

# 2021 Delaware Valley Science Fairs Winners

## Category Awards

### A Fair - 12th Grade

#### Medals

Gold - Arya Tschand - High Technology High School	Implementation of Novel Semi-Supervised Machine Learning Model into Autonomous Irrigation Network Optimized for Power Self-Sufficiency
Silver - Giovanna Onofrietti - Toms River High School North	Effects of Bioactive Compounds of Berry Seed Extract on Cariogenic and Periopathogenic Bacteria
Bronze - Bill Zhang - Holmdel High School	Dendritic Degeneration in Pyramidal Neurons of the Hippocampus in Neonatal Mice with Hydrocephalus

### Behavior & Social Science

1st Place	12TH-C01-0627	Examining the Effects of Sex Education on LGBTQ Identifying Individuals and LGBTQ Identifying Families Daniel Wang - Holmdel High School
2nd Place	12TH-C01-0271	Living to be Positive Mikayla Havers - Central Bucks West High School
3rd Place	12TH-C01-0270	Magnetoreception in Drosophila raised in a Magnetic Field Abraham Eldo - Council Rock High School North
Honorable Mention	12TH-C01-0738	Sensory and Taste: The Effect of Sound on the Perceived Taste Profile of a Chip Belinda Yeung - Freedom High School Sebastian Jaskowski - Freedom High School Shivam Chand - Freedom High School

### Biochemistry

1st Place	12TH-C02-0699	Effects of Bioactive Compounds of Berry Seed Extract on Cariogenic and Periopathogenic Bacteria Giovanna Onofrietti - Toms River High School North
2nd Place	12TH-C02-0464	Hoping for Soap: What is the Best Type of Soap? Sarah Young - Methacton High School

### Botany

1st Place	12TH-C03-0276	The Role of Aluminum Resistance Genes against Pisum Sativum Phytotoxicity Glenda Armas - Central Bucks High School South
2nd Place	12TH-C03-0735	The effect of water type on plant growth Sujhila Altayeb - freedom high school
3rd Place	12TH-C03-0648	Examining the Germination Rate of Ammophila breviligulata Under Various Climatic Conditions Caitlin Sia - Marine Academy of Technology and Environmental Science (MATES)

## Chemistry

- 1st Place 12TH-C04-0653 Catalyzing Photodegradation in Commercial Plastics  
Caitlin O'Brien - Emmaus High School
- 2nd Place 12TH-C04-0280 Enhancing the Transdermal Drug Delivery of Risperidone  
Michell Lin - Central Bucks High School-West
- 3rd Place 12TH-C04-0281 A Weakness in the "Invulnerable" Superbugs, Mur Proteins and Molecule Testing to Disable Them  
Partha Panicker - Central Bucks South High School
- Honorable Mention 12TH-C04-0406 Making Usable Digestible Biodegradable Plastics  
Margaret Smith - Upper Darby High School

## Computer Science

- 1st Place 12TH-C05-0683 Streamlining Scheduling with Simulated Annealing  
Matthew Magee - Emmaus High School
- 2nd Place 12TH-C05-0282 Speech Emotion Recognition in VR  
Julianne Kruse - Council Rock North
- 3rd Place 12TH-C05-0494 Pose Estimation for Physical Therapy  
Rohan Mehta - Souderton Area High School
- Honorable Mention 12TH-C05-0487 Identifying Important Genes in Bat-Transmitted Viruses  
Kevin Cui - Germantown Academy

## Earth & Space Science

- 1st Place 12TH-C06-0635 Visual Simulation of Predictive Satellite Motion  
Vanessa Bellotti - Holmdel High School
- 2nd Place 12TH-C06-0506 Using Sunspots as Solar Flare Predictors  
Erin Gavin - Souderton Area High School

## Engineering

- 1st Place 12TH-C07-0590 Implementation of Novel Semi-Supervised Machine Learning Model into Autonomous Irrigation Network Optimized for Power Self-Sufficiency  
Arya Tschand - High Technology High School
- 2nd Place 12TH-C07-0309 A Novel Soft Robotic Actuator with Computerized Control and Integrated Positional Sensors  
Carter Gassler - Avon Grove Charter School
- 3rd Place 12TH-C07-0288 Pectin as a Temperature sensor  
Ruhani Gill - Council Rock High School North
- Honorable Mention 12TH-C07-0286 Usability of Recycled ABS via Filament Extrusion for 3D Printing Applications  
Cameron Schmidt - Central Bucks West
- Honorable Mention 12TH-C07-0656 Arduino Programmed Mechanical Sign Language Hand  
Reese Goldberg - Holmdel High School

## Environmental Science

- 1st Place 12TH-C08-0289 Effect of Climate Change on Rainfall in Delaware Valley Region  
Matthew Timofeev - Central Bucks High School South
- 2nd Place 12TH-C08-0525 A Data Analysis of the Impact of Hydraulic Fracturing on Extrasosseous Sarcomas  
Saadya Rao - Methacton High School
- 3rd Place 12TH-C08-0445 Determining the Viability of Worm Castings as a Sustainable, Environmentally-Friendly  
Alternative Energy Source  
Shirin Kaye - Jack M. Barrack Hebrew Academy
- Honorable 12TH-C08-0310 Do you really need to rake all those leaves?  
Mention  
Lauren Young - Bishop Shanahan High School

## Mathematics

- 1st Place 12TH-C09-0292 The potential use of Fractal randomness for Encryption  
Minseo Oh - Central Bucks High School West
- 2nd Place 12TH-C09-0116 The Phi Moment  
Elizabeth Fellingner - Pennsville Memorial High School
- 3rd Place 12TH-C09-0741 Modelling Economic Indicators to Create a Predictive Model of Future CO2 Emissions in  
China  
Ayan Lateef - Holmdel High School

## Medicine & Health

- 1st Place 12TH-C10-0388 Dendritic Degeneration in Pyramidal Neurons of the Hippocampus in Neonatal Mice  
with Hydrocephalus  
Bill Zhang - Holmdel High School
- 2nd Place 12TH-C10-0295 The Pharmacologic Induction of cGAS and STING in Epigenetically Silenced  
Hepatocellular Carcinoma  
Elizabeth Zuerblis - Central Bucks High School South
- 3rd Place 12TH-C10-0591 A Novel Detection Tool for Parkinson's Using Articulation Patterns and Machine  
Learning: Year 2  
Purva Gupta - Parkland High School

## Microbiology

- 1st Place 12TH-C11-0688 Comparison of Pseudomonas sp. Vitality During in vitro Utilization of Poly(1-  
phenylethylene) and a Sustainable Bioplastic Alternative  
Lana Van Note - Marine Academy of Technology and Environmental Science
- 2nd Place 12TH-C11-0389 Investigating Proliferation of Staphylococcus epidermidis in Varying Hand  
Microenvironments Post-Sanitation  
Kathleen Antonakakis - Holmdel High School
- 3rd Place 12TH-C11-0297 Inhibiting SARS-CoV-2 Spike Mediated Entry into Host Cells  
Alexandra Schramm - Central Bucks High School East

