



# DELAWARE VALLEY SCIENCE FAIRS, INC.

## PROGRAM OF ENTRIES 2024

**76TH DELAWARE VALLEY  
SCIENCE FAIRS**  
6th - 12th Grades

**APRIL 2 - 4, 2024**

The Greater Philadelphia  
Expo Center  
Oaks, Pennsylvania

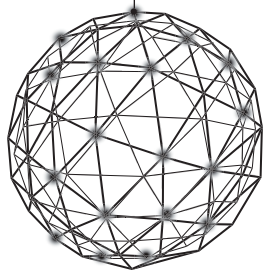
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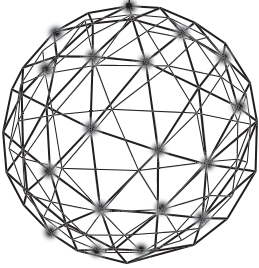
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Welcome to the 76th annual Delaware Valley Science Fairs (DVSF). For 76 years DVSF has provided STEM opportunities to students in the Delaware Valley. I extend my congratulations to all the participants. Every student here has won an award from their regional fairs. As I have said many times before, you are not winners because you won an award. You are winners because you started and completed a research project! This is an experience that will serve you well. The skills you learn by participating in a science fair will better prepare you for the journey ahead and I wish you all the best in the future.

## LETTER FROM THE PRESIDENT



DVSF's mission is to bring parents, teachers, and industry together to stimulate and nurture young people so they can grow and develop into contributing members of the community. We will continue to strive to expand our Teacher Development Program, Mentorship Program and collaborations with industry and professional societies. We also provide students from various social and economic backgrounds opportunities to share their aptitudes and interests.

DVSF is focused on encouraging students to think and solve problems; skills that they will need for careers, college, and citizenship. We are committed to preparing tomorrow's innovators. The Next Generation of Science Standards (NGSS) emphasizes critical thinking skills of applying knowledge, evaluating claims, providing evidence for points of view, and analyzing new situations. These are the same skills students learn when they undertake a research project and enter a science fair. It is here where intellectual curiosity and creative problem solving come into play. The importance of science competitions cannot be underestimated. It is ok if one doesn't place. It is the process of participation itself that is uniquely valuable.

Our high school students, who competed at the Regeneron International Science and Engineering Fair (ISEF) last year, did very well. They won five Grand Awards and six Special Awards. Ten students from DVSF were also named Semi-Finalist in the Thermo Fisher Scientific Junior Innovator Challenge for middle school students. We also had eight Semi-Finals and three Finalists in the Regeneron Science Talent Search for high school seniors. We are all very proud of their accomplishments. DVSF provides an opportunity for all students to excel and reach their full potential.

I want to thank the following for their contributions: our donors and event sponsors, the Board of Trustees, the Regional Fair Directors, our Advisory Board, the professional societies and organizations, the judges, schools, and teachers, many of whom are hardworking fair volunteers, and last, but certainly not least, the parents. We have a lot of talented young people in the tri-state area who can excel when given the chance. I feel honored to be part of this exciting organization. I strongly believe that if we provide the opportunity for the natural curiosity of our young people to thrive, they will provide us with a future that is bright and prosperous.

Good Luck to everyone,

Bob Solomon  
EXECUTIVE DIRECTOR AND PRESIDENT



## GOVERNOR JOSH SHAPIRO

April 3, 2024

Delaware Valley Science Fairs, Inc.  
Oaks, Pennsylvania

Greetings:

It is my pleasure to join with Delaware Valley Science Fairs, Inc. (DVSF) to celebrate the 76<sup>th</sup> annual Delaware Valley Science Fairs competition.

DVSF is one of the oldest and largest science fairs in the country that has been a leading force in STEM education. In order to continue the Commonwealth's tradition of innovation, our workforce must be supported with policies, protections, and programs like this that help advance the needs of Pennsylvanians. DVSF embraces a philosophy of teaching students to develop critical problem-solving skills, innovation in their projects, and dedication beyond the classroom.

As Governor, and on behalf of all Pennsylvanians, I am delighted to welcome all those gathered for the Delaware Valley Science Fairs, Inc. Please accept my best wishes for a productive and memorable event.



GIVEN under my hand and the Seal of the Governor, at the City of Harrisburg, this third day of April two thousand twenty-four, the year of the Commonwealth the two hundred forty-eighth.

Governor Josh Shapiro





# CITY OF PHILADELPHIA

**CHERELLE L. PARKER**  
Mayor

Office of the Mayor  
215 City Hall  
Philadelphia, PA 19107  
(215) 686-2181  
FAX (215) 686-2180

April 3, 2024

Dear Friends:

It is a pleasure to welcome you to the 76th annual Delaware Valley Science Fairs (DVSF) in Philadelphia, being held Wednesday, April 3, 2024, at the Greater Philadelphia Expo Center in Oaks, PA.

Founded in 1949, The Delaware Valley Science Fairs, Inc. is a nonprofit organization headquartered in Exton, PA and sponsored by area companies, foundations, universities, and individual donors. It is one of the oldest and largest Fairs in the country and embraces a philosophy that students learn science by doing science. In the process, students learn how to think and develop critical problem-solving skills they will need for careers, college and citizenship. I commend the DVSF's mission to bring parents, teachers, and the industry together to stimulate and nurture young people so that they can grow and develop into contributing members of the community by providing the scientific workforce needed for the future, and they provide mentoring and teacher training to facilitate participation in this activity.

DVSF is an Affiliated Fair for the Regeneron International Science and Engineering Fair (ISEF). Competitors in grades 6 through 12 research sophisticated topics and develop STEM (Science, Technology, Engineering, and Mathematics) projects in any of 13 different categories. Commendably, this sometimes spurs making new discoveries that change their lives forever in many positive ways as they participate in the Delaware Valley Science Fairs, and nearly \$500,000 in scholarship and prize money will be awarded this year to student winners. Top high-school winners will compete in the ISEF competition in May where the prizes are over \$4 million; the top middle-school winners go on to the national competition, the Thermo Fisher Scientific Junior Innovators Challenge.

I congratulate this organization for their significant impact over the past 76 years of recognizing the impressive accomplishments of the students in our region who excel in these essential academic disciplines. With the City of Philadelphia recognized as a national leader in science education and research, it is imperative that we properly educate and prepare our students for potential careers in STEM, and that Philadelphia's STEM education leaders devise creative and innovative ways to motivate children and youth to pursue their interest in science.

On behalf of the City of Philadelphia, I wish all of the competing students the very best of luck and salute you for your interest in science. I encourage you to continue to pursue your passion in these subjects and consider the many rewarding and challenging careers they can open for you.

Sincerely,

A handwritten signature in black ink that reads "Cherelle L. Parker".

Cherelle L. Parker  
Mayor

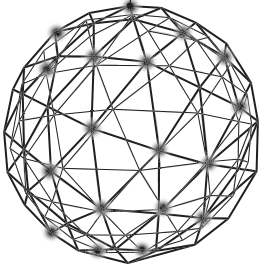
Charitable contributions from individuals, corporations, foundations, agencies, and professional societies enables Delaware Valley Science Fairs to organize and host the annual regional science & engineering research competitions; support 13 local science and engineering fairs in Southeastern Pennsylvania, Delaware, and Southern New Jersey; and provide local teachers the support and tools they need to spark students' creativity and foster multi-dimensional learning in the classroom.

We extend our sincerest thanks to all of you, who through your contributions and partnerships, are investing in STEM education and our region's young students and teachers.

**DVSF SUPPORTERS** | contributions received July 2022 - March 2024

**PRESIDENT'S CIRCLE**  
(\$25,000+)

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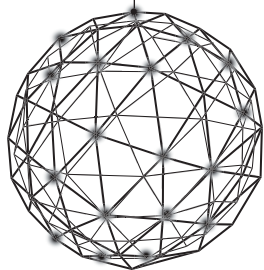
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***Philanthropic contributions and volunteerism are essential to DVSF.  
We celebrate and thank all donors for supporting DVSF!***

\*DVSF 2024 Trustee

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 Air Products Young Innovator Award  
 American Chemical Society - Delaware Section  
 American Entomological Society/Calvert Award  
 American Psychological Association  
 American Society for Microbiology - Eastern PA  
 American Society of Civil Engineers - Philadelphia Section  
 American Society of Highway Engineers - Delaware Valley Section  
 American Society of Naval Engineers  
 American Statistical Association - Philadelphia Chapter  
 ASM International - Philadelphia Liberty Bell Chapter  
 Bill Rissinger Award for Earth and Space Science  
 Broadcom Coding with Commitment  
 Chromatography Forum of Delaware Valley  
 Constellation Energy Award  
 Delaware Audubon Society  
 Department of Defense (DoD) STEM Leadership Prize  
 Drexel University - Department of Biodiversity Earth and Environmental Science (BEES)  
 DuPont Excellence in Teaching Award  
 Engineers' Club of Philadelphia  
 Henry Disston Director's Award  
 Institute of Electrical and Electronics Engineers - Philadelphia Section  
 Johnson & Johnson Innovative Medicine Awards  
 John C. Sargent Jr. Memorial Award  
 Lemelson Early Inventor Prize  
 Merck Science Achievement Award  
 Mid-Atlantic Society of Toxicology  
 Mixit-Kohlhass Award  
 National Oceanic and Atmospheric Administration  
 Office of Naval Research - US Navy and US Marines  
 Parental Drug Association - Delaware Valley Chapters  
 Pennsylvania Council of Professional Geologists - Grover H. Emrich Memorial Award  
 Pennsylvania Society of Professional Engineers  
 Philadelphia Society for Coatings Technology  
 Regeneron Biomedical Science Award  
 Roy F. Weston Memorial Award for Environmental Sciences  
 Sino-American Pharmaceutical Professionals Association - Greater Philadelphia Chapter  
 Society of Environmental Toxicology and Chemistry - Hudson Delaware Chapter  
 Society of Tribologists and Lubrication Engineers - Philadelphia Section  
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 United States Air Force  
 United States Department of Agriculture  
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 Thermo-Fisher Scientific Junior Innovator's Challenge

**SPECIAL AWARDS**



**Scholarships**

Botstiber Foundation Awards  
 Delaware Valley University - DeVal Mission Scholarship  
 Harrisburg University Science and Technology Scholar Award

*\*Special Awards list is current as of print date and may be subject to change on DVSF Judging Day*

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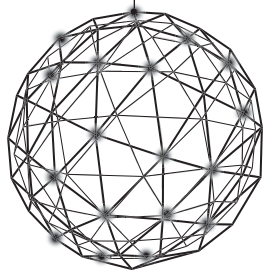
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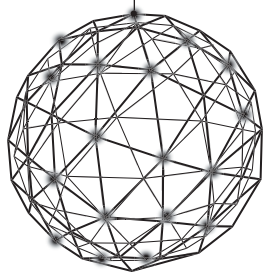
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Sue Varnum, George Washington Carver Science Fair, Temple University

Delaware Valley Science Fairs, Inc. (DVSF) was founded in 1949, and is thriving in its 76th operating year. Today, DVSF is a non-profit organization and the host of one of the largest and oldest fairs in the country. The Fairs were designed as a vehicle for stimulating interest in STEM (Science, Technology, Engineering and Mathematics) among students in middle and high schools in the tri-state area. The philosophy behind the Fairs is that students learn science by doing science.

The Delaware Valley Science Fairs comprise six separate competitions: with a fair each for 12th, 11th, 10th, 9th, and 6th through 8th grades, and Teams. The Society for Science provides a uniform structure and rules, and franchises all regional fairs at the high school level in the United States and in over 70 countries.

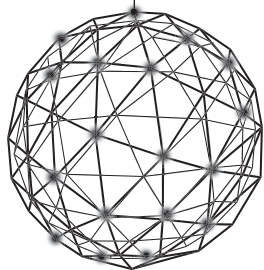
In the fall of each school year, teachers introduce the science fair program as an extracurricular activity or as part of the curriculum. Students choose from one of 15 categories (these categories are listed in the Table of Contents). Along the way, their topics and methodology are reviewed by the DVSF Scientific Review Committee to guarantee that proper scientific safety procedures and federal guidelines are being followed.

Within each category, First, Second, and Third Place winners are chosen by teams of judges who sometimes also designate Honorable Mention awards. After category winners are selected in each grade, separate teams of Medals judges select Gold, Silver, and Bronze Medal winners from among the category winners.

All medal winners in the 9th through 12th grade earn an all-expense-paid trip to the Regeneron International Science and Engineering Fair (ISEF), to be held this year in Los Angeles, California from May 11th through 17th. At the ISEF, DVSF's twelve high school medal winners will compete against winners from other regional fairs in the United States, American Samoa, Argentina, Australia, Austria, Azerbaijan, Belarus, Brazil, Bulgaria, Canada, Chile, China, Chinese Taipei, Columbia, Costa Rica, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Georgia Republic, Germany, Ghana, Guam, Guatemala, Hungary, India, Indonesia, Iraq, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Luxembourg, Malaysia, Mexico, Netherlands, Nigeria, Northern Ireland, North Mariana Islands, Norway, Pakistan, Palestine, Panama, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, United Arab Emirates, the United Kingdom, Uruguay, U.S. Virgin Islands and Vietnam and Zimbabwe.

Two teachers are selected from a pool of applicants to attend ISEF, as an all-expenses paid professional development opportunity.

## FOREWORD



# DELAWARE VALLEY SCIENCE FAIRS:

## A CULMINATION OF THIRTEEN REGIONAL FAIRS THROUGHOUT THE DELAWARE VALLEY

Each student who competes in the Delaware Valley Science Fairs (DVSF) is already a winner. They have earned the right to compete in the DVSF by winning in one of thirteen regional fairs in Delaware, Southern New Jersey, and Southeastern Pennsylvania.

and **Lehigh Valley Science Fair and Engineering Fair** for Lehigh and Northampton Counties.

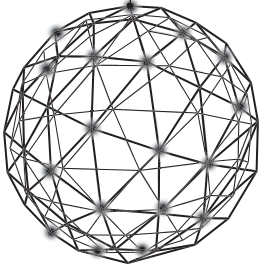
Many students were honored as winners in earlier fairs held at their schools and by their school districts.

Delaware competitors have come from the **Sussex County Science Fair** and **Delaware Tech Science Expo** (New Castle County).

New Jersey competitors come from one of four regional fairs, including the **Cumberland County Science Fair** and **Salem County Science Fair** for students in those counties, **Jersey Shore Science Fair** for students from Atlantic, Cape May, Monmouth, and Ocean Counties and **Coriell Institute Science Fair** for students from Burlington, Camden, and Gloucester Counties.

Students from Southeastern Pennsylvania come from the **Bucks County Science Research Competition**, **Delaware County Science Fair**, **Montgomery County Science Research Competition**, **Chester County Science Research Competition**, **George Washington Carver Science Fair** for Philadelphia County,

THIRTEEN REGIONAL FAIRS



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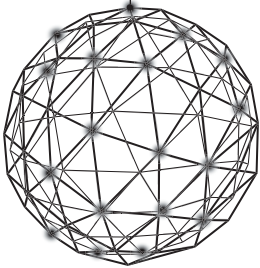
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*Delaware Valley Science Fairs, Inc.*

STAFF



*Teacher Workshop*

Delaware Valley Science Fairs (DVSF) provides several types of awards to student winners. These awards are intended to demonstrate the high value placed on achievement by middle and high school students in STEM.

### MEDALS

Gold, Silver, and Bronze Medals will be presented to three individuals in each grade, selected from the first-place category winners.

### ALL-EXPENSE-PAID TRAVEL TO THE REGENERON INTERNATIONAL SCIENCE AND ENGINEERING FAIR (ISEF)

The Gold, Silver and Bronze Medal Winners of the 9th, 10th, 11th, and 12th grade Fairs will receive an all-expense-paid trip to the Regeneron ISEF in Los Angeles, California from May 11th - 17th, 2024. The high school Medal Winners will compete at ISEF representing DVSF. Selected teachers will also receive an all-expense-paid trip to the ISEF. Approximate value: **\$2,600 per person.**

### CATEGORY AWARDS

Each of the first place winners in the six Delaware Valley Science Fair's categories of the competition will receive \$100, second place winners will receive \$75 and third place winners will receive \$50 along with their medal and certificate. Approximate value: **\$15,300**

### SCHOLARSHIPS

**The Dietrich W. Botstiber Foundation** offers three **\$8,000** unrestricted scholarships. These scholarships go to 12th graders with a project related to aviation and physics. The students will be awarded a \$2,000 per year, for 4 years pending maintenance of full-time status.

