavy Metals

H.M

Kahela Jade Michel (Elmont Memorial)

Elmont Memorial

A Geochemical Approach for Identification of Sea Surface Temperature Change: Using Coral Skeleton Temperature Proxies

H.M

Sebastian Truong (Mineola High School)

Mineola High School

The Effect of Pseudomonas stutzeri on the Inhibition of Alexandrium tamutum: Exploring Biosurfactant (Rhamnolipid) Amplification

H.M

Parker Eugene Molina (Hampton Bays High School)

Hampton Bays High School

Effects of Microplastic Pollution on Soil Microbial Communities in an Agricultural Soil.

H.M

Ella Rose Trama (Sayville High School)

Sayville High School

A Novel Approach to Nutrient Removal in Shellfish Upwelling Systems Using Biofiltration

H.M

Alexander James Keenan (Kings Park High School)

Kings Park High School

Streaming Potential: Enhanced Electrokinetic Energy Harvesting Using Wicking Materials

Math and Physics

1ST

Arav Chand (Half Hollow Hills West)

Half Hollow Hills West

Universal Matrices For Counting Fibo-Multinomial and C-Multinomial Coefficients With a Cryptographic Application

1ST

Gary Han (Syosset High School)

Syosset High School

Discovery of Previously Undetected Exocomets in Kepler Using ExoSeek, a Novel End-to-End Deep Learning Exocomet Detection Algorithm

2ND

Michael Petrizzo (Commack High School)

Commack High School

SFDiff: An Accurate, Generalizable Diffusion Denoising Probabilistic Model (DDPM) for State Estimation of Nonlinear Systems

3RD

Henry Zhang (Jericho High School)

Jericho High School

Information Geometry of Continuous-Variable Quantum Neural Networks

3RD

Kristina Nicole Theodosopoulos (Manhasset High School)

Manhasset High School

Noise-Hardened BB84: Quantifying and Mitigating Environmental Noise to Restore Secure Keys in a Classroom-Scale QKD System

H.M

Arjun Patel Sankran (The Wheatley School)

The Wheatley School

Optimizing the Freemium Model: Conversion Challenges and Opportunities

H.M

Joaquin Charles Martin (Lynbrook Senior High School)

Lynbrook Senior High School

A Machine Learning Approach to Conduct Exoplanet Classification Based on Habitability Using Labeled and Unlabeled Data

H.M

Adrianna Theresa Stucchio (Half Hollow Hills East)

Half Hollow Hills East

Quantifying a Limiting Factor in Closed Shell Effect Charge State Breeding: Approximating a Point Beyond Which Radiative Recombination Becomes Non-Negligible

H.M

Brandon Li (John L. Miller Great Neck North High School)

John L. Miller Great Neck North High School

Analysis of Geomagnetic Storm Effects on Satellite Orbital Decay

H.M

Ariana Summer Bridges (North Shore High School)

North Shore High School

A Silent Breakthrough: Improving Variational Quantum Eigensolver Accuracy Through Use of a Denoising Autoencoder

Medical Related

1ST

Noor Waqas Sohail (Westhampton Beach High School), Brady Charles Schultz (Westhampton Beach High School)

Westhampton Beach High School

*An Experimental Analysis of the Effect of Dietary *P. dactylifera* Concentration on the Midguts and Memory in *D. melanogaster* Expressing the Amyloid Precursor Protein*

1ST

Divya Jayam (The Wheatley School)

The Wheatley School

Cephalexin as a Potential Novel Treatment for Parkinson's Disease Through Modulation of Gut Inflammasome Activity and Neuroprotective Pathways

1ST

Jonathan Zachary Philip (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Impacts of Resveratrol and Escherichia Coli Dietary Restriction on the Behavioral and Pathological Aspects of Alzheimer's Disease using Caenorhabditis Elegans as a Model

2ND

Aryana Adur (Jericho High School)

Jericho High School

Modulating a Novel Neuroepithelial Circuit in Food Allergy to Repair Barrier Dysfunction with Larazotide Acetate and Neuregulin-1

2ND

Sia Kripalani (The Wheatley School)

The Wheatley School

Integrating Selenium into Mercury Risk Models for Fish Consumption

2ND

Daniel Qiao Lin (Bellmore John F. Kennedy High School)