## Physics

- 1st Place 12TH-C12-0736 Effect of Nonconductive Sleeve on Muon Interaction Rate  
Jake Rice - Toms River High School South
- 2nd Place 12TH-C12-0564 Effect of Host Star on Exoplanet Habitability  
Kenny Hermus - Methacton High School  
Sahil Kuwadia - Methacton High School
- 3rd Place 12TH-C12-0300 Fundamental Frequencies of Gases of Varying Density in a Rubens' Tube  
Riya Keshri - Central Bucks High School West

## Zoology

- 1st Place 12TH-C13-0694 The Effect of Plant Nutrient Dilution Associated with Elevated Atmospheric Carbon Dioxide on the Life-History Traits of *Actias luna*  
Carolyn Almonte - Burlington Township High School
- 2nd Place 12TH-C13-0577 Inducing dysbiosis in Crickets with *L. acidophilus*  
Sarah Rojas - Germantown Academy
- 3rd Place 12TH-C13-0304 Analysis of the Effects Environmental Factors on Bird Species  
Griffin Smith - Central Bucks High School West

## B Fair - 11th Grade

### Medals

Gold - Leo Wylonis - Conestoga High School	Novel Fully MRI Compatible Nonmagnetic and Dielectric Pneumatic Servo Motor for MRI Guided Surgical Robotics
Silver - Maya Butani - Moorestown High School	Stem Cell Behavior and Osteogenic Differentiation on Plant-Derived Scaffolds
Bronze - Jason Wang - Germantown Academy	Brain Inflammation Induced by Chronic Sleep Deprivation

### Behavior & Social Science

1st Place	11TH-C01-0321	Social Conformity in a Virtual Setting - Re-evaluating Asch (1951) Irene Abraham - Downingtown STEM Academy
2nd Place	11TH-C01-0398	The Effect of Nursing Home Neglect Precautionary Measures on How the Elderly View Potential Nursing Home Selections Ryan Schager - Marine Academy of Technology and Environmental Science
3rd Place	11TH-C01-0456	Mental Health in the U.S. Amidst the COVID-19 Pandemic Irene Biju - Methacton High School

### Biochemistry

1st Place	11TH-C02-0612	Stem Cell Behavior and Osteogenic Differentiation on Plant-Derived Scaffolds Maya Butani - Moorestown High School
2nd Place	11TH-C02-0409	Ancestral Sequence Reconstruction of Lasso Peptides for New Drug Functions Katherine Li - Garnet Valley High School
3rd Place	11TH-C02-0275	The Selective Killing Mechanism of Melittin Lucas Guernon - Central Bucks High School East
Honorable Mention	11TH-C02-0273	Utilizing Computational Drug Discovery Models to Predict SARS-CoV-2 Protease Inhibitors Phoebe Vallapureddy - Central Bucks High School East
Honorable Mention	11TH-C02-0274	Evaluating Known Protease Inhibitors for Activity Against the SARS-CoV-2 3CL Protease Jonathan Sim - Central Bucks High School South

### Botany

1st Place	11TH-C03-0141	Information Exchanges of Group Plants through Root Exudates and Acidified Soil Effect Alisa Jia - Springside Chestnut Hill Academy
2nd Place	11TH-C03-0613	Fruit Seed Extract Effects on Pathogens Prevalent in Oral Disease Julietta Onofrietti - Toms River High School North
3rd Place	11TH-C03-0277	The Effect of Aluminum Toxicity on Pea Root Cap Cells Veronica Swartz - Central Bucks High School South
Honorable Mention	11TH-C03-0139	What is the minimum concentration of sodium chloride that impedes germination and growth of Lactuca sativa L. var. Buttercrunch? Benita Balogun - Central High School

## Chemistry

1st Place	11TH-C04-0279	Evaluating Existing Protease Inhibitors' Efficacy Against the SARS-CoV-2 Coronavirus Krishnakanth Katakota - Central Bucks High School South
2nd Place	11TH-C04-0655	Comparison of Antioxidant Levels in Synthetic and Natural Sources of Vitamin C Sana Nauman - Parkland High School
3rd Place	11TH-C04-0319	The Effect of Various pH Levels Ranging from 2-5 on the Solubility of Acetaminophen, Ibuprofen, and Naproxen Pooja Pandya - Downingtown STEM Academy
Honorable Mention	11TH-C04-0320	Effects of Coffee on Antacid Acid Neutralization Nikitha Kanumuru - Downingtown STEM Academy
Honorable Mention	11TH-C04-0410	How Cold Can a Model Volcano Get? Paige Shelton - Academy of Notre Dame de Namur

## Computer Science

1st Place	11TH-C05-0324	Weather Adaptive Blind Crutch Yangyue (Martin) Ma - Westtown School
2nd Place	11TH-C05-0284	Computational Fluid Dynamics of COVID-19 Particle Dispersion in Classrooms Paul Kim - Central Bucks High School- East
3rd Place	11TH-C05-0709	Improving Efficiency of SISL Authentication Theodor Urban - Moravian Academy
Honorable Mention	11TH-C05-0042	The effectiveness of varying Algorithms on learning speed Saiadhityan Babu - Charter School of Wilmington
Honorable Mention	11TH-C05-0395	UniVaccine: A Novel Global Web Portal to Collect, Analyze, and Predict COVID-19 Vaccine Data and Trends Olivia Takla - Marine Academy of Technology and Environmental Science
Honorable Mention	11TH-C05-0400	Real-Time Verification of Social Distancing Protocols With an Unmanned Aerial Vehicle and Convolutional Neural Network Aarav Patel - Manalapan High School

## Earth & Space Science

1st Place	11TH-C06-0587	Effect of Plants on Coastal Dune Erosion Juliet Slota - Marine Academy of Technology and Environmental Science
2nd Place	11TH-C06-0165	Environmental Factors & Lyme Disease Distribution in the U.S Mehonuma Naureen - Central High School
3rd Place	11TH-C06-0386	Utilizing WAAS Capable GPSs to Track and Create a Prediction Model for Geomagnetic Storms in the Ionosphere Emily Jones - Marine Academy of Technology and Environmental Science (MATES)
Honorable Mention	11TH-C06-0166	The effect of COVID-19 on Carbon Emissions Oscar Gerber - Central High School