**Delaware Valley University:** This award is offered to high school seniors and juniors competing in the Delaware Valley Science Fairs. The \$2,000 DelVal Mission Scholarship will be awarded to juniors and seniors placing first in their categories at the Delaware Valley Science Fairs. A \$1,000 DelVal Mission Scholarship will be awarded to juniors and seniors that earn second place, third place or honorable mention in the category. These scholarships are renewable for four years as long as the student remains in good academic standing.

These scholarships are in addition to any academic scholarship for which a student may qualify upon admission. In order to be eligible to claim the DelVal Mission Scholarship described above, the high school student must be in good academic standing and enroll at the Delaware Valley University as a full-time undergraduate student in the fall semester immediately following the winner's high school graduation.

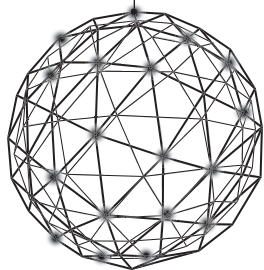
### Science and Technology Award to Harrisburg University of

**Science and Technology:** This award is offered to all high school seniors and juniors competing in the Delaware Valley Science Fairs. The Science and Technology Scholar Award will cover up to \$1,500 for four (4) academic years at Harrisburg University of Science and Technology and is renewable each year. This award will be in addition to any Merit Scholarship Award the student may receive upon application and admission to the university. To redeem this award, the student must be granted a regular full-time admission to Harrisburg University for the fall semester immediately following graduation from high school.

The university recommends recipients to file the Free Application for Federal Student Aid (FAFSA) before the start of the academic year, and complete any state grant applications by their deadlines. Once we have received the FAFSA data, we will provide recipients with a complete financial aid package that details their overall aid eligibility, including the scholarship as well as any state and federal grants for which they qualify. This award is not transferable and nor is it stackable with any other scholarship from Harrisburg University.

**Special Awards:** DVSF partners with regional professional societies and organizations, schools, and corporations who provide special awards for DVSF student presenters. Many of whom give additional special awards or extend invitations to participate in unique opportunities and experiences to selected students whose projects reflect the mission and goals of the societies and organizations. (See page 7) Approximate value: **\$32,725.**

## MEDALS, SCHOLARSHIPS AND AWARDS





**DVSF FUNDRAISING PROGRAM**

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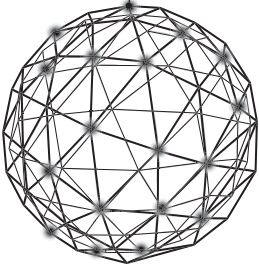
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For questions or to discuss planned giving opportunities, contact [bsolomon@dvsf.org](mailto:bsolomon@dvsf.org)

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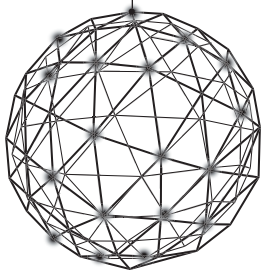
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Make checks payable to: **Delaware Valley Science Fairs, Inc.**

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## CATEGORY DESCRIPTIONS



### **Behavioral and Social Sciences**

Human and animal behavior, social and community relationships - psychology, sociology, anthropology, archaeology, ethology, ethnology, linguistics, learning, perception, urban problems, reading problems, public opinion surveys, educational testing, etc.

### **Biochemistry**

Chemistry of life processes - cell biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry, hormones, etc.

### **Botany**

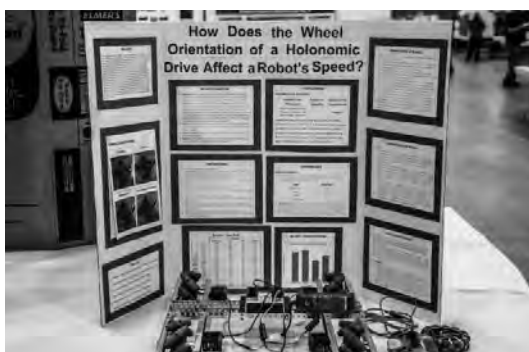
Study of plant life - agriculture, agronomy, horticulture, forestry, plant taxonomy, plant physiology, plant pathology, plant genetics, hydroponics, algae, etc.

### **Chemistry**

Study of nature and composition of matter and laws governing it - physical chemistry, organic chemistry (other than biochemistry), inorganic chemistry, materials, plastics, fuels, pesticides, metallurgy, soil chemistry, etc.

### **Computer Science**

Study and development of computer software and hardware and associated logical devices.



### **Earth and Space Sciences**

Geology, mineralogy, physiography, oceanography, meteorology, climatology, astronomy, geology, speleology, seismology, geography, etc.

### **Engineering**

Technology; projects that directly apply scientific principles to manufacturing and practical uses - civil, mechanical, aeronautical, chemical, electrical, photographic, sound, automotive, marine, heating and refrigerating, transportation, environmental engineering, etc.

### **Environmental Sciences**

Study of pollution (air, water, and land) sources and their control; ecology.

### **Mathematics**

Development of formal logical systems or various numerical and algebraic computations, and the application of these principles - calculus, geometry, abstract algebra, number theory, statistics, complex analysis, and probability.

### **Medicine and Health**

Study of diseases and health of humans and animals - dentistry, pharmacology, pathology, ophthalmology, nutrition, sanitation, pediatrics, dermatology, allergies, speech and hearing, etc.

### **Microbiology**

Biology of microorganisms - bacteriology, virology, protozoology, fungi, bacterial genetics, yeast, etc.

### **Physics**

Theories, principles, and laws governing energy and the effect of energy on matter - solid state, optics, acoustics, particle, nuclear, atomic, plasma, superconductivity, fluid and gas dynamics, thermodynamics, semiconductors, magnetism, quantum mechanics, biophysics, etc.

### **Zoology**

Study of animals - animal genetics, ornithology, ichthyology, herpetology, entomology, animal ecology, paleontology, cellular physiology, circadian rhythms, animal husbandry, cytology, histology, animal physiology, invertebrate neurophysiology, studies of invertebrates, etc.

### **Team Projects**

All disciplines - multidisciplinary or interdisciplinary. Projects consist of 2 or 3 team members.

### **Consumer Science (grades 6-8, only)**

Study of various consumer products like batteries, soaps, detergents, foods, paper towels, cosmetics, etc. These are usually, but not always, comparison studies.

# FREE DELAWARE VALLEY SCIENCE FAIRS PARENT/TEACHER WORKSHOP

WEDNESDAY, APRIL 3, 2024 • 12:30 TO 3:45 PM, GREATER PHILADELPHIA EXPO CENTER, ROOM 5

## **INSIDE SCIENCE FAIR JUDGING**

12:30 - 1:45 PM

**PRESENTER:** Bob Hranek, *DVSF Medals Judge and Trustee*

This presentation will focus on the judging process, the criteria that judges use in making selections and what the students can do to improve the judges' impressions and evaluations of their project. Valuable advice is offered from a long-time DVSF Medals Judge

## **WHAT IS THE ROLE OF PARENTS/TEACHERS DURING THE COLLEGE ADMISSIONS PROCESS**

2:00 - 2:45 PM

**PRESENTER:** Lou Hegyes, *Former College Admissions Director*

What is the role of the parent and/or teacher in the college admissions process? Learn how to be the best advocate for your students and how to avoid the pitfalls of the often confusing and overwhelming college admissions process. Long range planning and proper levels of advocacy are essential. Learn the best tactics to position your student for admission to their top college choices and what really impresses an Admissions Committee.

## **COLLEGE FINANCIAL AID FROM AN INSIDER**

3:00 - 3:45 PM

**PRESENTER:** Melissa Walsh, *Director of Student Financial Aid - Delaware Valley University*

The cost of a college education is not going down and it has never been more important for parents and teachers to be knowledgeable of how the process work, the deadlines and schedules to meet, and procedures to follow. Learn from an experienced College Financial Aid professional how to maximize your financial aid opportunities.

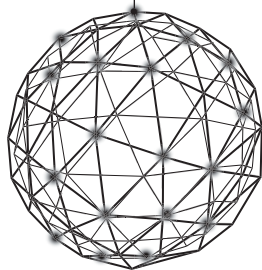
# FREE DELAWARE VALLEY SCIENCE FAIRS COLLEGE FAIR

DVSF provides students access to College and University admissions officials and professors at the fair. The following institutions have tables at this year's fair.

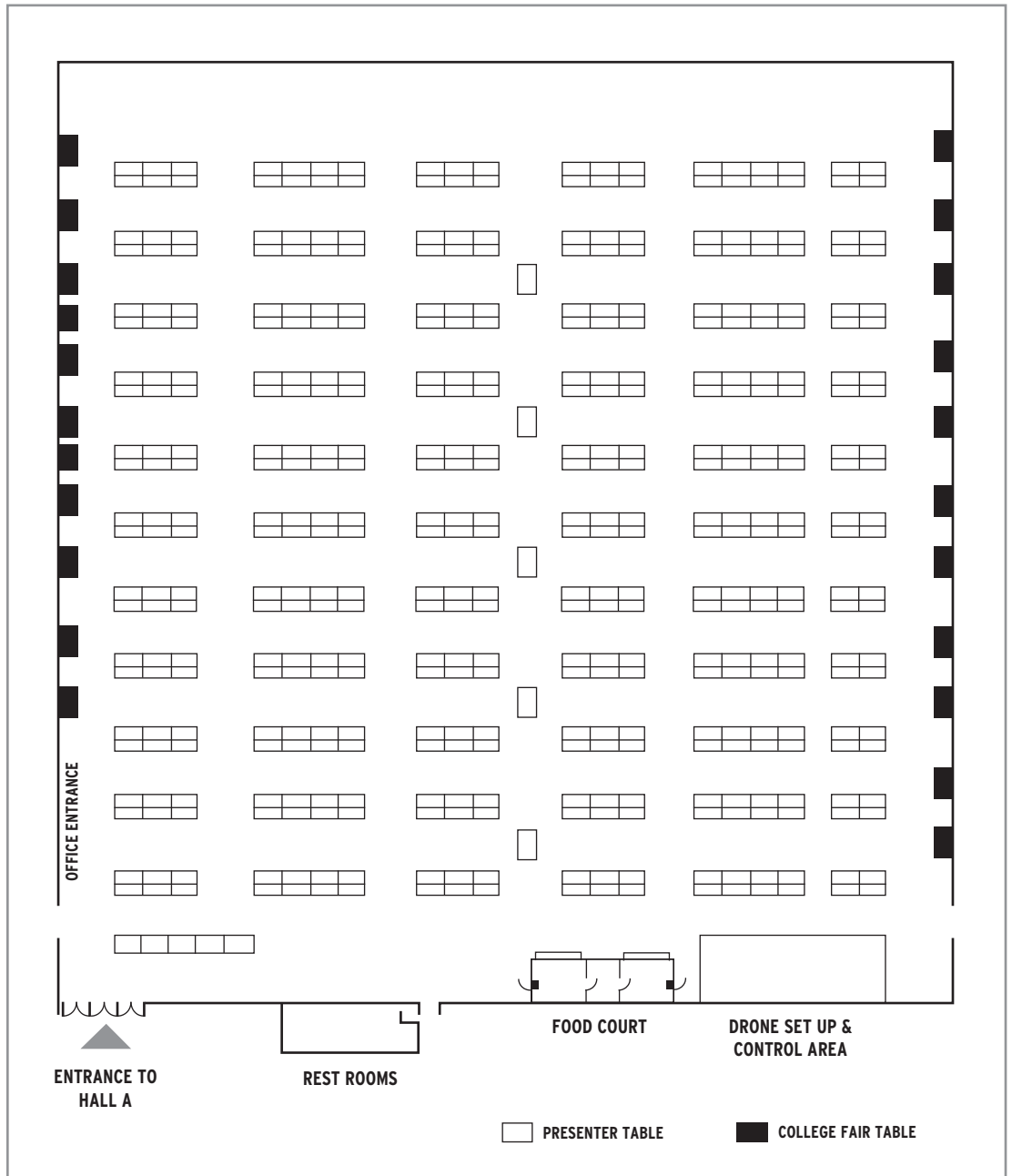
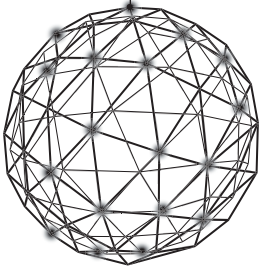
Allegheny College  
Bucks County Community College  
California Institute of Technology  
Community College of Philadelphia  
Delaware County Community College  
Delaware Valley University  
Drexel University  
Fairleigh Dickinson University  
Florida Institute of Technology  
Harrisburg University  
Holy Family University  
Lehigh University  
Manor College  
Moravian University  
Pennsylvania College of Technology

Pennsylvania State University - Berks  
Pennsylvania State University - Brandywine  
Quinnipiac University  
Rochester Institute of Technology  
Shippensburg University  
Saint Joseph's University  
Stevens Institute of Technology  
Stockton University  
Temple University - College of Engineering  
Temple University - College of Science & Tech.  
University of New Hampshire  
Ursinus College  
Wagner University  
Widener University

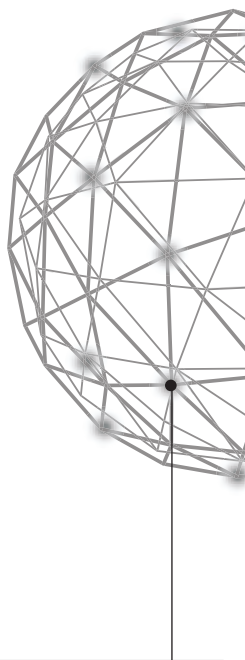
FREE WORKSHOPS



THE GREATER PHILADELPHIA  
EXPO CENTER  
2024 FLOOR PLAN



| PRESENTER                         | TITLE           | SCHOOL & SPONSOR  |   |
|-----------------------------------|-----------------|---|---|
| <b>BEHAVIORAL/SOCIAL SCIENCES</b> |                 |   |   |
| 12-BEH-001                        | Eden Bloom      | Uncanny Valley and its Effects on the on the Perception of Morality and Trustworthiness   | Council Rock High School North<br>Terese Grateful                   |
| 12-BEH-002                        | Mikaela Garber  | An Exploration into Parkinson's Law   |   |
| 12-BEH-003                        | Emily Ace       | How Color Affects Memory  | Bangor Area High School<br>Robert Hachtman                          |
| 12-BEH-004                        | Abigail Henry   | Allur-ing Red AC: Does Red 40 Cause Hyperactive Behavior?   |   |
| 12-BEH-005                        | Eliza Huang     | Effect of Gaze Direction on Ad Effectiveness  | Central High School<br>Robert Herbstritt                            |
| 12-BEH-006                        | Brianna Geist   | Stress Test: The Most Effective Method to Reduce Stress   | Germantown Academy<br>Sarah Kesten                                  |
| 12-BEH-007                        | Shriya Srikoti  | Comparative Analysis of Lecanemab and Aducanumab in Alzheimer's Treatment   | North Penn High School<br>Melody J. Leithold                        |
| <b>BIOCHEMISTRY</b>               |                 |   |   |
| 12-BCM-001                        | Aashka Patel    | Synthesis of Copper Nanoparticles and the Biological Impact   | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 12-BCM-002                        | Jessica Lee     | Are the Tensile Strength, Flexural, & Torsional Properties of Biofabrics the Same as Cotton & Polyester Fabrics?  | Cumberland County Technical Education Center<br>Tyler Davenport     |
| 12-BCM-003                        | Mason Smith     | Testing Potential Inhibitory Molecules for the DYRK1A Kinase through Virtual Molecular Screening and Validating through In-Vitro Testing                                | Central Bucks High School East<br>Mark Hayden                       |
| 12-BCM-004                        | Rayna Malhotra  | Year Three: Assessing the Efficacy of Dacomitinib Towards Elastic Matrix Repair in Aortic Aneurysms Relative to siRNABased Gene Silencing in the EGFR Signaling Pathway | Moravian Academy<br>Wendy Sheetz                                    |
| 12-BCM-005                        | Amal Oubarri    | Role of Chemical Modifications in DNA:RNA Duplex  | Central High School<br>Robert Herbstritt                            |
| <b>BOTANY</b>                     |                 |   |   |
| 12-BOT-001                        | Saara Sheth     | The Effects of Carotenoids on HepG2 Cells: Implications for Anti-Cancer Mechanism of Action   | Central Bucks High School East<br>Mark Hayden                       |
| 12-BOT-002                        | Chloe Hockfield | Testing Planting Life Hacks   |   |
| 12-BOT-003                        | Addison Smith   | Comparing nutrients and data of GMO and Non-GMO fruits  |   |
| 12-BOT-004                        | Liam Foley      | Plants Under Pressure   | Freedom High School<br>Graceanne Ruggiero                           |
| 12-BOT-005                        | Abrar Kazi      | Affect of CO2 on Germination Rate   | Central High School<br>Robert Herbstritt                            |
| 12-BOT-006                        | Anna Weatherwax | Vitamin C Production via Hydroponics in an Astrobotanical Context   | North Penn High School<br>Melody J. Leithold                        |
| 12-BOT-007                        | Saloni Bhatia   | Effect of Plants on Water Contamination   | Germantown Academy<br>Sarah Kesten                                  |
| 12-BOT-008                        | Morgan Tighe    | A Plant's Favorite Home   | Avon Grove Charter School<br>Kate Richardson                        |



