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**REGENERON SCIENCE
TALENT SEARCH
2026 SCHOLARS**

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2026 SCHOLARS

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ARIZONA

Chandler

Arizona College Preparatory High School**Wu, Brad, 17**

A Brain-Computer Interface-Driven Forearm Exoskeleton With Adaptive Neuroregulation-Based Feedback for Stroke Rehabilitation

Tucson

Tanque Verde High School**McGill, Finnegan, 18**

A-BiRD: An Automated Bird Recognition Device for Acoustic Monitoring and Conservation

University High School**Liu, Louis, 17**

FallPoint: Fall Detection With 4D mmWave Radar Using PointNet and a Recurrent Neural Network

Yuma

Harvest Preparatory Academy Yuma**Covarrubias, Jorge, 17**kaktosPatch: Monitoring Necrosis in *Carnegiea gigantea* (Saguaro Cactus) Using an Engineered Smart Bandage and Mobile Application

ARKANSAS

Hot Springs

Arkansas School for Mathematics, Sciences, and the Arts**Vidal, Luis, 18**

Designing Substrates To Test HELB as a Potential Therapeutic Agent Against Glioma and Colon Adenocarcinoma

Little Rock

Little Rock Central High School**Sridharan, Siddharth, 18**

The Neurobiology of Voluntary Exercise: A Novel Approach To Alleviate Chemobrain by Promoting Hippocampal Neurogenesis

Little Rock Central High School**Tang, Eric H., 18**Comparison of the Presence of Heavy Metal Resistance Genes in *Salmonella enterica* and Their Association With Antibiotic Resistance

CALIFORNIA

Atherton

Menlo Atherton High School**Shivakumar, Shawnak, 17**

Drugging the Undruggable: AI-Enabled Discovery of a Novel Cryptic Pocket and Inhibitors in Oncogenic eIF4E

Calabasas

Viewpoint School**Shivakumar, Rohan, 17**

A Novel Early-Warning Signal of Wildfire Spread Using Vegetation Stress at the Edge of Fire Fronts

Campbell

Westmont High School**Mohanty, Yashnil, 17**

Physics-Guided Neural Forecasts of Nearshore Harmful Algal Blooms in the California Current System

Carpinteria

Cate School**Zhang, Alex, 18**

Prometheus: A Recursively Self-Improving NAS System

Cerritos	Cerritos High School Ge, Yujun, 18 Transforming Assistive Communication: An AI and NLP-Powered Machine Learning Framework for Contextual AAC
Cupertino	Cupertino High School Nawani, Paarth, 18 A Low-Cost Non-Mydratic Retinal Imaging System With a Multistage Deep Learning Pipeline for Automated Screening of Glaucoma Monta Vista High School Niu, Lindsey Liang, 17 Developing PDMS Microfluidic Sensors for Precise Micro Blood Flow Measurement To Advance Cardiovascular Diagnosis in Low-Income Regions Monta Vista High School Pahuja, Suhani, 17 Long-Term Cardiovascular and Mortality Risk in Patients With Preexisting Arrhythmia Post SARS-CoV-2 Infection
Fremont	BASIS Independent Fremont Lum, Kai, 17 Extremal Structural Results for Feedback Arc Sets and Graph Inversions Mission San Jose High School Chopra, Ryka, 17 Designing Incentive-Compatible Cooperation for the Global Commons: A Reinforcement Learning-Integrated Mechanism Design Framework for Arctic Conservation
Irvine	Arnold O. Beckman High School Low, Anthony, 17 A Novel 0D/2D Composite Phase Change Material for Thermal Management in High-Performance Computing Northwood High School Alexis, Sebastian Rae, 17 A Novel Framework for Stegomalware Detection Using Kolmogorov Complexity Northwood High School Low, Lauren, 18 A Novel Sparse-IMU Convolutional Neural Network for Real-Time Hip Kinematics in Exoskeleton-Augmented Gait Woodbridge High School Miller, Alexander, 17 Universal Quantum Error Mitigation via Random Inverse Depolarizing Approximation
Laguna Beach	Laguna Beach High School Tran, Zoe, 17 Development of a Novel Co-Expression-Dependent Direct Protein Interaction Mapping Method
Los Altos	Los Altos High School Du, Jonathan, 18 An Unrestricted Notion of the Finite Factorization Property
Los Angeles	Marlborough School Chen, Rachel, 18 The Dual Canonical Basis in the Spin Representation via the Temperley-Lieb Algebra