## Engineering

1st Place	11TH-C07-0322	Novel Fully MRI Compatible Nonmagnetic and Dielectric Pneumatic Servo Motor for MRI Guided Surgical Robotics Leo Wylonis - Conestoga High School
2nd Place	11TH-C07-0621	Seawall Design & Engineering Man Cao - Cherry Hill High School West
3rd Place	11TH-C07-0676	Creating a Narrowband Radar with Simultaneous Distance and Velocity Sensing Using Low-Cost Software Defined Radio (SDR) and Mini Raspberry Pi Computer Victor Cai - Parkland High School
Honorable Mention	11TH-C07-0412	Remember Me Ashley Tang - Episcopal Academy
Honorable Mention	11TH-C07-0516	Optimization of Extraoral Aerosol Suction Device using CFD Peter Liu - Upper Dublin High School
Honorable Mention	11TH-C07-0603	A Novel Vertical Ground Reaction Force Based Detection System for Parkinson's Disease Sidharth Srivastava - High Technology High School

## Environmental Science

1st Place	11TH-C08-0520	Detecting water contaminants with bioluminescent <i>V. fischeri</i> Blythe Berlinger - Germantown Academy
2nd Place	11TH-C08-0597	Comparison of the Phycoremediation Capabilities of <i>Chlorella autotrophica</i> and <i>Spirulina</i> for Heavy Metals and Biosorption of Nitrogen and Phosphorus at Varying Haline Levels Lakshmi Yannam - Marine Academy of Technology and Environmental Science (MATES)
3rd Place	11TH-C08-0684	Testing the Ability of Wax Worms to consume Plastic Cody McBride - HomeSchool
Honorable Mention	11TH-C08-0183	Uptake of Microplastics derived from Daily-used plastic cutting boards Haotian Yang - Springside Chestnut Hill Academy
Honorable Mention	11TH-C08-0185	Climate Change with Warbler Spring Migration Dates Michaela Jaeger - Central High School
Honorable Mention	11TH-C08-0524	The Recycling of Polystyrene into a Liquid Adhesive Emily Marshall - Upper Dublin High School
Honorable Mention	11TH-C08-0728	Using Activated Carbon from Maple Leaves to Remove Herbicides from Water Samit Mohapatra - Moravian Academy

## Mathematics

- 1st Place 11TH-C09-0293 Benford's Law & LDL-C Levels  
Jason Rackas - Central Bucks High School East
- 2nd Place 11TH-C09-0314 Mean Fibonacci (Fib) retracement tool accuracy (in conjunction with Zig Zag Indicators)  
when applied to stocks of different measured historical volatility.  
Kavish Saini - Downingtown STEM Academy
- 3rd Place 11TH-C09-0536 Effectiveness of Covid-19 Dining Capacity Limits on Cases  
John Riley - Upper Dublin High School
- Honorable Mention 11TH-C09-0532 Using the Riemann Zeta Function to Explain the Ramanujan Sum  
Atharv Awasthi - Germantown Academy

## Medicine & Health

- 1st Place 11TH-C10-0542 Brain Inflammation Induced by Chronic Sleep Deprivation  
Jason Wang - Germantown Academy
- 2nd Place 11TH-C10-0323 Controlled Drug Release Through a Novel Polymeric Matrix  
Shayl Chetty - Conestoga High School
- 3rd Place 11TH-C10-0040 Remote gait analysis as a proxy for traditional gait laboratories: Utilizing smartphones as  
a wearable patient-implemented solution for assessment of gait across differing terrains  
Arjan Kahlon - Charter School of Wilmington
- Honorable Mention 11TH-C10-0624 Comparison of the Effectiveness of Multiple Layers of Masks (non-medical disposable  
mask in combination with a KN95 or cloth mask) versus the N95 Mask  
Shaiyan Feisal - Parkland High School
- Honorable Mention 11TH-C10-0692 An Imperfect Pandemic  
Mari Dopler - Sussex Technical High School

## Microbiology

- 1st Place 11TH-C11-0201 3D Structures and Functions for COVID-19  
Roshini Govindasamy - Northeast High School
- 2nd Place 11TH-C11-0556 The Effect of Face Masks on Acne  
Riya Palkar - Germantown Academy
- 3rd Place 11TH-C11-0628 Designing Immunogenic Epitopes from SARS-CoV-2 Non-structural Proteins as a  
Diagnostic for Assessing Vaccine Efficacy and Protection  
Rayan Jawa - Holmdel High School
- Honorable Mention 11TH-C11-0299 Inducing the Selective Killing of HBV-Infected Cells by Integrant-Targeted Delivery of  
Proapoptotic BCL2 Genes  
Srinithi Krishnamoorthy - Central Bucks High School South



## Physics

- 1st Place 11TH-C12-0325 A Novel Drone-based Application to Determine and Monitor Air and Soil Temperature Distributions in Indoor Farming Environments  
Arnab Sircar - Unionville High School
- 2nd Place 11TH-C12-0593 Evaluation of Common Solutions Utilized to Reduce Wave Power in Marinas  
Annabel Bornebusch Bornebusch - Marine Academy of Technology and Environmental Science
- 3rd Place 11TH-C12-0563 Bridges : Weight Bearing Capacity  
Sanskriti Gupta - Methacton High School
- Honorable Mention 11TH-C12-0043 Second-order Jahn-Teller reconstruction in defective graphene  
Claire Andreasen - Charter School of Wilmington
- Honorable Mention 11TH-C12-0568 Proving That the Universe Is Infinitely Expanding  
Zachary Seidner - Upper Dublin High School

## Zoology

- 1st Place 11TH-C13-0582 Inhibiting Spotted Lanternfly Reproduction  
Sangeetha Bhuyan - Germantown Academy
- 2nd Place 11TH-C13-0381 The Effects of a Novel Aquatic Microplastic Removal Method Utilizing Ferrofluid on *Palaemonetes* spp.  
Shealyn Lawless - Marine Academy of Technology and Environmental Science
- 3rd Place 11TH-C13-0576 Does the Period of Time and Temperature of Cold Exposure Period Affect the Hatching of *Lycorma delicatula* Eggs?  
Skye Scarlett - Souderton Area High School
- Honorable Mention 11TH-C13-0394 Effectiveness of Crickets Reared on Vegetable Waste  
Ilyas Kose - Moravian Academy
- Honorable Mention 11TH-C13-0581 The Effect of Gut Microbiota on Parkinson's Disease in *Drosophila*  
Bridget Magee - Souderton Area High School

# C Fair - 10th Grade

## Medals

Gold - Yash Prabhu - North Penn Senior High School	Autonomous COVID-19 Screening Using Deep Learning and Low-cost Thermal Imaging
Silver - Jue Gong - High Technology High School	The Study of the Effect of Topspin on the Trajectory of a New Tennis Ball
Bronze - Lucy Wang - Methacton	Single-cell atlas of mouse colitis tissue