Bellmore John F. Kennedy High School

Liquid Lens-Based Automation of Accommodative Facility Testing in Myopia

2ND

Angelina Liu (Herricks High School)

Herricks High School

Deglycosylated L1CAM Targeting Antibody Optimizes Ovarian Cancer Tumor Specificity in Immuno-PET Imaging

3RD

Samantha Reese Heyman (Half Hollow Hills East)

Half Hollow Hills East

Beyond the Sideline: Gaps in Brain Region Coverage by Sideline Concussion Assessments

3RD

Ella Rose Findling (George W. Hewlett High School)

George W. Hewlett High School

Glucagon-like peptide-1 Receptor Agonists Reduce Hepatic Steatosis and Fibrosis in Pediatric Metabolic-dysfunction Associated Steatotic Liver Disease

3RD

Jennifer K Pyo (Jericho High School)

Jericho High School

Effect of Melatonin on the HMGB1-Inflammatory Pathway and Macrophage Polarization

3RD

Chrysta Thomas (Oyster Bay High School)

Oyster Bay High School

Shaped by signals: Leveraging breast cancer nuclear morphology to elucidate regulatory pathways as therapeutic targets

3RD

Alessandra Marchese (Plainview-Old Bethpage JFK High School)

Plainview-Old Bethpage JFK High School

The Impact of Prickly Pear Extract on C. elegans Modeling Charcot-Marie-Tooth Disease

H.M

Yena Hwang (St Anthony's High School)

St Anthony's High School

Mechanical Activity of Skeletal Muscle Suppresses Lung Cancer Migration Through Myokine-Mediated Pathways

H.M

Olivia Z Zeng (The Wheatley School)

The Wheatley School

Co-Targeting NPFF, Metformin, and GSK-3 β for Multi-Pathway Alzheimer's Therapy.

H.M

September Chiang (Commack High School)

Commack High School

Evaluating the Effects of Curli Producing E.Coli on Alpha- Synuclien Aggregatiom in Dosophila

H.M

Aleena Zaidi (Friends Academy), Anthony Yu (Friends Academy)

Friends Academy

Improving Enteral Tube Care: Testing Methods to Clear Nutritional Formula Blockages Against a Novel Approach

H.M

Sophia Marie Stevenson (Long Beach Schools)

Long Beach Schools

Ultrasonographic Evidence of in Vivo Rouleaux Formation Induced by Cell Phone Radiation Exposure

H.M

Rylee Elizabeth Varian (Long Beach Schools)

Long Beach Schools

A Novel Investigation of Metformin's Effects of Metabolic and Neurological Defects in a Pan-Neuronal Drosophila melanogaster Model of Huntington's Disease (elav-GAL4; UAS-Htt)

H.M

Sophia Akmal (Syosset High School)

Syosset High School

Sargassum Pallidum Effects on the Alzheimer's Disease Model of Caenorhabditis elegans

H.M

Michelle V. Evangelista (Seaford High School)

Seaford High School

The Effect of Nicotinamide Mononucleotide and Caffeine on the Proliferation of Δ Sir2 Saccharomyce cerevisiae

Plant Sciences

1ST

Julia Igaunis (George W. Hewlett High School)

George W. Hewlett High School

Epigenetic regulation of rhizoid and root hair development in Ceratopteris richardii

2ND

Elizabeth Hsiao (Roslyn High School)

Roslyn High School

Restor-AI-tion Chamber: Integrating Machine Learning Detection and Ultraviolet C Therapy to Treat Xanthomonas Infections in Tomatoes and Bell Peppers

3RD

Virginia Rose Levine (North Shore High School)

North Shore High School

Novel SbMATE Isoforms & Expression Patterns Under Aluminum Stress in Sorghum

3RD

Valeria Camila Paez Martinez (George W. Hewlett High School)

George W. Hewlett High School

Alternative Splicing and Retrotransposon-Linked Intron Expansion in a Ceratopteris richardii Phytochrome Gene Yields a Red Light Induced Truncated Isoform

H.M

Jillian Kate Olfano (West Islip High School)

West Islip High School

Biopriming With Bacillus Probiotics: Effects on the Growth and Nutritional Value of Watercress

H.M

Sophie Jane Lancashire (East Hampton High School)

East Hampton High School

The Effect of Calcium Nitrate Concentration on Growth and Leaf Expansion in Hydroponically Grown Butterhead Lettuce.