Los Gatos	Los Gatos High School Balasingam, Pravin, 17 Novel Machine Learning Approach To Identify Brain-Behavior Relationships for Core Autistic Traits
	Los Gatos High School Wang, Lucas (Zihe), 17 InnoColor Edge: A Real-Time Wearable System With Distilled Vision Transformer-Guided Recoloring for Color Vision Deficiency
Mission Viejo	Trabuco Hills High School Cheng, Bing, 18 Increasing Propeller Performance: Investigating the Optimization and Potential of a Novel Propeller Concept Through Computational Fluid Simulation, Experimental Testing Rig and Commercial Drone Integration
Newport Beach	Sage Hill School Yan, Jonathan, 18 Bioinformatic Analysis of Metastasis-Associated Metabolic Landscape Reveals an Oncogenic Role for the Transsulfuration Pathway
North Hollywood	Harvard-Westlake School Cheng, Lisa, 17 Structure-Based D-Peptide α -Synuclein Inhibitor: Tackling Solubility, Specificity and Bioavailability Challenges in Parkinson's Disease Therapy
	North Hollywood High School Ohshima, Suzuko, 18 Biophysical Characterization of SUN2-Pro-Macrobody Interactions Elucidates Multimerization Dynamics and Complex Stability
Oakland	The College Preparatory School Sastry, Samuel Siddhartha, 18 Folding and Reconfiguration of DNA Origami Book Structures
Palo Alto	Henry M. Gunn High School Tatavarty, Kaavya, 17 Personalized Cloud-Based Semg-to-Haptic System To Enable Long Distance Communication for Usher Syndrome
Pasadena	Polytechnic School Zhang, Kelly J., 18 Sentinel-2 Image Classification of Mangrove Populations Change From Cyclone <i>Amphan</i> To Locate Communities in the Sundarbans Most Affected
Rolling Hills Estates	Palos Verdes Peninsula High School Anand, Anish, 18 A Novel Wireless Charging System for Pacemakers Using 2.4 GHz EM Waves
	Palos Verdes Peninsula High School Kwon, Aiden, 18 Revolutionizing Turbulence Studies: Novel Low-Cost Zero Mean-Flow Chamber Design and Computational Analysis of Reynolds Stress Tensor
San Diego	Canyon Crest Academy Chalamalasetty, Abhiram, 17 TubercuProbe: A Cross-Attention Graph-Sequence Model for Prioritizing Compound Probes in <i>Mycobacterium tuberculosis</i>

Canyon Crest Academy

Dagar, Arnav, 17

ARFSNet—Deep Learning for Amblyopia Risk Factor Screening

Canyon Crest Academy

Luo, Anna, 17

Allelopathic Effects of *Cynara cardunculus* on Native Coastal Sage Scrub Species

Canyon Crest Academy

Rezaei, Ryan Sean, 18

Omni-Prot: Unifying Protein Function Prediction With PLM-Centric Fusion

Del Norte High School

Chen, Hayden, 17

A Novel Framework for the Discovery of MAP Kinase-Activated Protein Kinase 2 (MAPKAPK2) Inhibitors Using a Multi-Feature Deep Learning Ensemble

Westview School

Fan, Leanne, 18

Photobiomodulation on In Vivo and In Vitro Wound Models Under Simulated Microgravity for Future Space Travel

Westview School

He, David Zhang, 18

An Integrated Analysis of Marine Polyurethane Microplastic Degradation With Genetically Engineered Bacterial Biofilms

San Jose

Archbishop Mitty High School

Kadakia, Varini, 17

Autonomous Drone-Based System for Outdoor Air Pollution Mitigation

Bellarmino College Preparatory School

Lu, Kevin, 17

AEGIS: Security Sandboxing Meets Mechanistic Interpretability To Defend Against Prompt Injection Attacks