## Behavior & Social Science

1st Place	10TH-C01-0722	The Correlation of Socioeconomic and Political Status on Vaccination Opinions Katherine Elmer - Marine Academy of Technology and Environmental Science
2nd Place	10TH-C01-0452	Effectiveness of blue light blocking glasses on sleep Raina Bandekar - Germantown Academy
3rd Place	10TH-C01-0454	Perception vs. Reality: How Society Sees Itself Sara Frankel - Lower Moreland High School
Honorable Mention	10TH-C01-0306	What is more effective for reading comprehension: Online or Print? Paree Pasi - Central Bucks West High School

## Biochemistry

1st Place	10TH-C02-0458	Single-cell atlas of mouse colitis tissue Lucy Wang - Methacton
2nd Place	10TH-C02-0335	The Effect of Egg White Protein Denaturation by Altering pH Prior to Heat Exposure Katrina Banardi - Unionville High School
3rd Place	10TH-C02-0647	Determining the Best Lipid to Aid in the Absorption of Fat-Soluble Vitamins for those Affected by Celiac Disease Sarah Grenz - Marine Academy of Technology and Environmental Science
Honorable Mention	10TH-C02-0463	Healthy vs. Unhealthy Fat in Various Foods Meggan Shvartsberg - Lower Moreland High School
Honorable Mention	10TH-C02-0618	Conducting a Feasibility study: Determining if waste products can be utilized to grow Physarum Polycephalum slime mold for biofuel production Matthew Sonn - Cherry Hill High School West

## Botany

1st Place	10TH-C03-0641	Examining the Efficacy of Phragmites australis Cellulose as a Source of Bioplastics Emilia Savich - MATES
2nd Place	10TH-C03-0716	L-Tryptophan as a Novel Alternative Biostimulant for Soybean Seedling Growth Yuvna Musuku - High Technology High School
3rd Place	10TH-C03-0550	The Effect of Different Growing Mediums on the Growth of Mentha spicata Siddharth Avhad - High Technology High School
Honorable Mention	10TH-C03-0024	Salt Effects on Plants: The Testing of Sodium Chloride and Fertilizers on Small Red Beans William Cao - Vineland High School South
Honorable Mention	10TH-C03-0606	Compostly Planted: A Study of How Different Types of Compost and Soil Affect Plant Growth Keyan Vojdani - Moorestown High School

## Chemistry

- 1st Place 10TH-C04-0397 Investigate and Improve the Therapeutic Window of an Organic Fungal Treatment  
Daniel Lin - High Technology High School
- 2nd Place 10TH-C04-0482 Retention Invention: Increasing the Sustainability and Efficiency of Pesticide Application  
Through the use of Surfactants  
Daniel Porotov - Lower Moreland High School
- 3rd Place 10TH-C04-0252 Methods to Reduce the Level of Corrosion on Copper and Steel in Aquatic Environments  
Jonathan Zhang - Central Bucks West High School

## Computer Science

- 1st Place 10TH-C05-0490 Autonomous COVID-19 Screening Using Deep Learning and Low-cost Thermal Imaging  
Yash Prabhu - North Penn Senior High School
- 2nd Place 10TH-C05-0419 Identification of Conflicting Genetic Variant Classifications Using Artificial Neural  
Networks  
Ashley Zhou - Ivymind Academy
- 3rd Place 10TH-C05-0702 SelfSeg: A Novel Framework For the Self-Supervised Segmentation of Video Frames  
Using Graph Neural Networks (GNNs)  
Rohan Mehta - Moravian Academy
- Honorable  
Mention 10TH-C05-0727 The Effect of Color Contrast on Machine Learning Image Recognition  
Albert Dong - High Technology High School

## Earth & Space Science

- 1st Place 10TH-C06-0665 Amateur Surveying of Exoplanets using Data from the Transiting Exoplanet Survey  
Satellite (TESS)  
Kristen Wepler - Marine Academy of Technology and Environmental Science (MATES)
- 2nd Place 10TH-C06-0503 Evaluation of Various Kitchen Wastes as Feedstock for Ethanol Production  
Parmesh Sivakumar - Methacton High School
- 3rd Place 10TH-C06-0626 Transiting Exoplanet Survey Satellite: Analysis of Light Curve Data  
Timothy Bykowski - Marine Academy of Technology and Environmental Science
- Honorable  
Mention 10TH-C06-0164 The Future of Wind Power in PA  
Brian Niedermeier - Central High School

## Engineering

- 1st Place 10TH-C07-0332 Plants to Paper  
Claire Fader - Bishop Shanahan High School
- 2nd Place 10TH-C07-0723 Contactless Sleep Monitoring Using mmWave Doppler Radar  
Varun Pandian - Parkland High School
- 3rd Place 10TH-C07-0704 A Comparison of Different Types of Foam for Reducing Sound Level  
Spencer Lyudovyk - High Technology High School
- Honorable  
Mention 10TH-C07-0034 ViralSafe  
Varun Vadhera - The Charter School of Wilmington
- Honorable  
Mention 10TH-C07-0510 Mechatronic Therapeutic Glove for Arthritis Patients  
Vrishti Yadav - North Penn High School

## Environmental Science

- 1st Place 10TH-C08-0375 Saving the Forests by Unleashing Farmland Productivity: A Biofilm Approach  
Reva Gandhi - Parkland High School
- 2nd Place 10TH-C08-0588 A Comparison of Common Filtering Techniques of Microplastics in Water  
Victoria Yakes - Marine Academy of Technology and Environmental Science
- 3rd Place 10TH-C08-0421 Energy Avatar: Water Bending  
Shawn Wang - Episcopal Academy
- Honorable Mention 10TH-C08-0099 Creating Biodegradable Plastic  
Danielle Hughes - Woodstown High School
- Honorable Mention 10TH-C08-0334 A Sustainable Solution for Controlling Phoridae in Mushroom Houses  
Sofia Trone - Avon Grove High School
- Honorable Mention 10TH-C08-0522 Impact of Soil Acidification on Plants Growth  
Spencer Westover - Germantownacademy
- Honorable Mention 10TH-C08-0620 Determining the effectiveness of using physarum plasmodium to degrade motor oil  
Nina Biedebach - Cherry Hill High School West

## Mathematics

- 1st Place 10TH-C09-0531 Identifying what improves survival rates for drug overdoses  
Adhiraj Gadre - Germantown Academy
- 2nd Place 10TH-C09-0307 Medical Equipment Supply Chain Optimization and Stability Study using Deep Reinforcement Learning  
Zhuoxun Chen - George School
- 3rd Place 10TH-C09-0263 Optimal Strategies for Controlling a Pandemic  
Clare Rajapakse - Central Bucks High School - East
- Honorable Mention 10TH-C09-0100 Dance Genre Vs. Music Tempo  
Lucy Miller - Woodstown High School
- Honorable Mention 10TH-C09-0537 Analyzing Covid-19 Data to Predict Future Trends  
Chinmay Bapat - Methacton High School
- Honorable Mention 10TH-C09-0538 Prediction of COVID-19 Case Rate Using Previous Time Periods  
Megan Lim - Upper Dublin High School