2024 12TH GRADE ENTRIES



| PRESENTER        | TITLE   | SCHOOL & SPONSOR  |
|------------------|---|---|
| <b>CHEMISTRY</b> |   |   |
| 12-CHM-001       | Michelle Kagramian<br>Testing the Transcription Factor Inhibitor IP300w on the DUX4 Mutated Gene for the Treatment of Facioscapulohumeral Muscular Dystrophy  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 12-CHM-002       | Arielis Martinez<br>Iron and Acids  | Cumberland County Technical Education Center<br>Tyler Davenport     |
| 12-CHM-003       | Riley Smith<br>Synthesis of Sodium Bicarbonate for Carbon Dioxide Sequestration from Seawater   | Central Bucks High School West<br>Diane Liddington                  |
| 12-CHM-004       | Vivian Yang<br>Harnessing the Small Wonders of the Camel Immune System for Parkinson's Disease Treatment: Expression and Characterization of Camelid Single Domain Antibody Targeting $\alpha$ -Synuclein | Central Bucks High School East<br>Mark Hayden                       |
| 12-CHM-005       | Jemma Dengel<br>Tracking CO2 Emission of Biopolymers  |   |
| 12-CHM-006       | Ean Geller<br>Nocella<br>Analyzing the Effect of Rate of Evaporation on the Crystallization of Iron II Sulfate  |   |
| 12-CHM-007       | Srijay Chenna<br>Optimizing Synthesis of mRNA Therapeutics  | Charter School of Wilmington<br>Jennifer Toner                      |
| 12-CHM-008       | Crystal Jiang<br>Effect of NaOH Concentration on Graphene Transfer  | Central High School<br>Robert Herbstritt                            |
| 12-CHM-009       | Aditya Pasumarthi<br>Colloidal Silver:<br>The Next Generation   | Methacton High School<br>Robert Helm                                |
| <b>COMPUTER</b>  |   |   |
| 12-CMP-001       | Animish Jain<br>Applying Multiplicative Weights Update to Skin Cancer Classification Applications   | High Technology High School<br>Dina Ellsworth                       |
| 12-CMP-002       | Vedanta Jain<br>Developing a 3D Deep Learning Architecture for Target-aware De Novo Drug Design   | Central Bucks High School East<br>Mark Hayden                       |
| 12-CMP-003       | Kelly Lao<br>Detection of Major Depressive Disorder Through fMRI Imaging  | Council Rock High School North<br>Stacey Gould                      |
| 12-CMP-004       | Marcus Ridley<br>Can Machines Play?   | Quakertown Christian School<br>Lisa Reichley                        |
| 12-CMP-005       | Srilekha Mamidala<br>Developing a Novel Holistic, Personalized Dementia Risk Prediction Model via Integration of Machine Learning and Network Systems Approaches  | Garnet Valley High School<br>Brenda Frost                           |
| 12-CMP-006       | Jaclyn Torikashvili<br>AI vs. Humans  | Jack M. Barrack Hebrew Academy                                      |
| 12-CMP-007       | Cody San<br>Predicting Data Breaches with Machine Learning  | Cherry Hill High School West<br>Elizabeth Begley                    |
| 12-CMP-008       | Abraham Spector<br>Using Data to Create the Optimal Wakeup Routine  | Cherry Hill High School West<br>Elizabeth Begley                    |
| 12-CMP-009       | Kyle Lin<br>Modeling Date Tree Pruning Robots in a Virtual Environment  | Central High School<br>Robert Herbstritt                            |
| 12-CMP-010       | Mario Toscano<br>Using Neural Networks to Decipher Geographical Origin of Artworks  | Germantown Academy<br>Sarah Kesten                                  |
| 12-CMP-011       | Saptak Das<br>Optimizing Traffic Lights using Game Theory and Control Theory  | Downingtown STEM Academy<br>Anton Ocepek                            |
| 12-CMP-012       | Soham Katdare<br>A Convolutional Neural Network Architecture for Galaxy Morphology Classification   | Downingtown STEM Academy<br>Anton Ocepek                            |
| 12-CMP-013       | Anika Basu<br>Assisting Farmers in Resource-Limited Regions to Expand their Market Reach  | Conestoga High School<br>Kelly Showers                              |

| PRESENTER                         | TITLE  | SCHOOL & SPONSOR                                 |
|-----------------------------------|--|--|
| <b>EARTH &amp; SPACE SCIENCES</b> |  |  |
| 12-E&S-001                        | Jamie Ludwig<br>Star Light, Star Bright:<br>Light Pollution and Star Visibility  | Council Rock High School South<br>Megan Mohl     |
| 12-E&S-002                        | Rong Xu<br>Probing Dark Matter Halo Accretion in Low-Mass<br>Galaxies through Multi-Gaussian Expansion and<br>Jeans Anisotropic Modeling | Central Bucks High School East<br>Judy Elinow    |
| 12-E&S-003                        | Elise Olmstead<br>Pulsar Nulling   | Upper Darby High School<br>Roseann Burns         |
| 12-E&S-004                        | Sammy Obeid<br>Wildfire Prevention Using Machine Learning  | Cherry Hill High School West<br>Elizabeth Begley |
| 12-E&S-005                        | Devin Gibson<br>Bugs Say What?   | Springside Chestnut Hill Academy<br>Scott Stein  |

## ENGINEERING

|            |  |   |
|------------|--|---|
| 12-ENG-001 | Emma Dunn<br>Engineering an Oral Suspension of the<br>Muscle Relaxer Cyclobenzaprine                       | Central Bucks High School East<br>Mark Hayden |
| 12-ENG-002 | Nishi Vyas<br>Bioengineering Heteropentameric Pentraxins for<br>Pharmaceutical and Diagnostic Applications | Central Bucks High School East<br>Mark Hayden |
| 12-ENG-003 | Ben Goldberg<br>Unpickable Lock  | Jack M. Barrack Hebrew Academy                |
| 12-ENG-004 | Rachel Loeb<br>Comparing Packaging Materials   | Jack M. Barrack Hebrew Academy                |
| 12-ENG-005 | Kenden Bair<br>Solar Cooking   | Bangor Area High School<br>Robert Hachtman    |
| 12-ENG-006 | Sooraj Tharumia<br>Digital Eyes: A Computer Vision Assisted<br>Probing Cane for the Visually Impaired      | Parkland High School<br>Kaitlin Heintzelman   |
| 12-ENG-007 | Irwin Wang<br>Non Contact Laser Ultrasound Imaging   | Cab Calloway School of the Arts               |
| 12-ENG-008 | Brian Liu<br>Fusions of Plastics and their Mechanical<br>Properties in 3D Printing                         | Central High School<br>Robert Herbstritt      |
| 12-ENG-009 | Emmanuel<br>Tapia Jimenez<br>Wheels on a Car   | Mariana Bracetti Academy                      |
| 12-ENG-010 | Lucas Philip<br>Piezoelectric Energy Harvesting Apparatus  | Germantown Academy<br>Sarah Kesten            |
| 12-ENG-011 | Alessandra Miller<br>Electroactive Polymers in a Left Ventricular<br>Heart Replacement Prototype           | North Penn High School<br>Melody J. Leithold  |
| 12-ENG-012 | Everett McCrea<br>Layered Success:<br>Improving 3D Printer Yield Rates                                     | Avon Grove Charter School<br>Kate Richardson  |

## ENVIRONMENTAL

|            |  |   |
|------------|--|---|
| 12-ENV-001 | Morgan Lowe<br>Putting the Black Spot on the Black Bug   | Sussex Technical High School<br>Michele Thomas                  |
| 12-ENV-002 | Isabela Saltar<br>Rising Waters  | Cumberland County Technical Education Center<br>Tyler Davenport |
| 12-ENV-003 | Henry Bai<br>Streamlining Co-immobilization Process to<br>Improve Stability of CALA and CALB Lipases<br>Involved in Biodiesel Production | Central Bucks High School East<br>Mark Hayden                   |
| 12-ENV-004 | Jordie Ufberg<br>Plant Growth After a Wildfire   | Jack M. Barrack Hebrew Academy                                  |
| 12-ENV-005 | Haley Zabusky<br>Global Warming's Effect on Monarch Butterflies  | Jack M. Barrack Hebrew Academy                                  |

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                  |
|------------------|---|--|
| 12-ENV-006       | Benjamin Turley<br>Feasibility Study - The Effect of Carbon Sources on Lipid Extraction and Biodiesel Production Using <i>Aspergillus Niger</i> | Cherry Hill High School West<br>Brian Grillo |
| 12-ENV-007       | Alyvia Herman<br>Determining the LD50 of Copper Nanoparticles with Bibb Lettuce   | Emmaus High School<br>Brent Landrum          |
| 12-ENV-008       | Olivia Melazzo<br>The Effects of Pesticides on Non-target Insect Populations  | Bangor Area High School<br>Robert Hachtman   |
| 12-ENV-009       | Tennyson Nelson<br>Moss-Based Filtration  | Avon Grove Charter School<br>Kate Richardson |

## **MATHEMATICS**

|            |  |  |
|------------|--|--|
| 12-MTH-001 | Chantal van Dongeren<br>Modeling Turing Biological Patterns Through Game Theory Concepts           | Central Bucks High School East<br>Judy Elinow  |
| 12-MTH-002 | Chloe Smith<br>The Effect of Covid-19 on the College Admissions Process                            | Academy of Notre Dame de Namur<br>Jessica Reid |
| 12-MTH-003 | Abdullah Mahmoud<br>MathGPT - ChatGPT vs. Algebra Students   | Central High School<br>Robert Herbstritt       |
| 12-MTH-004 | Prithvi Vijay<br>Investigating Patterns and Developing a Potential Proof of the Collatz Conjecture | Downingtown STEM Academy<br>Anton Ocepek       |

## **MEDICINE/HEALTH**

|            |   |   |
|------------|---|---|
| 12-MED-001 | Kailey Miller<br>Tremor Alleviation for Neuromuscular Disorders Using a Weighted Vibrating Glove Prototype  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 12-MED-002 | Jasmin Kainth<br>Identifying Alternate mRNA Splice Sites in Hepatocellular Carcinoma for Biomarker Discovery and Development of Diagnostic Tools for Early Cancer Detection | Central Bucks High School East<br>Mark Hayden                       |
| 12-MED-003 | Hannah Downing<br>How Heart Rate Affects Cognitive Performance  | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 12-MED-004 | Miranda Eisenstein<br>Decelularized Sunflower Modified with Genipin, Starch, & Glycerol as Stem Cell Scaffold   | Jack M. Barrack Hebrew Academy                                      |
| 12-MED-005 | Sophia Mittman<br>Evaluating the Enamel Levels of Teeth Under Different Conditions  | Jack M. Barrack Hebrew Academy                                      |
| 12-MED-006 | Gavriela Kalish-Schur<br>IRE1 Knockdown Leads to an Anxiety Phenotype in <i>Drosophila</i> and Changes in Protein Levels  | J.R. Masterman School<br>Katherine Davis                            |
| 12-MED-007 | Sophia Sun<br>What is the Optimal HPLC Method in Drug Metabolism Studies?   | Central High School<br>Robert Herbstritt                            |
| 12-MED-008 | Ashish Jeyapratap<br>When Green Means Stop and Red Means Go   | Methacton High School<br>Robert Helm                                |
| 12-MED-009 | Zara Bhatt<br>The Effects of Herbal Supplements on Metabolism of Invertebrates  | Germantown Academy<br>Sarah Kesten                                  |
| 12-MED-010 | Sreevarshini Yedida<br>Methylation in Bivalent/PRC2 Domain in Aging and Cancer  | Unionville High School<br>Meghan Kanski                             |
| 12-MED-011 | Mary Kate D'Ambrosio<br>VLS and VVX: Proof of Progression for Pediatric and Adolescent Patients   | Avon Grove High School<br>Lakshmi Vaddi                             |

| <b>PRESENTER</b>    | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>   |
|---------------------|---|---|
| <b>MICROBIOLOGY</b> |   |   |
| 12-MIC-001          | Molly Lafferty<br>How Sanitary are a High School's Drinking Fountains?  | Woodstown High School<br>Chris Rickard                              |
| 12-MIC-002          | Augustine Cho<br>Small But Mighty: Camelid VHH's Role in Binding and Inhibiting SARS CoV-2 Spike Proteins   | Central Bucks High School East<br>Mark Hayden                       |
| 12-MIC-003          | Alexander Ortiz Pantoja<br>Studying the Effects of Common Food Additives on Biofilm Density and Biofilm Biodiversity in Commonly Found Gut Bacteria of the Human Microbiome | Cherry Hill High School West<br>Brian Grillo                        |
| 12-MIC-004          | Logan Rusché<br>Effect of Cell Type on Transformation Efficiency  | Bangor Area High School<br>Robert Hachtman                          |
| 12-MIC-005          | Oliver Krejbich<br>The Effects of FDA Approved Artificial Food Colorings on Gastrointestinal Health   | Bangor Area High School<br>Robert Hachtman                          |
| 12-MIC-006          | Kithya Borey<br>Natural Alternatives:<br>Assessing the Antibacterial Potential of Plant Extracts vs. E. coli K-12   | Central High School<br>Robert Herbstritt                            |
| 12-MIC-007          | Shalaya Brown<br>How Cells Communicate:<br>Finding Mutants That Can't Talk to Each Other  | New Foundations Charter High<br>Mechthild Pohlschroder              |
| <b>PHYSICS</b>      |   |   |
| 12-PHY-001          | Cooper Gray<br>Efficiency Optimization of a Pulsed DC Magnetohydrodynamic Drive   | Bangor Area High School<br>Robert Hachtman                          |
| 12-PHY-002          | Broden Connolly<br>A Quantum Factoring Algorithm for Breaking RSA Encryption  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 12-PHY-003          | Karina Lad<br>The Motion of Air Bubbles in Viscous Liquids  | Central High School<br>Robert Herbstritt                            |
| 12-PHY-004          | Aissata Balde<br>Thermal Twist: Temperature's Role In Elasticity  | George Washington High School<br>Anita Abraham                      |
| 12-PHY-005          | Ryan Dunne<br>Octane's Effect on Miles Per Gallon   | Philadelphia Academy Charter High School<br>Christine Dunne         |
| 12-PHY-006          | John Akladus<br>Advancing Aircraft Efficiency via Drag Coefficient Analysis   | Methacton High School<br>Robert Helm                                |

| PRESENTER      | TITLE   | SCHOOL & SPONSOR  |
|----------------|---|---|
| <b>ZOOLOGY</b> |   |   |
| 12-ZOO-001     | Anthony Billotti<br>Developing an IOS Application That Determines Whether a Marine Organism Meets Harvest Requirements  | Marine Academy of Technology and Environmental Science<br>John Wnek   |
| 12-ZOO-002     | Olivia Maurer<br>Does a Horses Height Affect Their Stride?  | Archbishop Wood High School<br>Sharon Hartranft                       |
| 12-ZOO-003     | Edan Held<br>Aging in Red Wiggler Worms   | Jack M. Barrack Hebrew Academy  |
| 12-ZOO-004     | Benjamin Hess<br>Finding Environmentally Safe Alternatives to Permethrin and DEET of Ixodes Scapularis using Liquidambar Styraciflua Extractions and Essential Oils | Cherry Hill High School West<br>Brian Grillo                          |
| 12-ZOO-005     | Hannah Halm<br>The Effect of the Components of Energy Drinks on the Heart Rate of Daphnia magna   | Freedom High School<br>Graceanne Ruggiero                             |
| 12-ZOO-006     | Kathryn Ackerman<br>Population Assessment Through Facial Recognition of the Sandy Hook Harbor Seal, Phoca Vitulina  | Marine Academy of Technology and Environmental Science<br>Liza Baskin |
| 12-ZOO-007     | Anthony DiFranco<br>Effect of Habitat Disruption in the Wissahickon Watershed on Plethodon cinereus Populations   | Germantown Academy<br>Sarah Kesten                                    |