Evergreen Valley High School

Wei, Mary, 18

A Fast and Accurate Method for Numerical Integration of Bandwidth-Limited Signals

Leland High School

Nguyen, Max Hung, 17

Star2Planet: Decoding and Predicting the Stellar Signatures of Planet Formation

Lynbrook High School

Bandugula, Abhigya, 18

Comparison of RNA-Seq Data From Primary and Recurrent Acute Myeloid Leukemia Patients

The Harker School

Ghane, Cyrus, 17

Toward a Unified Model of the Macaque Cortex With Multi-Scale Spatiotemporal-Neurochemical Integration

The Harker School

Gupta, Danika, 17

Using AI To Clean Water: Leveraging Large Language Models for Mycoremediation Data Extraction and Modeling

The Harker School**Shi, Lily, 17**

Enhancing Medical Explainability in Deep Learning for Age-Related Macular Degeneration Diagnosis

The Harker School**Shivakumar, Aditya, 18**

Ultra Low-Cost, Field-Deployable Arsenic(V) Detection and Adaptive Hotspot Mapping With Methylene Blue-Gold Nanoparticle Colorimetry and Smartphone Spectroscopy

The Harker School**Zhang, Evan, 17**

Self-Sensing Hydraulically Amplified Self-Healing Electrostatic Artificial Muscles With AI-Driven Control for Cardiac Assist

San Mateo**The Nueva School****Chu, Colin Jie, 18**

Frequency-Based Parameterization of Semi-Empirical Models for State-of-Health Estimation in Lithium-Ion Batteries in Electric Vehicles

The Nueva School**Liang, Frances, 17**

PLI-Analyzer: A Novel Platform for Quantitative Assessment of Structural and Biological Accuracy in AI-Predicted Protein-Protein Complexes

Saratoga**Saratoga High School****Li, Ella, 18**

Developing a High-Resolution, Cost-Effective, Saliva-Based HLA Typing Method With Long-Range PCR To Detect Autoimmune Disease Susceptibility

Saratoga High School**Woo, Nolan H., 18**

A Comparative Study of AI and Human Programming on Environmental Sustainability

Stanford**Stanford University Online High School****Agrawal, Lakshmi, 18**

Stormwater Remediation of 6PPD and 6PPD-Quinone Using Citric Acid and Aluminum–Crosslinked Nanocellulose Hydrosporges

Sunnyvale**The King's Academy****Chen, Shin-En, 17**

Characterization of HBV-Host Junction Profile by HBV-Targeted NGS in Urine for Early Detection of Recurrent Hepatocellular Carcinoma and Disease Management

Temple City**Temple City High School****Hu, Neil Xuan, 17**

Development of an Innovative System To Reduce Ultrafine Particle Ingress Into Vehicle Cabins

Thousand Oaks**Thousand Oaks High School****Papavasiliou, Lila Lewis, 18**

Identifying the Existence of Unconscious Gender Bias in the Perception of Political Speakers Using EEG

Woodland Hills**William Howard Taft High School****Nabat, Seth Jacob, 18**

Learning Broken Symmetries With Approximate Invariance: A Novel Dual-Subnetwork Approach to Classifying Particle Collision Events

Yorba Linda

Yorba Linda High School

Lin, Jia Tong, 17

Walking Assistant: Automated Exoskeleton With Flexible-Rigid Coupled Hip Joint and Spine

COLORADO

Boulder

Fairview High School

Xu, Jenny Zhang, 18

CaraG Nanoparticle, a Novel CRISPR/SaCas9 Delivery Vehicle To Disrupt *ANGPTL3* and *PCSK9* Genes for Hypercholesterolemia Treatment

Colorado Springs

William J. Palmer High School

Muro, Natalie, 18

A Novel Field-Based Approach to Reducing Harmful Algal Blooms in Freshwater Ecosystems

Greenwood Village

Cherry Creek High School

Arun, Shruti, 18

On the Double of an Endymion Algebra in Characteristic 2

Highlands Ranch

Rock Canyon High School

Bhatia, Mishika, 17

Saw Palmetto-Induced Inhibition of the 5 α -Reductase Pathway as a Clinical Treatment for PCOS Symptoms