## Medicine & Health

- 1st Place 10TH-C10-0691 A Creation for the Braced  
Krisha Patel - Egg Harbor Township High School
- 2nd Place 10TH-C10-0402 Bio-responsive Microneedle Smart Patch For Auto-anticoagulation Regulation  
Saanvi Mehta - Mainland Regional Highschool
- 3rd Place 10TH-C10-0385 Gene Therapy in A549 Lung Cancer Cells: Antitumoral Effects of CRISPR/Cas9-Facilitated  
Telomerase Activity Inhibition Coupled with Suppressed KRAS Expression  
Vishruth Hanumaihgari - Parkland High School
- Honorable 10TH-C10-0328 Analyzing the Molecular Relationship Between Tay-Sachs Disease and Amyotrophic  
Mention Lateral Sclerosis Through A Bioinformatics Approach  
Wafiza Julkipli - Downingtown STEM Academy
- Honorable 10TH-C10-0551 Impact Of Subgroup-Based Testing On COVID-19 Positivity Rate  
Mention Sameeksha Panda - Methacton High School
- Honorable 10TH-C10-0696 Unmasking the Secrets of Bacteria: Which masks best prevent the transmission of  
Mention disease?  
Arun Chhugani - Freedom High School  
Krishna Korrapati - Freedom High School

## Microbiology

- 1st Place 10TH-C11-0557 The Role of Vitamin E in Inhibiting Chemotherapy-induced Cytotoxicity  
Matthew Uppani - Methacton High School
- 2nd Place 10TH-C11-0404 Comparing UVC Radiation and Commercial Disinfectants to Reduce Coagulase-negative  
Staphylococci (CoNS)  
Bethany Mariel Suliguin - Marine Academy of Technology and Environmental Science (MATES)
- 3rd Place 10TH-C11-0705 Erythritol and Aloe Vera Gel Effects on Oral Bacteria in Early Childhood Caries  
Vivianna Onofrietti - Toms River High School North
- Honorable 10TH-C11-0553 How Far Does a Sneeze Travel?  
Mention Sneha Chaudhuri - Upper Dublin High School

## Physics

- 1st Place 10TH-C12-0399 The Study of the Effect of Topspin on the Trajectory of a New Tennis Ball  
Jue Gong - High Technology High School
- 2nd Place 10TH-C12-0690 Using Vacuum Insulation And Reflective Surfaces To Isolate Thermoelectric Systems  
Wisdom Ufondu - Moravian Academy Upper School
- 3rd Place 10TH-C12-0108 String Decay On Differing Density Materials  
Taylor Barrow - Woodstown Reginal Highschool
- Honorable 10TH-C12-0401 The Effect of Different Conductivity Metals on Cellphone Wifi Connection Speed  
Mention Andrew Wang - High Technology High School

## Zoology

- 1st Place 10TH-C13-0575 Does Coenzyme Q help or worsen Mitochondrial disease?  
Kayla D'Eletto - Germantown Academy
- 2nd Place 10TH-C13-0667 The Effects of Varying Chem Light Colors on *Fundulus heteroclitus* Attraction  
Calli Dunn - The Marine Academy of Technology and Environmental Science
- 3rd Place 10TH-C13-0666 The Effects of Carbon Dioxide on *Engina mendicaria* and *Nassarius* sp.'s Diet in  
Response to Climate Change  
Arliana Torres - Marine Academy of Technology and Environmental Sciences

## D Fair - 9th Grade

### Medals

Gold - Kaitlyn Culbert - Toms River High School North	Breakthroughs in Honeybee Health: Continuous-Release Mist Diffusion of Thymol-Based Essential Oils
Silver - Riya Sikand - Ranney School	SPOTNET: A Novel End-to-End Algorithm that Utilizes Convolutional Neural Networks to Recognize Potholes in Two-Dimensional Monocular Images
Bronze - Srilekha Mamidala - Garnet Valley High School	The SLED (Shelf Life Expiration Date) Tracking System: Combating Food Waste and Food Borne Illnesses From Expiration Using Machine Learning

### Behavior & Social Science

1st Place	9TH-C01-0339	This Is the Bad Place Saarvi Chigurupati - Downingtown STEM Academy
2nd Place	9TH-C01-0037	Risk-Reward Returns: Consumer Investing Behavior Veer Pahwa - Tower Hill School, Wilmington, Delaware
3rd Place	9TH-C01-0451	The amount of Covid-19 Cases affecting anxiety in adolescents Sarah-Grace Coren - Germantown Academy
Honorable Mention	9TH-C01-0426	Do Colors Affect Learning? Alaina Swift - upper darby high school
Honorable Mention	9TH-C01-0609	The Impact of Telemedicine during COVID-19 Kanchan Gupta - Moravian Academy Upper School

### Biochemistry

1st Place	9TH-C02-0585	A Cytogenetic Analysis of Vaping Liquid's Effect on the Genetic Development of Drosophila Melanogaster Vidhi Desai - Parkland High School
2nd Place	9TH-C02-0347	Optimizing the Design of a Biodegradable Starch Film to Prolong Storage of Produce Kieran Chetty - Conestoga High School
3rd Place	9TH-C02-0247	Let's Digest Without Bile! Jasmin Kainth - Tohickon Middle School

### Botany

1st Place	9TH-C03-0342	Which Plant Produces the Highest Amount of Electricity? Arjun Suryawanshi - Unionville High School Rohan Kapoor - Unionville Highschool
2nd Place	9TH-C03-0475	Effects of mung bean microwave exposure on plant height Alexis Andrulonis - Upper Dublin High School
3rd Place	9TH-C03-0476	Do Certain Sounds Help Plants Grow? Yashwanth Chinnpapannagari - Upper Dublin High School
Honorable Mention	9TH-C03-0477	Explaining the Shape of Zucchini Leaves Gus Platt - Upper Dublin High School

## Chemistry

1st Place	9TH-C04-0253	Types of Vinegar vs. The Molar Concentration of Acetic Acid Abbigail Turco - Villa Joseph Marie
2nd Place	9TH-C04-0089	Measuring the Concentration of Blue Dye in Different Sports Drinks Molly Curtis - Woodstown High School
3rd Place	9TH-C04-0483	Alum or Copper? Aditya Pasumarthi - Methacton High School
Honorable Mention	9TH-C04-0011	Which Wood is Good? Isabela Saltar - CCTEC
Honorable Mention	9TH-C04-0343	Freezing Water Dean Carangan - Bishop Shanahan High School
Honorable Mention	9TH-C04-0484	How Much Fat is REALLY in Your Food? John Akladus - Methacton HS