**PRESENTER****TITLE****SCHOOL & SPONSOR****BEHAVIORAL/SOCIAL SCIENCES**

|            |                     |  |   |
|------------|---------------------|--|---|
| 11-BEH-001 | Shreyas Musuku      | PsySensor: A Novel Algorithm Integrating Biopsychosocial Profiles for Precise Treatment of Mood and Anxiety Disorders Utilizing Self-Supervised Machine Learning | Manalapan High School<br>Jelena Komitas               |
| 11-BEH-002 | Samantha Burkholder | Blood Spatter Analysis   | Bridgeton Highschool<br>Claudia Angle                 |
| 11-BEH-003 | Naima Doraiswamy    | The Utilization of Sound Frequencies to Reverse Cognitive Impairment   | Pennsbury High School<br>Jamie Swanson                |
| 11-BEH-004 | Miranda Palestini   | Analyzing and Determining the Effectiveness of Bionic Reading  | Council Rock High School North<br>Terese Grateful     |
| 11-BEH-005 | Catherine Fofanah   | Emotional Rollercoaster  | Camden Academy Charter High School                    |
| 11-BEH-006 | Brie Hilton         | Can your Gender Determine your Fingerprint Pattern? - A Sex Estimation Study   | Camden Academy Charter High School                    |
| 11-BEH-007 | Isabella Applegate  | The Effect of Friendship on Accuracy in Predicting Choices   | Freedom High School<br>Graceanne Ruggiero             |
| 11-BEH-008 | Aashka Sevak        | How Does Age Affect One's Adulthood Bias?  | Emmaus High School<br>Brent Landrum                   |
| 11-BEH-009 | Emma Bluske         | Is There a Difference in the Academic Confidence of Males and Females?   | Emmaus High School<br>Brent Landrum                   |
| 11-BEH-010 | Srujan Yamali       | Exploring the Behavioral Enigmas of <i>Drosophila melanogaster</i> : Insights into Thigmotaxis and Centrophobism During Mating                                   | Newark Charter High School<br>Matthew Lohman          |
| 11-BEH-011 | Julianna Chang      | Age of Dreams  | Philadelphia Academy Charter H. S.<br>Christine Dunne |
| 11-BEH-012 | Saathvik Gubbala    | Ethical Implications of Artificial Intelligence Bias Through Recidivism Case Study Using Machine Learning  | High Technology High School<br>Dina Ellsworth         |
| 11-BEH-013 | Elizabeth Hercek    | Environmental Engagement vs. Carbon Footprint  | Souderton Area High School<br>Karen Wolfe             |
| 11-BEH-014 | Larry Zhan          | How Human is AI?   | Germantown Academy<br>Sarah Kesten                    |
| 11-BEH-015 | Xin Du              | Approaching Systematic Racism in the United States through the Lens of the Implicit Racial Attitude  | The Shipley School<br>Roberta Brandao                 |
| 11-BEH-016 | Manasvi Koneru      | Correlation Between Stress and Elevated Temperature in Female High School Students   | Villa Maria Academy High School<br>Sr. Regina Ryan    |

**BIOCHEMISTRY**

|            |                   |  |  |
|------------|-------------------|--|--|
| 11-BCM-001 | Prisha Rai        | Utilizing a Novel VAE Pipeline for Tau Inhibitor                                       | High Technology High School<br>Dina Ellsworth      |
| 11-BCM-002 | Daria Drakas      | Acetylcholinesterase (AChE) Inhibitor Development                                      | Central Bucks High School South<br>Michelle Rhodes |
| 11-BCM-003 | Sophia Fehrenbach | Variant Expression of Biomarkers in HCC Exosomes                                       | Central Bucks High School East<br>Mark Hayden      |
| 11-BCM-004 | Helen Xiang       | A Kinetic Study of the Hydrolysis of Cellulose to Glucose in Molten Salt Hydrate Media | Charter School of Wilmington<br>Jennifer Toner     |
| 11-BCM-005 | Yixi Meng         | The Controlled Release of Acriflavin Microparticles                                    | St. Andrew's School<br>Ashley Hyde                 |

2024 11TH GRADE ENTRIES

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                                 |
|------------------|---|---|
| 11-BCM-006       | Shahzoda Jalolidinova<br>Calories in Chips                                | George Washington High School<br>Anita Abraham              |
| 11-BCM-007       | Andrew Malin<br>Ph Effects on Plant Growth                                | Philadelphia Academy Charter High School<br>Christine Dunne |
| 11-BCM-008       | Katie Young<br>Unmasking Microbes with Mouthwash                          | Methacton High School<br>Robert Helm                        |
| 11-BCM-009       | Aidan Gor<br>Identifying Targets in Choroid Plexus to Lower CSF Secretion | Germantown Academy<br>Sarah Kesten                          |
| 11-BCM-010       | Nidhish Chintala<br>Amylase Enzyme Activity in Different Conditions       | Methacton High School<br>Robert Helm                        |
| 11-BCM-011       | Mahika Jawa<br>The Effect of Chemicals Associated with Vape Liquids       | Holmdel High School<br>Matt Kukoda                          |

## **BOTANY**

|            |  |   |
|------------|--|---|
| 11-BOT-001 | Lauren Stanger<br>How Different Types of Fertilizer Impact Brassica Rapa Growth  | Cumberland County Technical Education Center<br>Tyler Davenport                   |
| 11-BOT-002 | Michael Shalevich<br>Effect of Magnetism on the Growth of Pea Plants   | Council Rock High School South<br>Megan Mohl                                      |
| 11-BOT-003 | Roger Tang<br>Effects of Different Mineral Fertilizers on Plants   | Central Bucks High School West<br>Diane Liddington                                |
| 11-BOT-004 | Nandini Rastogi<br>Decoding Climate Resilience: Functional Profiling of Protein Phosphatase 2C Family Genes for Abiotic Stress Tolerance in Rice | Voorhees Middle School<br>YARD Sciences   |
| 11-BOT-005 | Priya Mancheril<br>An Investigation of How Allelopathic Plants Impact Eichhornia Crassipes   | Emmaus High School<br>Brent Landrum   |
| 11-BOT-006 | Talha Ali<br>Optimal Ratio of Auxins and Cytokinins on Plant Growth  | Parkland High School<br>Kaitlin Heintzeman  |
| 11-BOT-007 | Rachel Hilton<br>The Effects of Inorganic, Organic, and Homemade Herbicides on the Height, Health, Color, and Number of Leaves of Dandelions     | Charter School of Wilmington<br>Jennifer Toner                                    |
| 11-BOT-008 | Hakim Woods<br>Whats All That Green Stuff?   | George Washington Carver High School of Engineering and Science<br>Darryl Johnson |
| 11-BOT-009 | Gianna Germano<br>Liquid IV: Keeping Plants Hydrated   | Philadelphia Academy Charter High School<br>Christine Dunne                       |
| 11-BOT-010 | Nishank Rai<br>Measuring Photosynthesis in Hydroponics and Traditional Farming   | Germantown Academy<br>Sarah Kesten  |
| 11-BOT-011 | Hannah Adams<br>How Inhibition of DNA Replication Impacts Plant Survival   | Upper Dublin High School<br>Joanne Lilliendahl                                    |
| 11-BOT-012 | Vinaya Venkat<br>The Effects of the Changes in Spatial Distribution in Cycads  | North Penn High School<br>Melody J. Leithold                                      |

## **CHEMISTRY**

|            |   |   |
|------------|---|---|
| 11-CHM-001 | Kriti Srivastava<br>Integration and Optimization of Cu <sub>2</sub> O and TiN Nanoparticles for Enhanced Solar Cell Performance                       | High Technology High School<br>Craig Queenan      |
| 11-CHM-002 | Esther Zhang<br>Efficacy of Modified Iron Oxide Nanoparticles in Extracting Motor Oil from Water  | Council Rock High School North<br>Terese Grateful |
| 11-CHM-003 | Keino Shaw<br>Cathodic Protection with Impressed Current  | Upper Darby High School<br>Roseann Burns          |
| 11-CHM-004 | Vladimir Bondar<br>Synthesis and Characterization of 1,2,3-Triazole and Methyl-Imidazole based Metal Organic Frameworks for Artificial Photosynthesis | Moorestown High School<br>Sean Watson             |

| <b>PRESENTER</b> | <b>TITLE</b>      | <b>SCHOOL &amp; SPONSOR</b>   |  |
|------------------|-------------------|---|--|
| 11-CHM-005       | Jayaditya Kothari | Optimizing Power and Energy Density to Improve the Capacity of Lithium-Air Batteries by Changing Cathode Microstructures                              | Parkland High School<br>Kaitlin Heintzelman    |
| 11-CHM-006       | Aiden Sanxhaku    | Powering the Planet Through Dirt: The Optimization of Alkaline-Aqueous Redox Flow Batteries for Sustainable Energy Storage                            | J.R. Masterman School                          |
| 11-CHM-007       | Madiha Khan       | Specific Heat Capacity  | George Washington High School<br>Anita Abraham |
| 11-CHM-008       | Rebecca Kideckel  | Nature's Palette: Effectiveness of Natural Dyes   | Lower Moreland High School<br>Richard Becker   |
| 11-CHM-009       | Muhan (Yina) Yao  | Advancing Green Hydrogen Energy: Development of High-Performance Iridium-Titanium Dioxide Catalysts for Oxygen Evolution in Acidic Water Electrolysis | The Hill School<br>Jared Courtney              |
| 11-CHM-010       | Lance Yang        | A Low Cost, Green Approach to Lithium Ion Battery Recycling   | Upper Dublin High School<br>Leanne Jones       |

## COMPUTER

|            |                      |   |   |
|------------|----------------------|---|---|
| 11-CMP-001 | Ishani Singh         | Automated Early Detection of Diabetic Retinopathy Using Deep Learning   | High Technology High School<br>Craig Queenan                |
| 11-CMP-002 | Gajan Mohan Raj      | DiaDetect: A Novel Collaborative-AI Approach for Multiclass Diagnosis of Diabetic Retinopathy   | High Technology High School<br>Dina Ellsworth               |
| 11-CMP-003 | Andrew Freeman       | Effectiveness of Scheduling Accounting for Time Preferences   | Council Rock High School South<br>Megan Mohl                |
| 11-CMP-004 | Thomas Hong          | The Effect of Heat Sink Thermal Paste Compounds on Computer Performance   | Upper Darby High School<br>Roseann Burns                    |
| 11-CMP-005 | Kaiyan Ling          | Modeling Touch Pointing and Detecting Parkinson's Disease via a Mobile Game   | Cherry Hill High School East<br>Mark Brandreth              |
| 11-CMP-006 | Hanning Yan          | Using Functional Connectivity Data to Predict ADHD Severity   | Moravian Academy<br>Wendy Sheetz                            |
| 11-CMP-007 | Jonathan Kachappilly | Effect of Resolution on Low-Visibility Object Detection with Convolutional Neural Networks  | Newark Charter High School<br>Matthew Lohman                |
| 11-CMP-008 | Oren Pipano          | AI Face Tracking for Semi Virtual Reality   | Friends Select School<br>Monica Higgins                     |
| 11-CMP-009 | Brynn Crooks         | Can you Identify, What is AI?   | Philadelphia Academy Charter High School<br>Christine Dunne |
| 11-CMP-010 | Yueyi Bao            | 3D Bidirectional Mapping GAN for Brain Rejuvenation and Aging Simulation  | The Hill School<br>Jared Courtney                           |
| 11-CMP-011 | Shwetha Rajan        | Are You a Victim of Digital Amnesia? Decoding the Google Effect   | North Penn High School<br>Melody J. Leithold                |
| 11-CMP-012 | Sohum Gautam         | Deep Learning Object Detection Drones for Search and Rescue   | Downingtown STEM Academy<br>Anton Ocepek                    |
| 11-CMP-013 | Shivam Maheshwari    | A Machine Learning Approach Using Single-Cell RNA Sequencing to Predict Cytokine Release Syndrome Severity for CAR-T Cell Therapy Patients                      | Unionville High School<br>Meghan Kanski                     |
| 11-CMP-014 | Faizaan Siddique     | A Novel Pipeline for Diagnosing and Predicting Progression of Glaucoma Based on Deep Learning, Supervised Machine Learning and Exploratory Statistical Analysis | Conestoga High School<br>Kelly Showers                      |

| PRESENTER                         | TITLE  | SCHOOL & SPONSOR  |
|-----------------------------------|--|---|
| <b>EARTH &amp; SPACE SCIENCES</b> |  |   |
| 11-E&S-001                        | Morgan Zylinski<br>Determining the Presence of Ferulic Acid in <i>S. alterniflora</i> and its Biogeochemical Influences within Saltmarshes at Barnegat Bay, NJ | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 11-E&S-002                        | Jonathan Farrell<br>The Effects of Nose Cone Shape on Rocket Flight  | Woodstown High School<br>Chris Rickard                              |
| 11-E&S-003                        | Jaden Shkolnikov<br>Automating the Calculation of Stellar Temperatures   | Central Bucks High School East<br>Judy Elinow                       |
| 11-E&S-004                        | Muntassir Nabeel<br>Effect of Substrate on Liquefaction  | Upper Darby High School<br>Roseann Burns                            |
| 11-E&S-005                        | Tasneem Yeasmin<br>Sea Level Rise: The Effects of Salinity on the Thermal Expansion of Water   | Upper Darby High School<br>Roseann Burns                            |
| 11-E&S-006                        | Abhinav Kartik<br>Using Machine Learning to Understand Quasar Formation  | High Technology High School<br>Dina Ellsworth                       |
| 11-E&S-007                        | Prmya Surapaneni<br>High-Speed Neural Network Tsunami Predictor with Multiple Adjustable Parameters  | High Technology High School<br>Dina Ellsworth                       |
| 11-E&S-008                        | Eileen Wang<br>The Simulation of Particle Movement to Study the Universe   | Germantown Academy<br>Sarah Kesten                                  |
| 11-E&S-009                        | Roy Zhao<br>DroughtGNN: Novel Spatial-Temporal Graph Neural Network for Optimized African Drought Prediction   | Germantown Academy<br>Sarah Kesten                                  |

## ENGINEERING

|            |   |   |
|------------|---|---|
| 11-ENG-001 | Maggie Kelleher<br>Using Wasted Recyclable Plastics to Decrease Carbon Emissions from Concrete  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 11-ENG-002 | Owen McElhaugh<br>Injury Impact in the Design of Artificial Climbing Holds  | Council Rock High School South<br>Megan Mohl                        |
| 11-ENG-003 | David Ding<br>Design and Analysis of a Novel Portable Wave-Powered Desalination Device for Emergency Situations and Remote Coastal Communities                          | The Episcopal Academy<br>Matthew Memmo                              |
| 11-ENG-004 | Mohammed Rahman<br>Recycling PET Plastics into Usable and Affordable 3-D Printer Filament   | Upper Darby High School<br>Roseann Burns                            |
| 11-ENG-005 | Carly Gittle<br>Capturing Untapped Energy Potential With 0% Carbon Footprint to Offset Fossil Fuel Usage  | Lower Cape May Regional High School<br>Gina Givens                  |
| 11-ENG-006 | Dominik Krzton<br>Increasing a Propeller Aircraft Performance through Aerodynamic Optimization  | Cherry Hill High School West<br>Brian Grillo                        |
| 11-ENG-007 | Gloria Klees<br>The Effect of Color Theory on the Diagnosis of Skin Disorders in Dark Skinned Patients  | Emmaus High School<br>Brent Landrum                                 |
| 11-ENG-008 | Brandon Cai<br>Creating Digital Eyes Using Sensor Fusion and Stereo Vision  | Parkland High School<br>Kaitlin Heintzeman                          |
| 11-ENG-009 | Jillian Halm<br>The Effect of Various Polymers on the UV Resistance of Glass  | Freedom High School<br>Graceanne Ruggiero                           |
| 11-ENG-010 | Rishay Gupta<br>Infrared Localization: Designing a Novel End Effector for Pneumatic EMS Soft-Robots   | Middletown High School South<br>Kelly Matri                         |
| 11-ENG-011 | Yiru Wang<br>Pneumatic Exoskeleton for Knee Flexion & Extension Facilitation During Rehabilitation: A Lightweight, Personalized, Multi-Functional Rehabilitation Device | St. Andrew's School<br>Ashley Hyde                                  |
| 11-ENG-012 | Zeshen Chen<br>CataractNavigEase: ROS Robot for Elderly Cataract Patients with SLAM Navigation  | The Hill School<br>Jared Courtney                                   |

| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                  |
|------------------|--|--|
| 11-ENG-013       | Joshua Yoon<br>Predicting Food Sustainability in Adams County, PA with Hybrid Machine Learning | Lower Moreland High School<br>Richard Becker |
| 11-ENG-014       | Xiangbin Luo<br>Quadruped Forest Ranging Robot   | The Hill School<br>Jared Courtney            |
| 11-ENG-015       | Xiaoyang Xu<br>Needle Roller Structured Climbing Robot   | Westtown School<br>Veda Robinson             |