Thornton

Stargate School

Cao, Tristan Rei, 18

Tailoring Quantum Phases via Magneto-Synthesis in a Spin–Orbit-Coupled Trimer Lattice

CONNECTICUT

Greenwich

Greenwich Country Day School

Taylor, Cooper, 18

Lightweight Modular Dual-Tilt VTOL UAV: Design, Validation and Long-Endurance Performance

Greenwich High School

Jin, Henry, 18

Bridging the Sim-to-Real Gap in Autonomous Drone Control via Curriculum-Scheduled Domain Randomization

Stamford

King School

Wang, Leon, 17

Repurposing Idiopathic Pulmonary Fibrosis Drugs To Treat Vascular Alzheimer's Dementia: A Safe, Effective and Accessible Approach to Alzheimer's Treatment

Wallingford

Choate Rosemary Hall

Guo, Johnny, 18

Global Spatiotemporal Analysis of Interactions Between Urban Heat Islands and Heat Waves

Westport

Staples High School

Francis, Nolan John, 18

Vitamin D3 Supplementation Ameliorates Muscle Degeneration Through Calcium Regulation in a *Caenorhabditis elegans* Model of Duchenne Muscular Dystrophy

Windsor**The Loomis Chaffee School****Liu, Jiayi Michael, 18**

Differentiation and Functional Evaluation of Human-Induced Pluripotent Stem Cell (hiPSC)-Derived Cerebral Organoids To Model the AUTS2 Variant

DISTRICT OF COLUMBIA**Washington****Jackson Reed High School****Can, Thanh, 17**

Measures on Colored Binary Tree Structures and Applications to Tensor Categories

FLORIDA**Fort Myers****Dunbar High School****Fernando, Nishini, 18**

Comprehensive In Vitro Evaluation of Antidiabetic, Antioxidant, Cytotoxic and Wound-Healing Activities of Six Native Plant Species: Prelude to Novel Drug Discovery

Gainesville**Frazer School****Ngo, Bach, 17**

Hexaïssa: Deep Strategic AI for Complex Real-World Decision Making

Land O'Lakes**Academy at the Lakes****Lau, Darren, 18**AuRING: A Novel Augmented Reality Intraoperative Neurosurgical System Using a Dual Discriminator Bayesian-Structural Similarity Generative Adversarial Network (D²BS²GAN) for Real-Time Brain Shift Compensation**Merritt Island****Edgewood Junior/Senior High School****Natarajan, Sharanya Sanjay, 18**

An Integrated Detection and Delivery System To Abate Contaminants in Water Bodies

Miami**Miami Palmetto Senior High School****Guan, Michael, 18**

Feature-Based Multi-Modal Machine Learning for Diabetes Classification in AI-READI

Osprey**Pine View School****Dash, Rohan, 17**

Controllable Multi-Objective Neural Architecture Search via Decision Transformers

Oviedo**Oviedo High School****Santra, Moitri, 16**

Development of an Industrially Viable Neutral pH Oxytetracycline Nanocarrier for Citrus and Stone Fruit Disease Management

Plantation**American Heritage School****Andre, Noah-Duro Christopher, 18**

Isolating, Screening and Identifying Bacteria and Fungi Found Within Mangrove Soil in Florida for Accessible Antimicrobial Natural Products

American Heritage School**Duffy, Isabel Kelly, 18**Laccase-Mediated Degradation of Polyethylene and Polystyrene via Invasion and Ingestion by *Pleurotus ostreatus*

American Heritage School

Duffy, Patricia, 18

Neuroprotective Effects of Astaxanthin in *Caenorhabditis elegans* Amyotrophic Lateral Sclerosis Models

American Heritage School

Iyer, Anagha Lakshmi, 17

A Novel Approach to Sustainable Concrete Engineering: Mechanochemical Activation of Local Waste Materials for CO₂ Reduction

GEORGIA

Atlanta

The Westminster Schools

Ganesh, Samanyu Krishna, 18

Characterizing Variations in the Ruelle Zeta Function Under Conformal Perturbations to the Metrics of Negatively Curved Riemannian 2-Manifolds