## Computer Science

1st Place	9TH-C05-0448	SPOTNET: A Novel End-to-End Algorithm that Utilizes Convolutional Neural Networks to Recognize Potholes in Two-Dimensional Monocular Images Riya Sikand - Ranney School
2nd Place	9TH-C05-0611	Project Oblivion Ryan Paul - Moravian Academy Upper School
3rd Place	9TH-C05-0254	Deep Learning Based Recommender System in Disease Prognosis - A Novel Application of AI and NLP in Medicine Aashish Cheruvu - Tamanend Middle School
3rd Place	9TH-C05-0255	Computer Simulation of Hoarding Behavior Krithi Ramnath - Council Rock High School North
Honorable Mention	9TH-C05-0338	Preemptive Detection of General Aviation Crashes Using Deep Learning Networks Everett McCrea - Avon Grove Charter School

## Earth & Space Science

1st Place	9TH-C06-0427	The Rotation Curve of the Milky Way Galaxy: Dark Matter Elise Olmstead - Upper Darby High School
2nd Place	9TH-C06-0698	Effect of Temperature on Photovoltaic Cells Shashwat Sharma - Parkland High School
3rd Place	9TH-C06-0502	The Effects of Ocean Acidification Mia Peng - Lower Moreland High School
Honorable Mention	9TH-C06-0668	How Climate change affects the great barrier reef Scarlett DiPaolo - cherry hill highschool east



## Engineering

- 1st Place 9TH-C07-0693 Ambuli - An In-Home Robot Caretaker  
Jared Gizersky - Ranney School
- 2nd Place 9TH-C07-0511 Charging a smartphone through exercise  
Lucas Philip - Germantown Academy
- 3rd Place 9TH-C07-0517 The Hand is the Tool of Tools  
Kyle Lockhead - Souderton Area High School
- Honorable  
Mention 9TH-C07-0514 IoT System for Detecting Vehicular Heatstroke  
John Du - Methacton High School

## Environmental Science

- 1st Place 9TH-C08-0384 Breakthroughs in Honeybee Health: Continuous-Release Mist Diffusion of Thymol-Based  
Essential Oils  
Kaitlyn Culbert - Toms River High School North
- 2nd Place 9TH-C08-0718 Effect of Heavy Metals on the Survival of Freshwater Daphnia magna and Saltwater  
Artemia salina Crustaceans  
Nandini Rastogi - Eastern Regional High School
- 3rd Place 9TH-C08-0519 Effects and Sources of Dioxins and Furans in Benthic Organisms in the Newtown Creek  
Superfund Site  
Saranya Anantapantula - Spring-ford Area High School
- Honorable  
Mention 9TH-C08-0521 The Relationship Between Population Density and PFAS in Water  
Anna Weatherwax - Penndale

## Mathematics

- 1st Place 9TH-C09-0535 Benford's Law and Election Results  
Bryan Wu - Souderton Area High School
- 2nd Place 9TH-C09-0530 Time for Transport  
Tarun Iyengar - Pennbrook Middle School
- 3rd Place 9TH-C09-0534 Can There Exist More Than Five Platonic Solids?  
Nidhi Ram - Lower Moreland High School

## Medicine & Health

1st Place	9TH-C10-0428	The SLED (Shelf Life Expiration Date) Tracking System: Combating Food Waste and Food Borne Illnesses From Expiration Using Machine Learning Srilekha Mamidala - Garnet Valley High School
2nd Place	9TH-C10-0541	Do Higher Violin Hand Positions Lead to Overuse Injuries? Adah Kaplan - Germantown Academy
3rd Place	9TH-C10-0446	The Effect of Mask Wearing on Respiration Ayela Sullivan - Upper Darby High School
Honorable Mention	9TH-C10-0192	Reducing Toxic Tau as Therapy for Alzheimer's Disease Anna Praticò - Julia R. Masterman
Honorable Mention	9TH-C10-0265	Arthritis: A misery for some, a mystery for others Saara Sheth - Unami Middle School
Honorable Mention	9TH-C10-0348	A Vital Connection: The Association Between Vitamin D and COVID-19 Sreevarshini Yedida - Unionville High School
Honorable Mention	9TH-C10-0429	Correlations Between Age and Coronavirus Smell Loss Lylah Hoque - Upper Darby High School
Honorable Mention	9TH-C10-0598	The Effect of Sugary Drinks on Teeth Hannah Halm - Freedom High School
Honorable Mention	9TH-C10-0725	Testing the Efficacy of Transcranial Magnetic Stimulation on Psychiatric Comorbidities of Depression Rayna Malhotra - Moravian Academy Upper School

## Microbiology

1st Place	9TH-C11-0560	Effect of Distance from/Mask Usage on Bacteria Transmission Emmeline Coplan - Upper Dublin High School
2nd Place	9TH-C11-0559	Socialize With Caution After Quarantine Anyang Yang - Lower Moreland High School
3rd Place	9TH-C11-0387	Effects of Recombinant SARS-COV-2 S Protein on Cell Proliferation and Apoptosis Induction Katherine Fang - High Technology High School
Honorable Mention	9TH-C11-0430	Do Natural or Chemical Based cleaners kill E.coli best? Ava Barrera - Academy of Notre Dame de Namur

## Physics

- 1st Place 9TH-C12-0565 Temporal Visualization of Cough Auras  
Andrei Vava - Germantown Academy
- 2nd Place 9TH-C12-0571 The Relation Between the Illuminance and the Power Collected  
Eva Yang - Upper Dublin High School
- 3rd Place 9TH-C12-0573 Sustainable Solar Energy Harvesting Using Supercapacitors  
Arnav Tiwari - Methacton High School
- Honorable  
Mention 9TH-C12-0346 Starlight: Distance vs Brightness  
Bhavesh Mantrabuddi - Downingtown West High School

## Zoology

- 1st Place 9TH-C13-0695 The Effect of Exposure to Bisphenols Used in the Production of Everyday Use Products  
on the Development of *Protoperidinium terraenovae*  
Marissa Almonte - Burlington Township High School
- 2nd Place 9TH-C13-0719 The Effect of Blue Light on the Heart and Reproduction Rate of *Artemia Salina*  
Aarav Kakade - Parkland High School
- 3rd Place 9TH-C13-0579 Effect of Temperature on *Vanessa cardui* Growth  
Bradley Evans - Souderton Area High School
- Honorable  
Mention 9TH-C13-0737 The Effect of Different Commonly Consumed Substances on *Daphnia Magna*  
Sunny Chen - Moravian Academy Upper School

## E Fair - 6th - 8th Grade

### Medals

Gold - Tariq Shahid - Springhouse Middle School	Computational Analysis of the Effect of Absorbents on CO2 using COMSOL Multiphysics Simulation Engine
Silver - Sonia Leo - William W Allen Middle School	Low-cost microplastics removal and water purifying system using aluminum sulfate salt and coconut husk charcoal
Bronze - Neil Kaushik - Newtown Middle School	The difference between a normal pendulum and a cycloidal pendulum

