

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 Broussonoflavonol 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 $\Delta F508$ 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 Mechano-synthesis 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