College Park

Woodward Academy

Agrawal, Avyakt, 17

A Novel Adaptive Learning Framework Integrating Item Response Theory, Bayesian Knowledge Tracing and Deep Learning With Confidence-Calibrated Feedback Cumming South Forsyth High School

Kothagundla, Soneesh, 17

Hard To Reach or Hardly Reached? Investigating Use of Lung Cancer Screening Among Eligible U.S. Adults Receiving Other Cancer Screenings

Lawrenceville

Gwinnett School of Mathematics, Science, and Technology

Guo, Andrew, 18

Investigating the Role of Intrinsic snoRNA Properties on Ribosomal RNA Modification Heterogeneity

Suwanee

Peachtree Ridge High School

Lee, Eun Jae, 18

Silent Signals: Boronic Acids Quench *E. coli* Quorum Sensing

ILLINOIS

Aurora

Illinois Math and Science Academy

Prasad, Karthik, 18

On Yetter-Drinfeld Modules Over the Pansera Algebras

Chicago

Lane Technical High School

Landeros, Diego Benjamin, 18

Targeted Nitroisoxazole-Based GPX4 Inhibitor Drug Conjugate for Ferroptosis Induction in Chemoresistant Tumors

Latin School of Chicago

Gitelson, Scarlet, 17

Detecting Stellar and Disk Winds Through Absorption Spectroscopy of Black Hole High Mass X-Ray Binary Cygnus X-1

Whitney Young Magnet High School

Xin, Keith, 18

High-Capacity Al³⁺/Fe³⁺-Crosslinked Nanocellulose Hydrogels for Arsenite Removal: A Zero-Waste Approach to Water Remediation

IOWA**Iowa City****West High School****Fan, Winston Derek-Xu, 18**

PsychSPT: A Novel AI System for Mental Health Assessment Using Large Language Models (LLMs)

West High School**Sami, Shanza, 17**

SPECO: A Novel Multiparametric Methane Forecasting and Mitigation System Using Quantum Long Short-Term Memory and Sonophotocatalytic Oxidation

KENTUCKY**Lexington****Paul Laurence Dunbar High School****Hariprasad, Karthika, 17**

A Novel Skin Cancer Detector Using Machine Learning

Louisville**duPont Manual Magnet High School****Ramesh, Vallabh, 18**

Next-Gen Smart Materials: Thermo-Responsive and Conductive 3D Printable Polymer Gels for Diverse Applications

LOUISIANA**Shreveport****Caddo Parish Magnet High School****Trutschl, Maya Julia, 18**

Automated Prediction and Prevention of Pressure Injuries Using Machine Learning and Thermal Sensing: A Clinical Validation Study

MARYLAND**Ellicott City****Centennial High School****Cao, Albert, 18**

Machine Learning Prediction of On/Off Target-Driven Clinical Adverse Events

Centennial High School**Liang, Sophia, 17**

Pharmacologic Soluble Guanylate Cyclase Activation for Suppression of Epithelial-Mesenchymal Transition in Retinal Pigment Epithelial Cells: Implications for Wet Age-Related Macular Degeneration

Poolesville**Poolesville High School****Dong, Angela, 18**

Teaching Robots New Tasks With One Picture (TROP): A Use Case Development Using Edge AI Perception

Poolesville High School**Rifai, Azimullah, 18**

Identification and Functional Validation of Single-Cell Resolved Myeloid Reprogramming Drivers in the Prostate Cancer Bone Metastatic Niche

Poolesville High School

Yu, Alyssa, 17

When Epidemics Meet: Understanding Spatiotemporal Interactions of Two Pathogens on Metapopulation Networks via Reaction-Diffusion Dynamics

Rockville

Thomas S. Wootton High School

Liu, Mason, 18

Developing a Novel BMS-986158 and Flavopiridol Combination Therapy for Treating Pediatric Brain Tumors

Silver Spring

Montgomery Blair High School

Dorobantu, Andrei, 17

Single-Cell Machine Learning Identifies Functionally Distinct Cytokine Families in Macrophages

MASSACHUSETTS

Andover

Andover High School

Sun, Kevin William, 17

Printing 2D MXene-Based Chipless Radio Frequency Identification Tags To Enable Plastic Waste Sorting for Recycling