## **ENVIRONMENTAL**

|            |   |   |
|------------|---|---|
| 11-ENV-001 | Wade Hubschmitt<br>Which Firewood Gives the Most Burn Time?   | Woodstown High School<br>Chris Rickard                |
| 11-ENV-002 | Vidya Jayaprakash<br>Energy Storage Solutions: Understanding How Wind Energy Can Be Stored Most Efficiently For Later Use                             | Council Rock High School North<br>Terese Grateful     |
| 11-ENV-003 | Alex Tao<br>Applications of Chlorophyta in Papermaking  | Council Rock High School North<br>Stacey Gould        |
| 11-ENV-004 | Pranav Vijay<br>Combating Legacy Pollution: How Biochar Produced from a Common Organic Waste can Help Fight Pennsylvania's Acid Mine Drainage Problem | Garnet Valley High School<br>Brenda Frost             |
| 11-ENV-005 | Derrick Wang<br>Multiwalled, Densified Wood Tubes as a Sustainable High Performance Structural Material   | Garnet Valley High School<br>Emily Hui                |
| 11-ENV-006 | Ina Nikolova<br>Monitoring the Wrack Line   | Lower Cape May Regional High School<br>David Pacevich |
| 11-ENV-007 | Vanessa Genda<br>Unveiling Antibiotic-Resistance: A Comparative Study Across Urban, Agricultural, and Pristine Zones of New Jersey                    | Cherry Hill High School West<br>Brian Grillo          |
| 11-ENV-008 | Natalya Ding<br>Superbacteria vs. Superfund Site: Life in Extreme Environments  | Southern Lehigh High School<br>Jill Suzanne Forrest   |
| 11-ENV-009 | Cayden Bray<br>The Effects of Microplastics on Sea Anemones   | Bangor Area High School<br>Robert Hachtman            |
| 11-ENV-010 | Samith Rohatgi<br>Combining Satellite Imagery and Convolutional Neural Networks to Determine the Likelihood of Wildfires in a Given Area              | Parkland High School<br>Kaitlin Heintzelman           |
| 11-ENV-011 | Gabrielle Dube<br>The Oil Spill Station   | St. Mark's High School<br>Michael Holland             |
| 11-ENV-012 | Siddhi Dinavahi<br>The Impact of the 2023 Canadian Wildfires on the United States Air Quality   | Charter School of Wilmington<br>Jennifer Toner        |
| 11-ENV-013 | Jiayi (Madalyn) Shen<br>A GrowStation Control Study: The Impact of Arbuscular Mycorrhizae and Light Controls on Basil and Tomato Growth               | Germantown Friends School<br>Maria Alvarez            |
| 11-ENV-014 | Joshua Miller<br>The Effect of Pesticide Runoff on Gram Positive and Gram Negative Bacteria   | Springside Chestnut Hill Academy<br>Scott Stein       |
| 11-ENV-015 | Alycia Steck<br>Biostim and Glyphosate Residue on Planaria Microbiome   | Germantown Academy<br>Sarah Kesten                    |
| 11-ENV-016 | Roma Reddy<br>Effect of Passiflora Incarnata Extract on GABA Levels of Drosophila Melanogaster  | Germantown Academy<br>Sarah Kesten                    |
| 11-ENV-017 | Remington Yang<br>Use of Non-Thermal Plasma Coupled with Activated Carbon for the Degradation of PFAS in Water  | Conestoga High School<br>Kelly Showers                |
| 11-ENV-018 | Emma Smith<br>Teslas and the Environment  | Avon Grove Charter School<br>Kate Richardson          |



| <b>PRESENTER</b>       | <b>TITLE</b>          | <b>SCHOOL &amp; SPONSOR</b>   |   |
|------------------------|-----------------------|---|---|
| <b>MATHEMATICS</b>     |                       |   |   |
| 11-MTH-001             | Logan Mesh            | Frequencies of Widely Digitally Isolated Primes   | High Technology High School<br>Craig Queenan    |
| 11-MTH-002             | Dahlia<br>Atanasova   | Refolding Pentraxins from E. coli Inclusion Bodies:<br>A Statistical Analysis   | Central Bucks High School East<br>Mark Hayden   |
| 11-MTH-003             | Arya Honawar          | Drinking and Driving - How Bad is It?   | Council Rock High School North<br>Stacey Gould  |
| 11-MTH-004             | Krish Patel           | A Novel Cryptographic Cipher Incorporating<br>Complex Analysis and Transformative Geometry  | Manalapan High School<br>Jelena Komitas         |
| 11-MTH-005             | Luke Hu               | Solving the Three Body Problem with Deep Learning   | Germantown Academy<br>Sarah Kesten              |
| 11-MTH-006             | Dylan Wen             | The Tennis Formula  | Methacton High School<br>Robert Helm            |
| 11-MTH-007             | Shoubhit<br>Mukherjee |   |   |
| <b>MEDICINE/HEALTH</b> |                       |   |   |
| 11-MED-001             | Maddie Morris         | Kicking Out Knee Tension:<br>A Study in Flexion and Tension   | Pennsville Memorial High School<br>Cherie Burns |
| 11-MED-002             | Esha Gadi             | Evaluating the Effects of a Simulated Fever<br>on the Mechanisms of Antigen Presenting Cells:<br>Implications for Viral infections          | Central Bucks High School East<br>Mark Hayden   |
| 11-MED-003             | Prithvi Krish         | Serine Arginine Protein Kinase (SRPK1) as a<br>Potential Therapeutic Target to Treat Liver Cancer   | Central Bucks High School East<br>Mark Hayden   |
| 11-MED-004             | Tajkera Afifa         | Formation of Sodium Alginate Beads for<br>Targeted Therapeutics   | Upper Darby High School<br>Roseann Burns        |
| 11-MED-005             | Grace Yacobe          | Ameliorating Previously Conducted Study of<br>Utilizing Mesenchymal Stem Cell as a Therapy for<br>Celiac Disease: Year 2                    | Academy of Notre Dame de Namur<br>Jessica Reid  |
| 11-MED-006             | Zachary Wei           | Analyzing Physicochemical Properties of Hydrogel<br>Implants in Alleviating Pain in Patients with<br>Degenerative Disc Disease              | Cherry Hill East<br>Mark Brandreth              |
| 11-MED-007             | Ruoyu Chen            | A Zoom-In Algorithmic Microscope: Hierarchically<br>Detecting Rare Cell Populations in scRNA-seq Data<br>with Self Supervised Deep Learning | Moorestown High School<br>Sean Watson           |
| 11-MED-008             | Adarsh<br>Naryanan    | DNA Extraction using Laboratory Reagents<br>vs. Household Materials   | Parkland High School<br>Kaitlin Heintzeman      |
| 11-MED-009             | Julia Carroll         | Assessing the Consumer Acceptance of High<br>Calorie Drinks on Low Weight Individuals   | Charter School of Wilmington<br>Jennifer Toner  |
| 11-MED-010             | Michelle Zhou         | Effects of Inflammation on Blood-Brain<br>Barrier Permeability  | Newark Charter High School<br>Matthew Lohman    |
| 11-MED-011             | Brendan Russell       | Effect of Concussions on Climbing Activity<br>Wild Type and Serotonin Unresponsive<br>Drosophila Melanogaster                               | Springside Chestnut Hill Academy<br>Scott Stein |
| 11-MED-012             | Emma<br>Ludwikowski   | Bacteria and Mold Growth in Brass Instruments   | Springside Chestnut Hill Academy<br>Scott Stein |
| 11-MED-013             | Jessica Wang          | Chronic Sleep Deprivation Activates<br>NLRP3 Inflammasome   | Germantown Academy<br>Sarah Kesten              |
| 11-MED-014             | Vedika<br>Deshpande   | Cannabis and Reproductive Health  | North Penn High School<br>Melody J. Leithold    |

| PRESENTER  | TITLE              | SCHOOL & SPONSOR  |  |
|------------|--------------------|---|--|
| 11-MED-015 | Abhinav Siripurapu | CDRGen: An LLM-based System for Generating Optimized and Binding CDR3 Regions | The Hill School<br>Jared Courtney        |
| 11-MED-016 | Pranav Ayyappan    | Spinal V2a Interneurons Are Synaptically Integrated With Bicep Motor Networks | Downingtown STEM Academy<br>Anton Ocepek |

## MICROBIOLOGY

|            |                      |   |  |
|------------|----------------------|---|--|
| 11-MIC-001 | Prisha Parmar        | Modeling Ebola Using a Pseudotyped Lentivirus   | Central Bucks High School East<br>Mark Hayden    |
| 11-MIC-002 | Eepsitha Popuri      | Generation of Stable Pentraxin ExpiCHO Cell Lines   | Central Bucks High School East<br>Mark Hayden    |
| 11-MIC-003 | Karine Johnson       | Investigation of Common Fungi: Lentinula edodes, Agaricus bisporus, Polyporaceae, Inonotus hispidus, Pleurotus ostreatus, and Hericium erinaceus for Their Antibacterial Potential Against Staphylococcus, Pseudomonas, and E. Coli | Cherry Hill High School West<br>Brian Grillo     |
| 11-MIC-004 | Colin Coleman        | Understanding how Vaping can Affect Biofilm Formation in the Oral Cavity  | Cherry Hill High School West<br>Brian Grillo     |
| 11-MIC-005 | Aadhavan Raja Nainar | Leukemia Detection using Image Recognition  | Parkland High School<br>Kaitlin Heintzelman      |
| 11-MIC-006 | Siddharth Danthuluri | Quantification and Supplementation of Blautia schinkii to Mitigate Methanogenesis and Enhance Host Vitality in Holstein Dairy Calves  | The Newark Charter High School<br>Daniel Bartnik |
| 11-MIC-007 | Eric Morshed         | The Microbiome of C. elegans and Its Impact on Health   | Biotechnology High School<br>Samantha Taff       |
| 11-MIC-008 | Priya Jonas          | Kombuchas Effect on Disease   | Springside Chestnut Hill Academy<br>Scott Stein  |
| 11-MIC-009 | Neha Jonnalagadda    | Effect of Biodegradable Plastics on Soil Microorganisms and Plant Growth  | Germantown Academy<br>Sarah Kesten               |
| 11-MIC-010 | Srija Chaudhuri      | Curing Depression w/Autologous CRISPR Microbiome Transplant   | Upper Dublin High School<br>Joanne Lilliendahl   |
| 11-MIC-011 | Jerry Huynh          | The Effect of Gelatin Encapsulation on Phages Infectivity on E. coli C and Survivability in Different Conditions  | Westtown School<br>Veda Robinson                 |

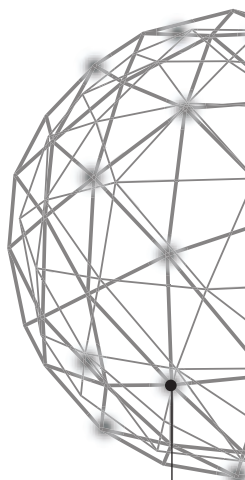
## PHYSICS

|            |                    |  |   |
|------------|--------------------|--|---|
| 11-PHY-001 | Ava Boyle          | Examining the Effect of Physical Parameters on Projectile Penetration In Ballistic Gelatin       | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 11-PHY-002 | Catherine Gumbs    | Testing Faraday's Law and Lenz's Law with Magnets  | Villa Joseph Marie High School<br>John Gentile                      |
| 11-PHY-003 | Naievaidya Kaushik | Van der Waals Interactions in 2D Materials   | Council Rock High School North<br>Stacey Gould                      |
| 11-PHY-004 | Ranjit Rajapakse   | Analyzing Factors that Impact Electricity Generation   | Central Bucks High School East<br>Judy Elinow                       |
| 11-PHY-005 | Katie McNeill      | Solar Panels, Hot or Not?  | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 11-PHY-006 | MD Nahidul Sabit   | The Role of Metallicity in the Formation and Evolution of Exoplanets and Impacts on Habitability | Archbishop John Carroll High School<br>Justin Stahl                 |
| 11-PHY-007 | Andy Nguyen        | Traffic Laws of the Universe   | Cherry Hill High School West<br>Brian Grillo                        |

| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                        |
|------------------|--|--|
| 11-PHY-008       | Minori Yamashita<br>Relationship between Mechanical Energy Conservation and Density of Moving Object             | Parkland High School<br>Kaitlin Heintzelman        |
| 11-PHY-009       | Jianna Kim<br>Computational Analysis of Lagrange Points to Predict Space Debris Trajectory and Shield Spacecraft | Germantown Academy<br>Sarah Kesten                 |
| 11-PHY-010       | Elena Lin<br>CNC Machining for Surface Smoothing of 316L Stainless Steel   | Germantown Academy<br>Sarah Kesten                 |
| <b>ZOOLOGY</b>   |  |  |
| 11-ZOO-001       | Angela Conover<br>A Colorful Approach to Geese Deterrence  | Cherry Hill High School West<br>Brian Grillo       |
| 11-ZOO-002       | Aleena Khokhar<br>Testing the Effectiveness of Natural Anesthetics   | Emmaus High School<br>Brent Landrum                |
| 11-ZOO-003       | Alice Yan<br>The Effect of Light on Rodent Circadian Rhythm  | Charter School of Wilmington<br>Jennifer Toner     |
| 11-ZOO-004       | Natalie Le<br>Circadian Impact on Fruit Fly Memory   | Central High School<br>Robert Herbstritt           |
| 11-ZOO-005       | Angela Le<br>The Impact of Supplemental Sugar on the Health of Fruit Flies                                       | Central High School<br>Robert Herbstritt           |
| 11-ZOO-006       | Zarin DeVeaux<br>The Effects of Light on the Circadian Rhythm of Planarians                                      | Springside Chestnut Hill Academy<br>Scott Stein    |
| 11-ZOO-007       | Winston Sun<br>The Effect of Caridea and Aquaponics on Algae Blooms  | Germantown Academy<br>Sarah Kesten                 |
| 11-ZOO-008       | Katherine Song<br>The Effects of Fertilizer on Water Daphnia   | Germantown Academy<br>Sarah Kesten                 |
| 11-ZOO-009       | Rose Dugery<br>Lions, Tigers and Water Bears   | Villa Maria Academy High School<br>Sr. Regina Ryan |



| PRESENTER                         | TITLE   | SCHOOL & SPONSOR  |
|-----------------------------------|---|---|
| <b>BEHAVIORAL/SOCIAL SCIENCES</b> |   |   |
| 10-BEH-001                        | Jason Wang<br>Analyzing Political Bias in Large Language Models (LLM)   | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-BEH-002                        | Poojitha Medi<br>Impact of Music on Focus   | Central Bucks High School West<br>Diane Liddington                  |
| 10-BEH-003                        | Aditi Podduturi<br>Can Humans Recognize Chat GPTs AI Generated Text?  | Central Bucks High School South<br>Michelle Rhodes                  |
| 10-BEH-004                        | Elena Herpel<br>Music to My Ears?   | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 10-BEH-005                        | Kate Hebben<br>The Impact of Microplastics on Freshwater Fish Behavior  | Cherry Hill High School West<br>Brian Grillo                        |
| 10-BEH-006                        | Emily Kim<br>The Mu Rhythm Suppressions of Participants With and Without Previous Bone Injuries   | High Technology High School<br>Craig Queenan                        |
| 10-BEH-007                        | Dorisa Sun<br>Effects of Ultraviolet Lght Intensities on C. elegans Reproductive Behavior and Offspring Development                       | High Technology High School<br>Dina Ellsworth                       |
| 10-BEH-008                        | Emma Yoon<br>The Effect of Music Genre on Memory Retention  | Charter School of Wilmington<br>Jennifer Toner                      |
| 10-BEH-009                        | Charlie Benatov<br>GMO Foods in America   | George Washington High School<br>Darryl Johnson                     |
| 10-BEH-010                        | Makayla Polk<br>Scientific Study Sounds   | George Washington High School<br>Darryl Johnson                     |
| 10-BEH-011                        | Gabriel Meinstein<br>Demographics Change in Relation to Humanizing Homicide Coverage  | Germantown Academy<br>Sarah Kesten                                  |
| <b>BIOCHEMISTRY</b>               |   |   |
| 10-BCM-001                        | Chloe Wnek<br>Quaternary Ammonium Cations Environmental Effect on Local Water Bodies Using Spectrophotometry                              | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-BCM-002                        | Alyssa Berry<br>How Does Temperature Affect Enzyme Reaction?  | Woodstown High School<br>Chris Rickard                              |
| 10-BCM-003                        | Ahjung Kim<br>Investigation of Ferroptosis Inhibitors as Potential Treatment for Alzheimer's Disease                                      | Council Rock High School North<br>Stacey Gould                      |
| 10-BCM-004                        | Devin Yang<br>The Effects of Beneficial Natural Compounds on Yeast Cells  | Central Bucks High School East<br>Judy Elinow                       |
| 10-BCM-005                        | Lilly Clarke<br>Gel Electrophoresis   | Upper Darby High School<br>Roseann Burns                            |
| 10-BCM-006                        | Victoria Li<br>Taste the Rainbow, Naturally: The Possibilities of Chromoproteins  | Garnet Valley High School<br>Brenda Frost                           |
| 10-BCM-007                        | Shreya Kalapatapu<br>Attempting to Reverse Antimicrobial Resistance Using Existing Antibiotics  | Voorhees Middle School<br>YARD Sciences                             |
| 10-BCM-008                        | Vedant Malik<br>MyeloMut: A Novel Biocomputational Spproach for Identifying Common Patterns in Genetic Mutations Causing Multiple Myeloma | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-BCM-009                        | Anish Pallod<br>A Novel Framework to Fold and Analyze Protein Interactions  | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-BCM-010                        | Tatianna Febles-Perez<br>Food Contamination   | Lacey Township High School<br>Alexandra York                        |