H.M

Wilmer Steven Verdugo (East Hampton High School)

East Hampton High School

Evaluating the Effects of Pantoea Agglomerans, Endophytic Bacterium Strain PaKM, on the Growth and Nutrient Accumulation of Four Cultivars of Hydroponically Grown Lettuce (Lactuca sativa L.)

Technology

1ST

Emma Elise Su (Herricks High School)

Herricks High School

Developing a Novel Adaptive Tuning Module for Real-Time Frequency Correction in Radiofrequency Coils During Concurrent TMS-fMRI

1ST

Partap Sidhu (Bethpage High School)

Bethpage High School

NeuroGait: A Low-Cost, Mind-Controlled Pneumatic Exoskeleton With CNN-Based Control for Individuals With Lower-Limb Mobility Impairments Using Brain Computer Interface

2ND

Harrison Pearce Bernstein (Half Hollow Hills West), Galileo Solis (Half Hollow Hills West)

Half Hollow Hills West

Fire Resistant Drone That Uses Thermal, Radar, and Stereoscopic Vision Sensors to Navigate, Scan and Map Fires to Determine Location of Fire Victims

2ND

Julia Xu (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

A Novel Market-Based Machine Learning Framework for Detecting ESG-Washing in Investment Funds

2ND

Ethan Lin (New Hyde Park Memorial High School)

New Hyde Park Memorial High School

Development and Implementation of an Improved A/FTG Hybrid Algorithm on a Differential Drive Mobile Robot Chassis*

3RD

Joyce Xu (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

Developing an Affordable On-Device Animatronic Hand and Large Language Model Based Pipeline for Real-Time American Sign Language Conversation

3RD

Eric Zheng (Herricks High School)

Herricks High School

Quiet as an Owl: A Biomimetic Study Utilizing Low Fidelity Computational Simulations To Assess Propeller Aerodynamic Performance and Aeroacoustic Noise

3RD

Mohammad Wasim (Half Hollow Hills East)

Half Hollow Hills East

Automating Quantum Support Vector Classifier Feature Mapping: A Reinforcement Learning Based Approach to Data-Specific Optimization

3RD

Mark Xu Li (William A. Shine Great Neck South High School), Hye-Seung Cho (William A. Shine Great Neck South High School)

William A. Shine Great Neck South High School

NTStream: A Cross-Stack Hardware Compiler for the Structural Synthesis of Custom ASIC Accelerators From Artificial Neural Networks (ANNs) for Edge Computing Applications

H.M

Jiacheng Huang (Jericho High School)

Jericho High School

Subwavelength Grating and Slot Waveguide Designs for Ultra-Compact Nonvolatile Silicon Photonic Phase Shifters

H.M

Eric Todd Greene (South Side High School)

South Side High School

Accelerating k-Nearest Neighbors Classification by Creating Two Dataset Optimization Algorithms

H.M

Ryan Yim (H. Frank Carey)

H. Frank Carey

Predicting Thyroid Cancer Recurrence Using Machine Learning Models With Feature Selection

H.M

Ray Tang (Shoreham-Wading River High School)

Shoreham-Wading River High School

Kinematic Synthesis of Planar Leg Mechanisms through Large-Scale Dataset Generation, Geometric Filtering, and Optimization

H.M

John M Ricci (Plainedge High School)

Plainedge High School

Optimizing the Locomotion System of an Eight-legged Robot Through Encoder-based Motors.

H.M

Serin Jo (Roslyn High School)

Roslyn High School

Design of a Lightweight Peak Picking Algorithm for Noisy Mass Spectrometry Data

H.M

Adithya Patnam (Herricks High School)

Herricks High School

Optimizing Information Delivery for Time-Critical Blind or Low Vision Navigation: Machine Learning vs. Heuristic Signaling in a Virtual Reality Obstacle Avoidance Task

H.M

Denys Zagrebin (Seaford High School)

Seaford High School

Utilizing RSSI Ranging in a Smartwatch Application to Measure Sprint Performance