Boston

Boston Latin School

Chan, Alexander Ang, 18

Gut Microbial Composition and Function Associated With Antidepressant Response: Evidence From a Community-Based Cohort of Older Adults

Byfield

The Governor's Academy

Bace, Matthew, 18

Protecting Native Forest Ecosystems: Using AI-Powered Drones for Identifying and Mapping Invasive Insect Populations

Cambridge

Cambridge Rindge & Latin School

Huybers, Pax Lu, 18

Estimating Ocean Wind Speed From Sea Surface Imagery Using Convolutional Neural Networks

Lexington

Lexington High School

Han, Michael, 18

Improved Bounds for Novelty Games

Lexington High School

Lee, Joa Zoe, 18

Multi-Omics Identification of SDHA Amplification as a Non-Invasive Biomarker in Saliva-Derived ctDNA From Non-Smoker Lung Cancer Patients

Lexington High School

Xu, Jerry, 17

A Unified Protein Embedding Model With Local and Global Structural Sensitivity

Newton Centre

Newton South High School

Yan, Sophia, 17

Mapping Enhancer-Gene Interactions in the Human Brain Reveals Reduced Use of Enhancers for Synaptic Genes in Schizophrenia

Southborough**St. Mark's School****Jiang, Congyi Lucas, 17**

Design of an Ergonomic Active Spinal Exoskeleton for Lifting Assistance

West Roxbury**The Roxbury Latin School****Kesselheim, Maxwell, 18**

Framing Policy Through Humor: A Computational Analysis of Reddit Memes

MICHIGAN**Bloomfield Hills****Cranbrook Kingswood School****Wei, Haodong, 18**

LLM-Powered, Chain of Action (CoA)-Based, Multi-Agent Collaboration for Hexapod-Drone Systems

Cranbrook Kingswood School**Zhang, Shaohuan, 18**

Generalizations of the Zesting Construction

Northville**Northville High School****Gong, Jiaxuan, 18**

Gaussian-Process Generative Model for the QCD Equation of State

Northville High School**Luo, Emma, 17**

Steep Monetary Delay Discounting in Opioid Use Disorder: Application of the Rachlin Hyperbolic Model

Troy**Troy High School****Zhou, Eric, 18**

Adaptive DAG-Based BFT Consensus Protocols Using Machine Learning

MINNESOTA**Elk River****Elk River Area Senior High School****Sivaraj, Indira Rajyalakshmi, 16**

Uncovering Atomic-Level Insights in Metabolic Drug-Target Receptors Using Interpretable Machine Learning

Saint Paul**St. Paul Academy and Summit School****Westemeier, Huxley, 18**

Integrity: Generalized Artificial Image Classification With Noise Domain Localization

Woodbury**East Ridge High School****Huang, Angie, 18**

Entanglement Sudden Death via Repeated Entanglement Swapping

MISSOURI**Saint Louis****Ladue Horton Watkins High School****Lin, Aaron, 17**

The Geometry of a Counting Formula for Deformations of the Braid Arrangement

NEW HAMPSHIRE

Concord

St. Paul's School

Xie, Anfeng, 18

An Energy-Generating and Power-Storing Seashell: An Innovative Attempt To Increase Power Output While Lowering Cost

Exeter

Exeter High School

Osadsky, Viktor, 18

Scoring Radiography Collimation: Quantifying Background Impact Using Neural Networks

Phillips Exeter Academy

Sobeih, Sebastien, 18

The Cross-Dependent PDFS Model and Its Application: Smagorinsky-LES Inspired Subgrid-Scale Models and Multiscale Cascade for Transfer of "Volatile Energy" Within Financial Markets

Phillips Exeter Academy

Song, Andy, 19

Investigating the Molecular Mechanisms of TCERG1 SNP rs79727797 in Modifying Huntington's Disease Onset

Phillips Exeter Academy

Zhang, Celine, 18

Designing Zero-Knowledge Proofs for Agent Motion Planning

NEW JERSEY

Edison

John P. Stevens High School

Santhana Gopalan, Akshat, 18

TARGen: Novel Target-Aware Deep-Generative Framework for De Novo Therapeutic Antibody-Design Develops Antibodies Targeting the Dark Kinome