### Behavior & Social Science

1st Place	6-8-C01-0455	Inattentional Blindness: Did You See That? Lily Wilden - Cedarbrook Middle School
2nd Place	6-8-C01-0453	Stroop Effect: How Does It Affect Color Recognition Times? Dana Nathanson -
3rd Place	6-8-C01-0120	Eyes Vs Ears Emil Alexandrowicz - McCall
Honorable Mention	6-8-C01-0650	Can the Power of Persuasion Change Opinions? Jaya Lawrence-Gupta - Haddonfield Friends School

### Biochemistry

1st Place	6-8-C02-0128	Does it Curdle? Using pineapple juice to curdle milk and measure the coagulation process, over time, with a self-made turbidimeter. Siyahni Rivera - Ad Prima Charter School
2nd Place	6-8-C02-0364	Understanding the effect of temperature, pH and concentration on the activity of enzymes Rowan Chetty - Tredyffrin Easttown Middle School
3rd Place	6-8-C02-0365	DNA Everywhere Nanayaa Baa - Owen J. Roberts Middle School
Honorable Mention	6-8-C02-0469	Friend or Foe Fruits Rishi Dhanasekaran - Indian Valley Middle School

### Botany

1st Place	6-8-C03-0051	Musical Plants Johanna Schlecht - Ursuline Academy
2nd Place	6-8-C03-0607	The Effect of Electricity on Plant Growth Aryan Kapoor - Springhouse Middle School
3rd Place	6-8-C03-0700	How Metallic Residue Affects Crop Yield Samiht Rohatgi - Springhouse Middle School
Honorable Mention	6-8-C03-0478	Nitrogen Fixing Bacteria Versus Commercial Nitrogen Fertilizer Victoria Puente - Indian Valley Middle School

## Chemistry

1st Place	6-8-C04-0586	Computational Analysis of the Effect of Absorbents on CO2 using COMSOL Multiphysics Simulation Engine Tariq Shahid - Springhouse Middle School
2nd Place	6-8-C04-0367	The Effect of Temperature on Latent Fingerprints Sierra Dean - Saint Agnes School
3rd Place	6-8-C04-0224	How does Type of Wood affect its Density over Time when soaked in Acid? Andrew Ganopolskiy - Holicong Middle School
Honorable Mention	6-8-C04-0225	How does the type of pill effect its dissolution rate? Riya Mehrotra - Holicong Middle School
Honorable Mention	6-8-C04-0622	Shocking! Which Sport Drink Gives You the Biggest Jolt? Zachary Pressler - Pressler Homeschool
Honorable Mention	6-8-C04-0663	Characterizing and Repurposing New Jersey Shore Bay Mud Asha Chakrabarti - William Allen Middle School

## Computer Science

1st Place	6-8-C05-0390	Gall Me Ishmael: Efficacy of English Letter Frequency in Solving Cryptograms Ligon Fisher - Fisher Home School
2nd Place	6-8-C05-0403	A Low Cost Device That Utilizes Thermography and an Optimized Neural Network Model to Diagnose Breast Cancer Anish Pallod - Springhouse Middle School
3rd Place	6-8-C05-0226	Which Programming Language Does Which Task Most Efficiently? Emily Eayre - Newtown Middle School
Honorable Mention	6-8-C05-0359	Simulating the Spread of Viruses using Cellular Automata Shivam Maheshwari - Charles F. Patton Middle School
Honorable Mention	6-8-C05-0436	Green computing - turning outdated computers into cloud storage Aditya Joshi - Haverford Middle School
Honorable Mention	6-8-C05-0729	Classification of Eye Diseases using Deep Learning Convolutional Neural Networks Kareem Boukari - Postlethwait Middle School

## Consumer Science

1st Place	6-8-C15-0685	Dress for Success: Which Fabric Drapes Best? Katherine Gilchrist - Orefield Middle School
2nd Place	6-8-C15-0229	Chemical Reactions and Cake Kasey Walker - Holicong Middle School
3rd Place	6-8-C15-0498	The Science Behind Cookies, and What's Inside Sadie Purcell -
Honorable Mention	6-8-C15-0602	Which Name Brand Batteries Last the Longest? Dugan Tunney - Toms River Intermediate North

## Earth & Space Science

- 1st Place 6-8-C06-0230 Supersuits for Mars  
Jack McGrath - Newtown Middle School
- 2nd Place 6-8-C06-0501 The Effect of Solar Storms on Earth's Magnetic Field  
Maggie Petren - Arcola Intermediate School
- 3rd Place 6-8-C06-0604 Veggie Tales in Space  
Chirayu Daniel - Frances S. DeMasi Middle School
- Honorable  
Mention 6-8-C06-0353 Counting the Stars  
Emma Slevinsky - Lionville Middle School

## Engineering

- 1st Place 6-8-C07-0672 Low-cost microplastics removal and water purifying system using aluminium sulfate salt  
and coconut husk charcoal  
Sonia Leo - William W Allen Middle School, Moorestown, NJ
- 2nd Place 6-8-C07-0601 Designing a Thermal Rectifier with Complex 3D Printed Shapes using Common Material  
Brandon Cai - Springhouse Middle School
- 3rd Place 6-8-C07-0049 Electromagnet Design and Effects on Field Strength  
Forrest Klinger - Immaculate Heart of Mary
- Honorable  
Mention 6-8-C07-0360 Perfectly Centered, As All Airplanes Should Be  
Hanyang Liu - Tredyffrin-Easttown Middle School
- Honorable  
Mention 6-8-C07-0600 Wind Power  
Srijan Govindu - Springhouse Middle School

## Environmental Science

- 1st Place 6-8-C08-0358 Bio-based and Bio-degradable Plastic to Save the Planet  
Pooja Menon - Fugett Middle School, 500 Ellis Lane, West Chester - PA 19380
- 2nd Place 6-8-C08-0374 Renewable Energy, Clean Energy for a Better Tomorrow  
Tejaswi Chundru - Lionville Middle School
- 3rd Place 6-8-C08-0720 ENHANCING PLANT SUSTAINABILITY THROUGH FRUIT PEELS  
Ansh Jaggi - Voorhees Middle School
- Honorable  
Mention 6-8-C08-0069 Swimming in a Sea of Acid: A Growing Threat to Sea Life  
Avery Heathwaite - Woodstown Middle School
- Honorable  
Mention 6-8-C08-0234 How differently colored lights effect plant growth.  
John Hetz - Holicong Middle School
- Honorable  
Mention 6-8-C08-0706 Trash to Gas  
Ronak Saramya - Moravian Academy Middle School