2024 10TH GRADE ENTRIES

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>   |  |
|------------------|---------------|---|--|
| 10-BCM-011       | Ky Rawl       | Bio Remediation Using Oyster Mushrooms  | Temple Stem-UP<br>Samy Belbgra           |
| 10-BCM-012       | Ryan Shiji    | Epigenetic Control to Resistance to PROTACs   | Central High School<br>Robert Herbstritt |
| 10-BCM-013       | Devin Zoeduah | Egg In Vinegar  | Mariana Bracetti Academy                 |
| 10-BCM-014       | Giana Nieves  | An Exploration of Nitrate and Phosphorus Levels in the Waters of Chester County, Pennsylvania | Villa Maria High School                  |

## **BOTANY**

|            |                    |  |   |
|------------|--------------------|--|---|
| 10-BOT-001 | Katya Geyer        | CloverCare: Growing Green Solutions for Nitrogen Harmony   | Sussex Academy<br>Janet Owens                                       |
| 10-BOT-002 | Aidan Taulane      | Which Fertilizer will Make Grass Grow the Best?  | Woodstown High School<br>Chris Rickard                              |
| 10-BOT-003 | Emily Eayre        | Sustainably Enhancing Leek Crop Production through the Utilization of Almond Agaricus and Arbuscular Mycorrhizal Fungi | Council Rock High School North<br>Terese Grateful                   |
| 10-BOT-004 | Katherine Phillips | How Does Electricity Affect Plant Growth?  | Villa Joseph Marie High School<br>John Gentile                      |
| 10-BOT-005 | Daniel Styer       | Microgravity   | Home School   |
| 10-BOT-006 | Emily Sweeney      | Seed Growth in Different Soils   | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 10-BOT-007 | Lillian Boyd       | An Assessment of the Health of Zostera marina Under Varying Ocean Acidification Simulations                            | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-BOT-008 | Cindy Tran         | The Effect of Salinity and Acidity on Mung Bean Growth   | Charter School of Wilmington<br>Jennifer Toner                      |
| 10-BOT-009 | Kamiyah Rawl       | Easier Compost   | Temple Stem-UP<br>Samy Belbgra                                      |
| 10-BOT-010 | Yuktha Bungatavula | Hydroponic System and Salinity's Impact on Plant Growth  | Souderton Area High School<br>Karen Wolfe                           |
| 10-BOT-011 | Kelvin Zhang       | A Sustainable Approach to Agriculture  | Souderton Area High School<br>Karen Wolfe                           |
| 10-BOT-012 | Ava Joseph         | The Effects of Microgravity on Cress Plant Growth and its Future Applications  | Conestoga High School<br>Kelly Showers                              |
| 10-BOT-013 | Sanath Edke        | Deducing Which Potassium Compost is Most Effective at Growing a Plant  | Downingtown STEM Academy<br>Anton Ocepek                            |

## **CHEMISTRY**

|            |                       |  |   |
|------------|-----------------------|--|---|
| 10-CHM-001 | Kyle Wlazlowski       | An Examination of Dissolution Effects of Acetaminophen in Conjunction with Vitamin B <sub>6</sub> In a Simulated Stomach Environment | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-CHM-002 | Donna Basile          | Does Gatorade Have a Higher Concentration of Electrolytes Than Orange Juice?   | Woodstown High School<br>Chris Rickard                              |
| 10-CHM-003 | Dante Howell Jr.      | Lowering the Freezing Point  | Bridgeton Highschool<br>Claudia Angle                               |
| 10-CHM-004 | Enrique Pantaleon Jr. | The Race to Melt   | Bridgeton Highschool<br>Claudia Angle                               |
| 10-CHM-005 | Jayani Yate           | Effects of Chemical Lightening on the Structure of Hair  | Central Bucks High School South<br>Michelle Rhodes                  |



| <b>PRESENTER</b> | <b>TITLE</b>          | <b>SCHOOL &amp; SPONSOR</b>   |   |
|------------------|-----------------------|---|---|
| 10-CHM-006       | Asha Chakrabarti      | Biomimicry: Replacing Toxic Chemicals in Marine Antifouling Paints Through Superhydrophobicity - Impact of Replicating the Surface of the Lotus Leaf to Prevent Marine Growth | Moorestown High School<br>Sean Watson           |
| 10-CHM-007       | Peter Moon            | Effects of Temperature on Acidic Buffer Capacity  | Cherry Hill East<br>Mark Brandreth              |
| 10-CHM-008       | Joy Yang              | The Effect of pH Level on Tooth Erosion   | Charter School of Wilmington<br>Jennifer Toner  |
| 10-CHM-009       | Arya Anilkumar        | The Effect of Different Types and Amounts of Salts on the Temperature of Ice  | Charter School of Wilmington<br>Jennifer Toner  |
| 10-CHM-010       | Aaron Jia             | The Effects of Concentration Gradient on Amperage of a Circuit  | Springside Chestnut Hill Academy<br>Scott Stein |
| 10-CHM-011       | Evelyn Lee            | The Effect of Natural Acids on the Hair Structure of 1A Black Hair  | High Technology High School<br>Craig Queenan    |
| 10-CHM-012       | Praneel Jammalamadaka | The Carbon Dioxide Problem  | Souderton Area High School<br>Karen Wolfe       |
| 10-CHM-013       | Anna Akhobadze        | Which Crystal is Most Effective in Creating Energy?   | Lower Moreland High School<br>Richard Becker    |

## COMPUTER

|            |                       |   |  |
|------------|-----------------------|---|--|
| 10-CMP-001 | Amogh Biradar         | EcoSort: An IoT-based Device using Machine Learning and AWS to Help Solve the World's Greatest Threat   | Lenape High School<br>Jim Scott                |
| 10-CMP-002 | Nithilan Rengapragash | AEye - A Novel Low-Cost Non-Invasive Approach to Vision Augmentation Through Cutting-Edge AI and Augmented Reality for Age-Related Macular Degeneration (AMD) | Lenape High School<br>Jim Scott                |
| 10-CMP-003 | Neha Atchyuthuni      | Synthetic Data: A Novel Approach to Predict Diabetes  | Parkland High School<br>Kaitlin Heintzelman    |
| 10-CMP-004 | Jophy Lin             | Advancing Diabetic Retinopathy Detection: Reducing Misdiagnosis Using Deep Ensemble Learning  | Manalapan High School<br>Jelena Komitas        |
| 10-CMP-005 | Kai Fu                | Effects of Engagement in an Interactive Learning Experience about Electronic Waste on Understanding Electronic Waste Better                                   | Charter School of Wilmington<br>Jennifer Toner |
| 10-CMP-006 | Jeshen Kannan         | The Effect of Implementing an Application on the Amount of Time It Takes for a Hospital Patient to Receive What They Request                                  | Charter School of Wilmington<br>Jennifer Toner |
| 10-CMP-007 | Bhasin Maya           | Using Machine Learning Models to Predict the Spread of Wildfires in California Based on Temperature Data  | High Technology High School<br>Dina Ellsworth  |
| 10-CMP-008 | Tyler Tang            | Ability of AI Types on Handwritten Hanzi & Kanji Recognition  | Germantown Academy<br>Sarah Kesten             |
| 10-CMP-009 | Shivam Joshi-Awasthi  | Beyond Images: Seeing the Unseen of Alzheimer's Disease   | North Penn High School<br>Melody J. Leithold   |
| 10-CMP-010 | Tanay Vajhala         | A Mathematical Model to Predict Probability of Highly Magnetized Dwarves in 3 Spatial Dimensions  | Downingtown STEM Academy<br>Anton Ocepek       |
| 10-CMP-011 | Om Patel              | Analyzing Sentiment Analysis: Exploring the Efficiency of AI in Prediction of Stock Price Movements   | Downingtown STEM Academy<br>Anton Ocepek       |
| 10-CMP-012 | Boyu Liu              | Source Localization for Hazardous Gas Leakage in a Chemical Plant through a Combination of Machine Learning and CFD Simulation                                | Home School Liu                                |

| <b>PRESENTER</b>                  | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                        |
|-----------------------------------|---|--|
| <b>EARTH &amp; SPACE SCIENCES</b> |   |  |
| 10-E&S-001                        | Jacob Silva<br>Effect of Rocket Length on Altitude  | Woodstown High School<br>Chris Rickard             |
| 10-E&S-002                        | Shreejith Krishnamoorthy<br>A Novel Approach to Inhibit Ocean Acidification via Artificial Photosynthesis   | Central Bucks High School South<br>Michelle Rhodes |
| 10-E&S-003                        | Erin Leach<br>Impact of Different Lights on Light Pollution   | Council Rock High School North<br>Terese Grateful  |
| 10-E&S-004                        | Mohd Tarunno<br>Effectiveness of Calculating the Redshift of Quasars Photometrically  | Upper Darby High School<br>Roseann Burns           |
| 10-E&S-005                        | Jerry Wang<br>TESSNet: Analysis of Transfer Learning for a TESS Exoplanet Classification Model Utilizing Deep Learning                                      | Parkland High School<br>Kaitlin Heintzeman         |
| 10-E&S-006                        | Alan Jiang<br>Iron Fertilization in a Simulated Ocean   | Upper Dublin High School<br>Joanne Lilliendahl     |
| <b>ENGINEERING</b>                |   |  |
| 10-ENG-001                        | Jacob Marino<br>Re-Breakable vs. Wooden Boards  | Woodstown High School<br>Chris Rickard             |
| 10-ENG-002                        | Luke Shaw<br>How Does Using Different Arrows of Different Weights Affect the Transfer of Kinetic Energy?  | Woodstown High School<br>Chris Rickard             |
| 10-ENG-003                        | Abhay Chathuruthy<br>Using Home Automation to Predict Mold Growth   | Central Bucks High School South<br>Michelle Rhodes |
| 10-ENG-004                        | Hansika Kodavali<br>A Novel Approach to pH Regulation in Hydroponics  | Council Rock High School North<br>Terese Grateful  |
| 10-ENG-005                        | Khandakar Mahin<br>Wireless Power Transfer Through Nearfield Inductive Coupling Method  | Upper Darby High School<br>Roseann Burns           |
| 10-ENG-006                        | Shelby Parker<br>Out of Tthis World!: A Functioning Flying Saucer   | Academy of Notre Dame de Namur<br>Jessica Reid     |
| 10-ENG-007                        | Aditya Khurana<br>SeniorConnect: A Low-Cost, App-Based Real-Time Alert System to Connect Seniors with Cognitive Disabilities to Their Caregivers            | Moorestown High School<br>Sean Watson              |
| 10-ENG-008                        | Sonia Leo<br>Novel, Intelligent, Personalized, Global - Real-time Silent Messaging and Communication Device for Completely Paralyzed and Bedridden Patients | Moorestown High School<br>Sean Watson              |
| 10-ENG-009                        | Aryan Kapoor<br>Creation of a Permanent, Self-Sufficient AUV to Navigate Subsea Pipelines and Improve Oil Leak Detection                                    | Parkland High School<br>Kaitlin Heintzeman         |
| 10-ENG-010                        | Aadi Deshmukh<br>AquaGuard: A Multimodal Device for Real-Time Drowning Detection in Swimming Pools  | Moravian Academy<br>Wendy Sheetz                   |
| 10-ENG-011                        | Aarav Upadhyay<br>A Novel 3D-Printed Damper to Mitigate the Effects of Unwanted Vibration in Motors   | High Technology High School<br>Craig Queenan       |
| 10-ENG-012                        | Atharv Sharma<br>Can Humans Identify the Difference Between Human-Generated Text and AI-Generated Text?   | Charter School of Wilmington<br>Jennifer Toner     |
| 10-ENG-013                        | Gracelyn Xiao<br>Microplastics filter for Washing Machines  | Temple Stem-UP<br>Samy Belbgra                     |
| 10-ENG-014                        | Anabelle Ahteck<br>SeamStress: A Novel Conductible Thread Stress Sensor Stitched in Clothing Seams for Gait Analysis  | High Technology High School<br>Dina Ellsworth      |

| <b>PRESENTER</b> | <b>TITLE</b>       | <b>SCHOOL &amp; SPONSOR</b>  |
|------------------|--------------------|--|
| 10-ENG-015       | Tamara Brockington | Driving With Fuel Cells<br>Abington Friends School<br>Scott Sowers   |
| 10-ENG-016       | Maximillian Kopp   | Flexible Nano-Material Sensors for Non-Invasive Health Monitoring<br>Germantown Academy<br>Sarah Kesten          |
| 10-ENG-017       | Encheng Wang       | Underwater Bionic Fish with Frame Shake Prevention and Video Stabilization<br>The Hill School<br>Jared Courtney  |
| 10-ENG-018       | Sophia Gao         | Wearable Hazardous Gas Sensor for Respiratory Health Monitoring<br>High Technology High School<br>Dina Ellsworth |

## **ENVIRONMENTAL**

|            |                     |  |
|------------|---------------------|--|
| 10-ENV-001 | Alexander Roblero   | Turbine Electricity Gain<br>Bridgeton Highschool<br>Claudia Angle  |
| 10-ENV-002 | Ryan Dikon          | Ecological Burn on Eastern Pennsylvania Topsoil<br>Council Rock High School North<br>Stacey Gould  |
| 10-ENV-003 | Derek Hartranft     | Effect of Air Pollution on Seed Germination<br>Archbishop Wood High School<br>Sharon Hartranft   |
| 10-ENV-004 | Rella Smith         | Liquid Tree<br>Central Bucks High School West<br>Diane Liddington  |
| 10-ENV-005 | Sanvi Metkar        | Testing the Ability of Bio-Filters to Combat Carbon Footprint<br>Voorhees Middle School<br>YARD Sciences   |
| 10-ENV-006 | Sydney Klever       | Effects of Different Trees on Greenhouse Gases<br>Parkland High School<br>Kaitlin Heintzelman  |
| 10-ENV-007 | Saisuchit Gollapudi | Design of a Low-Cost Air Pollution/Quality Monitor for Interpreting Air Quality<br>Parkland High School<br>Kaitlin Heintzelman   |
| 10-ENV-008 | Zachary Ciappa      | Examining the Use of Crassostrea virginica Shells as a Biosorbent to Decrease Phosphate Concentrations in Solutions<br>Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-ENV-009 | Akshaj Bais         | Back to Life: How do Historic, Buried Soils Recover Following Restoration?<br>Newark Charter School  |
| 10-ENV-010 | Carly Le            | Bioremediation<br>Temple Stem-UP<br>Samy Belbgra   |
| 10-ENV-011 | Victoria Puente     | The Bioremediation of Petroleum Hydrocarbons in Contaminated Water<br>Souderton Area High School<br>Karen Wolfe  |
| 10-ENV-012 | Riya Mehta          | Optimal Wind Turbine Placement Based on Dynamic Wind Patterns<br>Souderton Area High School<br>Karen Wolfe   |
| 10-ENV-013 | Aarthi Gunasekaran  | A Natural Cost-Effective Solution to Pharmaceutical Contamination in Drinking Water<br>High Technology High School<br>Craig Queenan  |
| 10-ENV-014 | Rachel Ott          | Polluted Air, is Not a Safe Affair<br>Owen J. Roberts Middle School<br>Sheila Hinkley  |