John P. Stevens High School

Yilmaz, Berkay, 17

DNA Chalk: Calcium Carbonate-Functionalized DNA Tensegrity Triangle Crystals for Targeted Drug Delivery

Hackensack

Bergen County Academies

Dharani, Mythreya, 18

I2-CISSP: An Interpretable Machine Learning Framework for Robust and Practical Prediction of Cisplatin Response in Human Tumors

Bergen County Academies

Ding, Bryan, 18

Adipocyte-Like Cells as a Novel Source of Myofibroblasts in Pulmonary Fibrosis

Bergen County Academies

Jiang, Claire, 18

A Novel In Vitro Cell Culture Model for Juvenile Idiopathic Arthritis

Bergen County Academies

Kang, Edward, 17

RetinaMind: Convergent In Silico and In Vitro Evidence for the Retina as a Novel Biomarker in the Early Diagnosis of Neurodevelopmental Disorders

Bergen County Academies**Tran, Uyen, 19**

Effect of Tamoxifen and 17- β -Estradiol on Lung Adenocarcinoma Proliferation:
What Do We Know About the Role of Sex Hormones in Lung Cancer?

Jersey City**McNair Academic High School****Addanki, Meghana, 17**

Efficient Energy Harvesting Using Biomaterials: Fabrication of a ZnO-Modified Eggshell
Membrane and Cotton Fabric-Based Piezo-Tribo Hybrid Generator

McNair Academic High School**Kota, Mythili Venkata, 17**

Engineering a Novel Electrochemical Biosensor Using a Self-Healing ZnO Quantum Dot
Matrix With MIP Technology for Lysozyme Detection

Lawrenceville**The Lawrenceville School****Yu, Qiuen, 18**

Advancing Phytoremediation of PFAS in Biosolids: Soil Condition Optimization
and Nutrient Preservation

Lincroft**High Technology High School****Arni, Rohan, 17**

Using Deep Learning for Robust Classification of Fast Radio Bursts

Livingston**Livingston High School****Arun, Adhithi, 18**

Platelets Promote Multiple Myeloma Cell Survival and Immune Evasion Through Soluble
Factors and NK Cell Modulation

Millburn**Millburn High School****Wang, Alexander, 18**

Bounds on the Number of Edges in Visibility Hypergraphs

Princeton**Princeton High School****Kapoor, Saurish, 17**

A Deep Learning Approach for an Early and Non-Invasive Diagnosis of Cardiovascular
Disease in Cattle Using Retinal Fundal Images

Princeton High School**Nayden, Eleanor, 18**

Impact of Political Allegiance on H-1B Visa Acceptances to the U.S.: An Analysis of the
Relationship Between UNGA Voting Alignment and H-1B Visa Acceptances to the
United States

Summit**Kent Place School****Zhang, Olivia Du, 17**

Adipocyte-Derived Extracellular Vesicles Reprogram Tumor Cells and Drive Stemness
in Triple-Negative Breast Cancer

Swedesboro**Kingsway Regional High School****Corey, Mason, 17**

AI-Powered Thermal Fingerprinting: Predicting PLA Tensile Strength Through
Schlieren Imaging

Woodbridge**Woodbridge Academy Magnet School****Tyagi, Atharva, 18**

From Mutation to Cure: A Prime Editing Approach to Universal Genetic Rescue in Familial
Hypercholesterolemia

NEW YORK

Ardsley

Ardsley High School

Karthikeyan, Khushi, 18

The Supermassive Problem: Probing Potential Stellar Formation Pathways of Intermediate-Mass Black Holes

Ardsley High School

Tomioka, Serina, 17

Characterizing the Spatial Dynamics of CD44 and Amyloid-Beta Plaques in Human Alzheimer's Disease Brain

Armonk

Byram Hills High School

Charney, Max, 18

Harnessing Millions of Consumer Reviews To Reveal Societal Trends at an Unprecedented Scale: Two Proof-of-Concept Studies for a Novel Computational Social Science Approach

