

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 Pascin2 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

The Antimicrobial Effects of Uniquely Coated Sutures on Staphylococcus epidermidis

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

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 Chiplelets 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

Energy and Environmental Engeneering

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

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-CLIPER 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