## **MATHEMATICS**

|            |               |   |
|------------|---------------|---|
| 10-MTH-001 | Neeka Vojdani | Inductive Modeling of Format-Based Human Comprehension and Cognition<br>Moorestown High School<br>Sean Watson |
| 10-MTH-002 | Noah Utain    | Predicting the NBA Season Award Winners<br>Souderton Area High School<br>Karen Wolfe                          |
| 10-MTH-003 | Audrey Yu     | Model-Based Projection of Measles Outbreaks in the United States<br>Germantown Academy<br>Sarah Kesten        |
| 10-MTH-004 | Jingxuan Wang | An Exploration of the Nine-Point Circle<br>Great Valley High School<br>Barry Ziober                           |

| PRESENTER              | TITLE             | SCHOOL & SPONSOR  |   |
|------------------------|-------------------|---|---|
| <b>MEDICINE/HEALTH</b> |                   |   |   |
| 10-MED-001             | Elizabeth Daly    | What SPF is Most Effective at Blocking UV Rays?   | Woodstown High School<br>Chris Rickard                              |
| 10-MED-002             | Alan Dolores      | Portable Air Quality Sensor   | Bridgeton Highschool<br>Claudia Angle                               |
| 10-MED-003             | Zy'Meira Hill     | Is the Grass Always Green on the Other Side?  | Bridgeton Highschool<br>Claudia Angle                               |
| 10-MED-004             | Sanat Nayak       | Evaluating the Environmental Resilience of Hookworms in Varying Artificial Settings: An Investigation into Hookworm Specificity for Third World Countries | Central Bucks High School West<br>Diane Liddington                  |
| 10-MED-005             | Maria Tufaro      | Scents & Sensibility: Investigating Pheromones, the Olfactory System, and the Vomeronasal Organ   | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 10-MED-006             | Angelo Boujaoude  | Novel Non-Invasive Low-Cost Device for Treatment of Obstructive Sleep Apnea in Adults   | Moorestown High School<br>Sean Watson                               |
| 10-MED-007             | Jason Youssef     | Potential Application of SLA (Stereolithography) 3D Printing of Coronary Stents   | Moorestown Friends School   |
| 10-MED-008             | Tushar Mehta      | NeuroAID: An Explainable Artificial Intelligence (XAI) based Brain Tumor Detection System using MRI Analysis  | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-MED-009             | Krish Malik       | Discovering Novel Biomarkers in Cardiac Stent Thrombosis and Restenosis through Precision Intravascular Imaging   | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-MED-010             | Vincent Li        | Effect of Ibuprofen on the Regenerative Growth of Planarian Pluripotent Stem Cells  | High Technology High School<br>Dina Ellsworth                       |
| 10-MED-011             | Micaela Marrinhas | Analyzing the Effects of FD&C Red 40 Powder on the Growth of Pleurotus pulmonarius  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-MED-012             | Aarush Sudamalla  | Use of CRISPR Cas9 Gene Editing Techniques Relative to Sickle Cell Beta Thalassemia on Cystic Fibrosis  | Charter School of Wilmington<br>Jennifer Toner                      |
| 10-MED-013             | Grace John        | Cracking the Code: Connecting Genetic Variation and ALS   | Central High School<br>Robert Herbstritt                            |
| 10-MED-014             | Roland Montgomery | Lion's Mane Extract   | Temple Stem-UP<br>Samy Belbgra                                      |
| 10-MED-015             | Rasika Sivakumar  | Hydrogel Stiffness Modulates Interleukin-1 Beta Effect on Annulus Fibrosus Cells  | Methacton High School<br>Robert Helm                                |
| 10-MED-016             | Rithik Kamtam     | Investigating the Impact of Insulin Resistance on Physical Performance in Drosophila Melanogaster   | Downingtown STEM Academy<br>Anton Ocepek                            |
| 10-MED-017             | Rowan Chetty      | Assessment of Factors that Affect the Performance of 3D-printed Polymer Matrix Tablets  | Conestoga High School<br>Kelly Showers                              |
| 10-MED-018             | Anne Zhu          | The Effects of Curcumin and Pycnogenol on Novel Targets in Parkinson's Disease  | Unionville High School<br>Meghan Kanski                             |

| PRESENTER           | TITLE   | SCHOOL & SPONSOR  |
|---------------------|---|---|
| <b>MICROBIOLOGY</b> |   |   |
| 10-MIC-001          | Isabella Morgan<br>Analysis of Atmospheric Bacteria Concentrations and Related Parameters in the Metedeconk River, NJ   | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 10-MIC-002          | Kailyn Kennedy<br>Bacteria vs. Garlic   | Woodstown High School<br>Chris Rickard                              |
| 10-MIC-003          | Rory Gardner<br>How Effective is Contact Solution at Removing Bacteria?   | Central Bucks High School East<br>Judy Elinow                       |
| 10-MIC-004          | Henry Cantor<br>Effect of Different Levels of G-force on the Cell Density Growth of Chlamydomonas moewusii  | High Technology High School<br>Craig Queenan                        |
| 10-MIC-005          | Avnee Malik<br>Are Dental Products Beneficial for the Human Oral Microbiome?  | Voorhees Middle School<br>YARD Sciences                             |
| 10-MIC-006          | Ethan Yoon<br>Step Into Cleanliness   | Cherokee High School<br>Rachel Senft                                |
| 10-MIC-007          | Sameel Hussain<br>Effect of Melting Antarctica Ice Caps on Infectious Diseases  | Cherry Hill High School East<br>Mark Brandreth                      |
| 10-MIC-008          | Subiksha Srinivasan Vidya<br>The Effects of Overexpressing Different Carbonic Anhydrase Isozymes on the Specific Activity of Carbonic Anhydrase in Bacillus Subtilis PY79 | Charter School of Wilmington<br>Jennifer Toner                      |
| 10-MIC-009          | Sophia DiGenova<br>Inhibitory Potential of Limonene on Bacterial Growth   | Charter School of Wilmington<br>Jennifer Toner                      |
| <b>PHYSICS</b>      |   |   |
| 10-PHY-001          | Emma Perry<br>The Effect of Soundproofing Materials on Sound Transmission   | Woodstown High School<br>Chris Rickard                              |
| 10-PHY-002          | William Long<br>I Got a Lightbulb!  | Cumberland County Technical Education Center<br>Tyler Davenport     |
| 10-PHY-003          | Lizbeth Rosas Merino<br>Our Attraction Will Not Be Stopped  | Bridgeton Highschool<br>Claudia Angle                               |
| 10-PHY-004          | Ronald Wells<br>Ball Bouncing Dynamics  | Bridgeton Highschool<br>Claudia Angle                               |
| 10-PHY-005          | Nikhil Skandan<br>Using "Tunabots" to Understand the Hydrodynamics and Performance of Fish: A Novel Approach to Bio-Inspired Underwater Vehicles                          | Moravian Academy<br>Wendy Sheetz                                    |
| 10-PHY-006          | Katherine Gilchrist<br>Hysteresis in the Formation of Waves in Spinning Fabrics   | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-PHY-007          | Clarke Ray<br>Water Vaporization for In-Space Electric Propulsion Applications Using Induction Heating and Ultrasonic Atomization   | Parkland High School<br>Kaitlin Heintzelman                         |
| 10-PHY-008          | Audrey Wang<br>The Effect of Varying Tennis Ball Pressure on the Coefficient of Restitution and Force on the Wrist During Collision with Tennis Racquet                   | High Technology High School<br>Craig Queenan                        |
| 10-PHY-009          | Remy Mander<br>The Effect of Dribbling Official-Model Basketballs on Air-Pressure Retention   | High Technology High School<br>Craig Queenan                        |
| 10-PHY-010          | Miles Zhang<br>How Temperature Affects The Piezoelectric Effect   | Charter School of Wilmington<br>Jennifer Toner                      |
| 10-PHY-011          | Adelina Cutrona<br>Reflectivity on the Road   | Souderton Area High School<br>Karen Wolfe                           |
| 10-PHY-012          | Carter Rembert<br>Orbital Guardians: Defending Earth from Asteroids   | Methacton High School<br>Robert Helm                                |

| PRESENTER      | TITLE  | SCHOOL & SPONSOR   |
|----------------|--|--|
| 10-PHY-013     | Kevin Lim<br>How Temperature Affects Intonation of a Violin  | Upper Dublin High School<br>Doug Sample                                |
| 10-PHY-014     | Sruthi Desikan<br>Piezoelectricity:<br>A Sustainable and Promising Source of Power   | Downingtown STEM Academy<br>Anton Ocepok                               |
| 10-PHY-015     | Jason Litwinko<br>Overnight Power Physics  | Bishop Shanahan High School<br>Robert Moran                            |
| <b>ZOOLOGY</b> |  |  |
| 10-ZOO-001     | Violet Fischer<br>An Analysis of Ferulic Acid Concentrations<br>on the Foraging Ability of <i>Nassarius obsoletus</i>                            | Marine Academy of Technology<br>and Environmental Science<br>John Wnek |
| 10-ZOO-002     | Adeline Bell<br>How Does the Quality of Chick Feed Affect the<br>Growth Rates of Chicks?   | Woodstown High School<br>Chris Rickard                                 |
| 10-ZOO-003     | Alan Urdabayev<br>The Effects of Mutations on Tick Salivary<br>Cement Glycine-Rich Proteins'   | Voorhees Middle School<br>YARD Sciences                                |
| 10-ZOO-004     | Luke Hauck<br><i>Galleria mellonella</i> : A Novel Method of<br>Degrading Polyethylene   | Parkland High School<br>Kaitlin Heintzelman                            |
| 10-ZOO-005     | Keegan Dunn<br>Examining the Effect of Visible Light in Terrestrial<br>Environments on <i>Malaclemys terrapin</i>                                | Marine Academy of Technology<br>and Environmental Science<br>John Wnek |
| 10-ZOO-006     | Niharika<br>Inampudi<br>The Effect of Carbon Electrodes on<br><i>Daphnia</i> and <i>Planaria</i>   | Souderton Area High School<br>Karen Wolfe                              |
| 10-ZOO-007     | Gabriel<br>Longenecker<br>Cyanobacteria and the Neurological<br>Activity of <i>Danio rerio</i>   | Souderton Area High School<br>Karen Wolfe                              |
| 10-ZOO-008     | Aman<br>Yelampalli<br>Investigating the Potential of Halogenated<br>Compounds on Methanogens and Reducing<br>Methane Emissions from Dairy Cattle | Avon Grove Charter School<br>Kate Richardson                           |



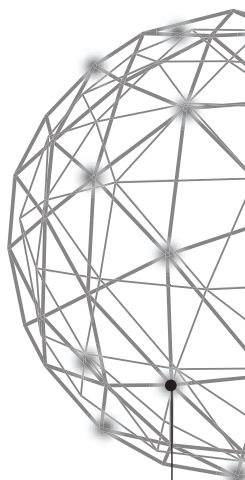
2018 ISEF participants



ISEF



| PRESENTER                         | TITLE   | SCHOOL & SPONSOR                                     |
|-----------------------------------|---|--|
| <b>BEHAVIORAL/SOCIAL SCIENCES</b> |   |  |
| 09-BEH-001                        | Taylor Chisarik Does Sex Assigned at Birth Affect Reaction Time?  | Woodstown High School<br>Amelia Adams                |
| 09-BEH-002                        | Aarav Awasthi Studying the Use of Brainwaves in Lie Detection   | Holicong Middle School<br>Stephen Geneva             |
| 09-BEH-003                        | Lila McCormick Can Candy Improve Someone's Reaction Time?   | Academy of Notre Dame de Namur<br>Jessica Reid       |
| 09-BEH-004                        | Caileigh Miller Reading to Retain!  | Upper Darby High School<br>Roseann Burns             |
| 09-BEH-005                        | Michael Drea The Cognitive Thinking of Armadillidiidae Vulgare  | Cherry Hill High School West<br>Brian Grillo         |
| 09-BEH-006                        | Chizaram Chigozie-Okwum The Impact of Online Gaming Technologies on K-12 Education  | Arts Academy Charter School                          |
| 09-BEH-007                        | Milana Romero Does the Volume of Music Affect Concentration?  | Philadelphia Academy Charter H.S.<br>Christine Dunne |
| 09-BEH-008                        | Maya Herrlinger Teen's Perception of Traits in Male vs. Female Characters   | Souderton Area High School<br>Karen Wolfe            |
| 09-BEH-009                        | Matthew Lo BeeMind AI: Development of an Artificial Intelligence Based System to Assess Honeybee Health, Behavior, and Nutrient Effects | The Haverford School<br>Daniel Goduti                |
| 09-BEH-010                        | Timi Afolabi-Brown Sleep and Screens Sleep Study  | Upper Dublin High School<br>Dawn Edelman             |
| <b>BIOCHEMISTRY</b>               |   |  |
| 09-BCM-001                        | Diana Nesterenko How Much Fat Is in Your Food?  | Woodstown High School<br>Amelia Adams                |
| 09-BCM-002                        | Joanna Nadackal Testing the Effect of Baking Soda on Electricity from Waste   | Tamanend Middle School<br>Erika Gamble               |
| 09-BCM-003                        | Yash Bhavsar Investigating the Effects of Mutations of Crucial Amino Acids on the Protein Expression and Folding of CDK2 Cancer Gene    | Voorhees Middle School<br>YARD Sciences              |
| 09-BCM-004                        | Sofia Hameed Which Over-the-counter Headache Medication (Excedrin, Aleve, Tylenol) Dissolves the Fastest in a Stomach Acid Simulation?  | Parkland High School<br>Kaitlin Heintzelman          |
| 09-BCM-005                        | Yashvi Patel Lacking Lactase: The Science Behind Lactose Intolerance  | Pennbrook Middle School<br>Colleen Aiken             |
| 09-BCM-006                        | Chelsea Lian Antacids in Action!  | Methacton High School<br>Robert Helm                 |
| 09-BCM-007                        | Andrew Kang Which Brand of Antacid is Most Effective?   | Methacton High School<br>Robert Helm                 |
| 09-BCM-008                        | Prisha Hallur Use of Nanoparticles to Prevent Microbial Growth  | Unionville High School<br>Meghan Kanski              |
| 09-BCM-009                        | Jason Ramirez Denaturing Proteins   | Coatesville Area Intermediate H.S.<br>Jennifer Kuhl  |
| 09-BCM-010                        | Vishruth Vignesh Analyzing Sucrose Levels in Children's Breakfast Cereals   | Conestoga High School<br>Kelly Showers               |



2024 9TH GRADE ENTRIES

| PRESENTER     | TITLE                   | SCHOOL & SPONSOR   |   |
|---------------|-------------------------|--|---|
| <b>BOTANY</b> |                         |  |   |
| 09-BOT-001    | Benjamin Tindall        | What are the Effects of Different Fertilization Techniques on Aquatic Plant Growth?                | SCVTS<br>Kristen Redkoles Polk                              |
| 09-BOT-002    | Jonathan Win            | Analyzing the Effects of Microplastic Pollution on Garden Cress ( <i>Lepidium sativum</i> ) Growth | Parkland High School<br>Kaitlin Heintzelman                 |
| 09-BOT-003    | Esteban Rodriguez Silva | Compost and its Effect on Plant Development  | Easton Area High School<br>Kyle Geiger                      |
| 09-BOT-004    | Lucille Darrah          | How do Hormones Effect Plant Growth?   | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-BOT-005    | Dominic Digregorio      | Soil Temperature Affected on Root Growth   | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-BOT-006    | Kristina Shapovalova    | Not All Soils were Created Equal: Sprout Fight for Life in Harsh Environments                      | Pennfield Middle School<br>JoEllen Paterson                 |
| 09-BOT-007    | Morohkaut Thach         | Heavy Hydrogels: Retaining Moisture Using Different Amounts of Agar and HEC                        | Cheltenham High School<br>Russell Wolff                     |
| 09-BOT-008    | Jeremy Evans            | Effect of Calcium Nitrate on Hydroponic Seedling Growth  | Souderton Area High School<br>Karen Wolfe                   |
| 09-BOT-009    | Paul Paguio             | Plant Growth Chia Seeds and Beyond   | Collegium Charter School<br>Kassaundra High                 |