Byram Hills High School

Coady, Lindsay, 17

The Identification of Anti-Complement Autoantibodies in Schizophrenia: A Novel Gene by Environment Hypothesis of Autoimmunity in Neuropsychiatric Disorders

Bellmore

John F. Kennedy High School

Stern, Cole Jacob, 17

Investigating the September 29, 2023, Tri-State Flooding Event: A WRF-Based Analysis of Tropical Storm Ophelia, Elevated Sea Surface Temperatures and Their Role in Enhancing Extreme Rainfall

Briarcliff Manor

Briarcliff High School

Malioneck, Elias, 18

The Effects of Education of Interpersonal Relationships and Positive Masculinity in a Group Environment Led by a Same-Sex Peer With Adolescent Males on Depression, Self-Esteem and Ideologies of Masculinity

Bronx

Bronx High School of Science

Igel, Liah, 17

Human Cell-Based Assay and Mouse Tissue Analysis To Study FSHR Signaling in Parkinson's Disease

Bronx High School of Science

Krasinski, Aaron Eli, 18

A Novel Deep Learning Approach to the Health Crisis of Industrial Production in Space: Neural Network Classification and Glymphatic Biomarker Analysis of Spaceflight-Associated Neuro-Ocular Syndrome for Pre-Flight Crew Screening

Bronx High School of Science

Land, Sam, 17

Novel Characterization of COMT Gene Polymorphism Effects on Resting-State fMRI Network Segregation: A Breakthrough for Personalized Mental Health Treatment

Bronx High School of Science

Lin, Helen, 18

Human Intervertebral Disc Degeneration, Sex and Aging Increase Alpha-1 Antitrypsin Expression in Intervertebral Discs

Bronx High School of Science

Wu, Xi Zhen, 18

Exploring the Potential of Inhaled Tadalafil Liposomes for Pulmonary Arterial Hypertension

Brooklyn	Brooklyn Technical High School Gordon, Alisa Victoria, 17 The Effects of Acute and Chronic Sleep Deprivation on Metabolic Dysregulation via AgRP Neuronal Activity in the Arcuate Nucleus
	Brooklyn Technical High School Nostro, Olivia Grace, 17 Effects of Non-Pharmacological Treatments on Seizure Duration in Bang-Sensitive <i>Drosophila melanogaster</i> Mutants
Chappaqua	Horace Greeley High School Fu, Warren, 17 Biophysical and Genomic Drivers of Targeted Therapy Resistance: Analysis of Growth Dynamics in Non-Small Cell Lung Cancer
	Horace Greeley High School Guo, Kevin, 17 Development of an Antibody-siRNA Conjugation Method and Internalization Assay for High-Throughput Screening
	Horace Greeley High School Wang, Brady, 18 Generation of Antibody Oligonucleotide Conjugates Using a Novel Conjugation Technology
Dix Hills	Half Hollow Hills High School West Huang, Benson Lu, 17 BLADE: Bioimpedance-Enabled Laparoscopic Articulated Dual-Purpose Endowrist System for Force Sensing and Anomaly Detection in Robotic Surgery
East Setauket	Ward Melville High School Xing, Tina Shuxin, 17 Carbon-Aware Reserve Allocation and Checkpoint Scheduling for GPU Sustainability
Fresh Meadows	St. Francis Preparatory School Wang, Yanchen, 17 Characteristics and Risk Factors of Anomalous Sleep Experience (Sleep Paralysis) in American Adolescents
Great Neck	John L. Miller Great Neck North High School Li, Sophia, 18 Closing the Shade Gap: Advancing Environmental Equity Through Understanding Tree Canopy Disparities in Redlined Communities With i-Tree
	John L. Miller Great Neck North High School Soleymani, Kian Daniel, 17 AI-Powered Conversational Tool for Early Stage Cognitive Decline
	William A. Shine Great Neck South High School Pemmaraju, Arnav, 18 CRE-LogicSim: A Surrogate Modeling Framework for Interpreting Cis-Regulatory Element Function in Deep Sequence Models
Guilderland Center	Guilderland Central High School Wu, Flora Rain, 17 The Impact of Maternal Risk Factors and Drinking Water Contaminants on Cyanotic Congenital Heart Defects

Harrison

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