## Mathematics

1st Place	6-8-C09-0237	The relationship between household income and produce availability in convenience stores. Caroline Rawlings - Holicong Middle School
2nd Place	6-8-C09-0368	COVID-19: Data Analysis & Interpretation Sohum Bandyopadhyay - Owen J. Roberts Middle School
3rd Place	6-8-C09-0186	Algorithms For The Cube Chris Zheng - McCall School
Honorable Mention	6-8-C09-0355	The Key to Unlocking Othello Ishita Saxena - Charles F. Patton Middle School
Honorable Mention	6-8-C09-0533	What is the Most Efficient Amount of Times to Shuffle Cards? Zack Rosser -

## Medicine & Health

1st Place	6-8-C10-0376	Enhanced Human Ear Perception using Acoustic Masking Tushar Mehta - Orefield Middle School, Allentown, PA
2nd Place	6-8-C10-0544	See it Clear: Blue Light Glasses and Their Effect on Vision Sadie Michaels - Cedarbrook Middle School
3rd Place	6-8-C10-0238	What is the Most Effective Type of Mask? Ranjit Rajapakse - Holicong Middle School
Honorable Mention	6-8-C10-0073	Heat vs. Color Jacob Marino - Woodstown Middle School

## Microbiology

1st Place	6-8-C11-0371	Presence of SARS-CoV-2 on the Surface of Fruits and Vegetables Anand Shah - Charles F. Patton Middle School
2nd Place	6-8-C11-0661	Can Kitchen Water Filters Work In the Wild? Lauren Schaffer - William Allen Middle School
3rd Place	6-8-C11-0241	Testing Antimicrobial Properties of Spices Arya Honawar - Newtown Middle School
Honorable Mention	6-8-C11-0198	Can Zeolite Prolong The Shelf Life Of Fruits Jack Jawork - Meredith School
Honorable Mention	6-8-C11-0442	Can Bacteria Produce Electricity Lucas Ortego - Saint Mary Magdalen

## Physics

- 1st Place 6-8-C12-0242 The difference between a normal pendulum and a cycloidal pendulum  
Neil Kaushik - Newtown Middle School
- 2nd Place 6-8-C12-0351 How does the wind speed affect the amount of electricity produced by a Savonius  
vertical-axis wind turbine?  
Kai Unwin-Wisnosky - University Scholars Program PA Leadership Charter School
- 3rd Place 6-8-C12-0572 Solar Panels: Can They Be Improved?  
Evan Holovachuk - Cedarbrook Middle School
- Honorable 6-8-C12-0243 How does the Shape and Angle of a Fan Blade Affect the Wind Speed of the Fan?  
Mention Emily Tian - Holicong Middle School
- Honorable 6-8-C12-0569 How the shape/design of the tail of a plane affects the distance the plane flies  
Mention Hassan Soliman - Penndale Middle School



## Team Projects

1st Place	6-8-C14-0357	Assessment of Adults Opinions on the Significance of Concussions in Children Varoon Joshi - Charles F. Patton Middle School Daniel Miller - Patton Middle School
2nd Place	6-8-C14-0657	A Conclusion of Comprehension: Recording VS Reading Dishita Singh - William Allen Middle School Olivia Barnes - William Allen Middle School Neeka Vojdani - William Allen Middle School
3rd Place	6-8-C14-0377	The Sky Strikes Back Is Acid Rain Good for Growth or Bad Sruthi Desikan - Lionville Middle School Kavya Krishnakumar - Lionville Middle School
Honorable Mention	6-8-C14-0079	Antibacterial vs. Regular Hand Soap  Hannah DeWitt - Elsinboro Township School Ryann Foote - Elsinboro Township School
Honorable Mention	6-8-C14-0080	Which Type of Bait Attracts Fish the Most  Jack Bergmann - Caiden Spinelli - Oldmans Township School Clinton Bobo -
Honorable Mention	6-8-C14-0212	testing the genes of soybeans  Eleanor palmer - J.S. Jenks clarissa lanzas - Sofia Bartoli wright -
Honorable Mention	6-8-C14-0244	Driveway Salt Versus Table Salt  Isabella Danker - Saint Andrew School Victoria Danker - Saint Andrew School
Honorable Mention	6-8-C14-0245	The Power of Baking Soda in the Kitchen  Abigail Marino - St. Andrew Virginia Curry - Saint Andrew school
Honorable Mention	6-8-C14-0308	Can Flowers Survive Without Roots?  Bao-Tu Nguyen - Universal Vare STEM & ARTs Alex Vo - Universal Vare STEM & Arts Academy Emily Noun - Universal Vare STEM & Arts Academy
Honorable Mention	6-8-C14-0715	How does personality affect memory?  Reanna Lawan - Sovereign Avenue School Faizah Faroque - Sovereign Avenue School

## Zoology

1st Place	6-8-C13-0246	Effects of Age on Sensibility and Reaction Time on Horses Hailey Wood - St. Jude Catholic Elementary School
2nd Place	6-8-C13-0629	How Does Alcohol Affect Aquatic Life? Sriram Joshi - SpringHouse Middle School
3rd Place	6-8-C13-0580	Fingerprints: You'll know where you've been last Vivienne Cowie Profy - French International School of Philadelphia
Honorable Mention	6-8-C13-0654	Memory Recall of Land Snails Lia Feldmann - Eyer Middle School

# T Fair - Highschool Teams

## Team Projects

1st Place TEAM-C14-0327 Effects of Grape Seed Extract (GSE) Consumption on Egg Production in *Drosophila melanogaster* Adults

Cassandra Hung - PA Leadership Charter School/University Scholars

Maria Hromcenco - University Scholars Program, Pennsylvania Leadership Charter School

2nd Place TEAM-C14-0413 Using Craters to Predict Surface Composition of Pluto

Nishat Tasnin -

Jenna Yocco - Upper Darby High School

3rd Place TEAM-C14-0712 Using Object Detection Libraries to Map out Human rights violations and potential threats to civilian security across warzones in East Africa

Amit Krishna Kallakuri - Holmdel High School

Bradley Xu - High Technology High School

Honorable Mention TEAM-C14-0267 How COVID-19 Affect Sleep Patterns

Sienna Smith - Central Bucks High School South

Namrata Sureddy - Central Bucks High School South

Honorable Mention TEAM-C14-0302 The Effects of Growing Plants Hydroponically vs. in Soil

Brianne Smith - Villa Joseph Marie High School

Kelley Malone - Villa Joseph Marie High School

Honorable Mention TEAM-C14-0680 Heights of Sand Dunes Versus Health of Beach Grass in Seaside Heights, New Jersey: A Comparative Study

Jillian Peslak - Marine Academy of Technology and Environmental Science

Mackenzie Fries - Marine Academy of Technology and Environmental Science (MATES)

Ilana Lavene - Marine Academy of Technology and Environmental Science