## CHEMISTRY

|            |                     |  |  |
|------------|---------------------|--|--|
| 09-CHM-001 | Ally Sheppard       | Suds in Science  | Woodstown High School<br>Amelia Adams          |
| 09-CHM-002 | Carly Armstrong     | If Water Makes it Worse and You Don't Have the Protection to put out a Grease Fire Then How Else Could You Put it Out? | SCVTS<br>Kristen Redkoles Polk                 |
| 09-CHM-003 | Justin Peng         | Finding the Ideal Buffer Ratio to Reduce Ocean Acidification   | Council Rock High School North<br>Stacey Gould |
| 09-CHM-004 | Sarah Xue           | Tick Tock the Iodine Clock: Reaction Rate Order  | Council Rock High School South<br>Megan Mohl   |
| 09-CHM-005 | Emma Lange          | How Much Does a Dehydrator Change the Moisture in Candy?   | Academy of Notre Dame de Namur<br>Jessica Reid |
| 09-CHM-006 | Ansh Jaggi          | Bio-Foam: Sustainable Polyurethane Foams from Bio-polyols  | Eastern Regional High School                   |
| 09-CHM-007 | Jayden Yao          | How Does Temperature Affect Performance of Lithium-ion Batteries?  | Parkland High School<br>Kaitlin Heintzelman    |
| 09-CHM-008 | Sophia Nauman       | What Effect Does pH Have on the Accuracy of Lead Detection?  | Parkland High School<br>Kaitlin Heintzelman    |
| 09-CHM-009 | Anuoluwapo Ogunsola | How do Different Substances Affect the Melting Rate of Ice?  | Parkland High School<br>Kaitlin Heintzelman    |
| 09-CHM-010 | Sydney Vance        | The Light of Atoms   | Vance Homeschool<br>Rachel Booker Vance        |
| 09-CHM-011 | Danica Bae          | Drug Shell Solubility  | Pennfield Middle School<br>JoEllen Paterson    |
| 09-CHM-012 | Jeremy Wang         | The Effectiveness and Duration of Different Sunscreens   | Methacton High School<br>Robert Helm           |
| 09-CHM-013 | Aimal Ahmad         | Sugar Showdown   | Souderton Area High School<br>Karen Wolfe      |

| <b>PRESENTER</b> | <b>TITLE</b>                | <b>SCHOOL &amp; SPONSOR</b>   |  |
|------------------|-----------------------------|---|--|
| <b>COMPUTER</b>  |                             |   |  |
| 09-CMP-001       | Kyle Meyers                 | Building a Neural Network to Detect Recyclability   | Council Rock High School North<br>Terese Grateful  |
| 09-CMP-002       | Salil Ponamgi               | Creating Gravitational Lensing Models<br>Using Raytracing   | Holicong Middle School<br>Stephen Geneva           |
| 09-CMP-003       | Dharunish<br>Yugeswardeenoo | Introducing a Novel Prompting Strategy Based on<br>Question Analysis for Improved Reasoning in<br>Large Language Models         | Central Bucks High School South<br>Michelle Rhodes |
| 09-CMP-004       | Dilora<br>Kosimova          | Cyber Nexus: Understanding the Relationship<br>Between Global Financial Cyber Incidents and<br>Fintech Cybersecurity Investment | Cherry Hill East<br>Mark Brandreth                 |
| 09-CMP-005       | Reva Paul                   | Active Fraudulent Medicare Practitioner<br>Screening Using Statistical Analysis and<br>Machine Learning                         | Moravian Academy<br>Wendy Sheetz                   |
| 09-CMP-006       | Anthony Wang                | Develop an App to Efficiently Create Pedimat<br>Programs with c#.net for Peddinghaus Machines                                   | Parkland High School<br>Kaitlin Heintzelman        |
| 09-CMP-007       | Jeet Patel                  | Using Machine Learning to Read<br>Dyslexic Handwriting  | Temple Stem-UP<br>Samy Belbgra                     |
| 09-CMP-008       | Rohit Mahajan               | Using Machine Learning for Predicting<br>Cardiovascular Disease   | Methacton High School<br>Robert Helm               |
| 09-CMP-009       | Monita Rijal                | Different Tumors vs. Artificial Intelligence  | Pennfield Middle School<br>JoEllen Paterson        |
| 09-CMP-010       | Felix Du                    | Using Artificial Intelligence to Detect Safety<br>and Security Issues at Home   | Methacton High School<br>Robert Helm               |
| 09-CMP-011       | Ojas Wani                   | Implementing Machine Learning Models to<br>Optimize ASD Diagnosis   | Downingtown STEM Academy<br>Anton Ocepek           |
| 09-CMP-012       | Reid Gassler                | A System for Enhancing Video to Give the<br>Viewer Accurate Representations of the<br>Rotation of the Camera                    | Avon Grove Charter School<br>Kate Richardson       |

## **EARTH & SPACE SCIENCES**

|            |                    |  |  |
|------------|--------------------|--|--|
| 09-E&S-001 | Mary Zarinko       | How Does the Phase of the Moon Affect<br>the Number of Visible Stars in the Sky? | Woodstown High School<br>Amelia Adams                      |
| 09-E&S-002 | Matthew<br>Thomas  | Water from Dust - How Could You Generate<br>Fresh Water on a Dusty Planet?       | Holicong Middle School<br>Stephen Geneva                   |
| 09-E&S-003 | Luke Huang         | Which Type of Grass Prevents Soil Erosion<br>Most Effectively?                   | Souderton Area High School<br>Karen Wolfe                  |
| 09-E&S-004 | Lily Axler         | How the Distance From an Urban Source<br>Affects PM 2.5 Levels                   | Upper Dublin High School<br>Chris Smith                    |
| 09-E&S-005 | Michael<br>Coleman | Oxidation in Atmosphere:<br>"In Rust We Trust"                                   | Coatesville Area Intermediate High School<br>Jennifer Kuhl |

| PRESENTER            | TITLE   | SCHOOL & SPONSOR  |
|----------------------|---|---|
| <b>ENGINEERING</b>   |   |   |
| 09-ENG-001           | Noah Chiu<br>How Does the Shape of a Vehicle Affect the Number of Dead Spots in its Aero Package? | Woodstown High School<br>Amelia Adams                       |
| 09-ENG-002           | SreeNithya Allampally<br>Navigational Aid for the Visually Impaired                               | Council Rock High School North<br>Terese Grateful           |
| 09-ENG-003           | Avleen Khinda<br>Solar Panel Energy Production  | Parkland High School<br>Kaitlin Heintzelman                 |
| 09-ENG-004           | Jude Snyder<br>World's Strongest Bridge, Truss vs. Arch   | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-ENG-005           | Ryan Weber<br>H Beam Breakdown  | Methacton High School<br>Robert Helm                        |
| 09-ENG-006           | Bhavi Patel<br>Does the Height of a Culvert Affect its Efficiency?                                | Methacton High School<br>Robert Helm                        |
| <b>ENVIRONMENTAL</b> |   |   |
| 09-ENV-001           | Lily Norman<br>Do Large or Small Scale Desalination Operations Work Best?                         | Woodstown High School<br>Amelia Adams                       |
| 09-ENV-002           | Analiese Hines<br>How Does Different pH Levels Affect Algae Growth?                               | Woodstown High School<br>Amelia Adams                       |
| 09-ENV-003           | Sydney Dauphin<br>What is in Our Water?   | Sun Valley High School<br>Adria Bondanza                    |
| 09-ENV-004           | Shelby McGowan<br>The Impact of Wood Ash on Seed Germination                                      | Academy of Notre Dame de Namur<br>Jessica Reid              |
| 09-ENV-005           | Noelle Pinto<br>The Effect of Ventilation Systems on Indoor Air Pollution in Schools              | Academy of Notre Dame de Namur<br>Jessica Reid              |
| 09-ENV-006           | Ishan Ashok Bharadwaj<br>Can Hydrogels Help Conserve Water in Farming?                            | Voorhees Middle School<br>YARD Sciences                     |
| 09-ENV-007           | Thomas Solitro<br>Examining the Effects of Waterfall Dynamics on Dissolved Oxygen Levels          | Moorestown High School<br>Sean Watson                       |
| 09-ENV-008           | Vivian Xu<br>The Effect of Herbicides on Phytoplankton  | Parkland High School<br>Kaitlin Heintzelman                 |
| 09-ENV-009           | Elias Marrero<br>Temperature's Effect on Seawater   | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-ENV-010           | Oleksandra Vasylyshyn<br>Natural Water Filters  | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-ENV-011           | Gilbert Yang<br>The Effectiveness of Various Water Treatment Methods                              | Methacton High School<br>Robert Helm                        |
| 09-ENV-012           | Liam Connolly<br>The Effect of Greywater on the Growth Reduction of Plants                        | Souderton Area High School<br>Karen Wolfe                   |
| 09-ENV-013           | Niyathi Jonnalagadda<br>Effect of Climate Change on Lepidoptera                                   | Germantown Academy<br>Sarah Kesten                          |

| <b>PRESENTER</b>       | <b>TITLE</b>           | <b>SCHOOL &amp; SPONSOR</b>  |
|------------------------|------------------------|--|
| <b>MATHEMATICS</b>     |                        |  |
| 09-MTH-001             | Krish Dixit            | Optimizing the Plastic Water Bottle<br>Holicong Middle School<br>Stephen Geneva  |
| 09-MTH-002             | Morgan Marshall        | Investigating Pick's Theorem and the Shoelace Algorithm<br>Council Rock High School North<br>Terese Grateful   |
| 09-MTH-003             | Aanika Oka             | Did you get the Wordle?<br>Lenape Middle School<br>Jennifer Conver   |
| 09-MTH-004             | Mara Ankenman          | Fan Fiction as a Tool for Media Analysis<br>Main Line Classical Academy<br>Danielle Nagelberg  |
| 09-MTH-005             | Caleb Sigelman         | A Statistically Derived Method for Deriving Correspondences in Between College Majors and Careers<br>Main Line Classical Academy<br>Danielle Nagelberg                               |
| 09-MTH-006             | Niranjana Sendil Kumar | Analysis and Diagnostic Interpretation of Therapeutic Factor VIII Plasmid in Hemophilia Using Logistic and Exponential Regressions<br>Charter School of Wilmington<br>Jennifer Toner |
| 09-MTH-007             | Sophie Kalish-Schur    | Cyliboid in the Real World<br>The Baldwin School<br>Jeffrey Goldader   |
| <b>MEDICINE/HEALTH</b> |                        |  |
| 09-MED-001             | David Farrell          | How Cadence Affects a Runner's Heart Rate<br>Woodstown High School<br>Amelia Adams   |
| 09-MED-002             | Gwen Alemao            | Assessing the Role of Depression in Fibromyalgia Patients<br>Central Bucks High School East<br>Judy Elinow   |
| 09-MED-003             | Shaivi Patel           | Delayed Release Pill<br>Tamanend Middle School<br>Erika Gamble   |
| 09-MED-004             | Nazifa Arna            | Does Peripheral Vision Depend on the Color of the Observed Object?<br>Upper Darby High School<br>Roseann Burns   |
| 09-MED-005             | Nila Raja              | Mechanical Model: Knee Stress<br>Parkland High School<br>Kaitlin Heintzelman   |
| 09-MED-006             | Johanna Mukadiyil      | Lung Capacity: Athletic vs. Non-Athletic<br>Philadelphia Academy Charter High School<br>Christine Dunne  |
| 09-MED-007             | Haasini Matta          | Zap That Zit!<br>Souderton Area High School<br>Karen Wolfe   |
| 09-MED-008             | Devesh Waghmare        | Feline Hyperthyroidism<br>Pennfield Middle School<br>JoEllen Paterson  |
| 09-MED-009             | Joshua Hong            | The Effects of Sugar on the Resistance of Teeth<br>Upper Dublin High School<br>Chris Smith   |
| 09-MED-010             | Shipra Kapoor          | Spiced up Bacteria: Antimicrobial Activity of Spices<br>Unionville High School<br>Meghan Kanski  |
| <b>MICROBIOLOGY</b>    |                        |  |
| 09-MIC-001             | Santino Amalfitano     | Which Disinfectant Works Best?<br>Woodstown High School<br>Amelia Adams  |
| 09-MIC-002             | Mirna Velasquez        | What Type of Disinfectant Spray is the Most Efficient at Killing Bacteria?<br>SCVTS<br>Kristen Redkoles Polk   |
| 09-MIC-003             | Elizaveta Kutyeva      | Scrubbing Science: Lysol and Mr. Clean vs. Escherichia coli<br>Council Rock High School South<br>Megan Mohl  |
| 09-MIC-004             | Kayden Tang            | Predicting Anti-Viral Drug Efficacy by In-Silico Simulation<br>Holicong Middle School<br>Stephen Geneva  |
| 09-MIC-005             | Caroline Daniel        | Mold Growth Using Various Liquids<br>Academy of Notre Dame de Namur<br>Jessica Reid  |

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                                 |
|------------------|---|---|
| 09-MIC-006       | Solymar Harney pH vs. Bacteria  | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-MIC-007       | Haritha Rajan Natural vs. Synthetic Antibiotics                                 | Pennfield Middle School<br>JoEllen Paterson                 |
| 09-MIC-008       | Elizabeth Schindele The Effect of Sponge Cleaning Processes on Bacterial Growth | Souderton Area High School<br>Karen Wolfe                   |
| 09-MIC-009       | Nicholas Loza The Hidden Danger in Cooked Rice                                  | Upper Dublin High School<br>Joanne Lilliendahl              |
| 09-MIC-010       | Claire Smith Debunking the Myth of the 5 Second Rule                            | Villa Maria Academy<br>James Kolter                         |

## **PHYSICS**

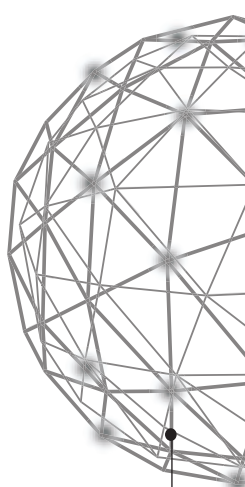
|            |  |   |
|------------|--|---|
| 09-PHY-001 | Brody Williams How Temperature Affects Magnetic Levitation in Rail Systems   | Woodstown High School<br>Amelia Adams                               |
| 09-PHY-002 | Reese Venable Electromagnetic Train Physics  | Woodstown High School<br>Amelia Adams                               |
| 09-PHY-003 | Varisha Nangalia How Does Color Affect Heating Caused by Light Absorption?   | Council Rock High School North<br>Terese Grateful                   |
| 09-PHY-004 | Neya Sathiya How Does Sugar Concentration Affect Polarized Light?  | Council Rock High School North<br>Terese Grateful                   |
| 09-PHY-005 | Carolyn Sohn Optimization for Aerodynamic Efficiency   | Council Rock High School North<br>Stacey Gould                      |
| 09-PHY-006 | Grace Nasr How Does Temperature Affect the Intensity of Luminescence?  | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| 09-PHY-007 | Guhan Sureshkumar Hemodynamic Intricacy: Interpreting the Impact of Blood Vessel Diameter and Viscosity on Flow Characteristics through a Modeling Framework | Parkland High School<br>Kaitlin Heintzelman                         |
| 09-PHY-008 | Acim Savich Determining the Best Replacement for Crumb Rubber in Artificial Grass Sports Fields  | Marine Academy of Technology and Environmental Science<br>John Wnek |
| 09-PHY-009 | Adhara Reddy Eyes vs. Electronics  | Methacton High School<br>Robert Helm                                |
| 09-PHY-010 | Tarini Saravanan Riding the Waves  | Methacton High School<br>Robert Helm                                |
| 09-PHY-011 | Brooklyn Diener Effect of Different Surfaces on Dance Floor Friction   | Germantown Academy<br>Sarah Kesten                                  |
| 09-PHY-012 | Akshay Sunil Electric Wind   | Downingtown STEM Academy<br>Anton Ocepek                            |
| 09-PHY-013 | Joshua Koch Measuring the Surface Tension of Water   | Coatesville Area Intermediate High School<br>Jennifer Kuhl          |

## **ZOOLOGY**

|            |   |   |
|------------|---|---|
| 09-ZOO-001 | Asher Wang Diagnosis of CMTs in Dogs Using a Machine Learning Model                     | Holicong Middle School<br>Stephen Geneva                    |
| 09-ZOO-002 | Anthony Wurz Insects vs. Temperature  | Philadelphia Academy Charter High School<br>Christine Dunne |
| 09-ZOO-003 | Lillian Lorenc Does Air Temperature Affect General Bird Migration in the USA?           | Souderton Area High School<br>Karen Wolfe                   |
| 09-ZOO-004 | Sara Geschwindt Impact of Protein in a Rabbit's Diet on the Nutritional Value of Manure | Souderton Area High School<br>Karen Wolfe                   |
| 09-ZOO-005 | Atharva Singh Long-term Memory Persistence in Planaria through Head Re-generation       | Great Valley High School<br>Barry Ziober                    |



| PRESENTER   | TITLE  | SCHOOL & SPONSOR  |
|---|--|---|
| <b>TEAM PROJECTS</b>  |  |   |
| HS-TM-002<br>Elizabeth Cardona<br>Amy Matos<br>Victoria Hagan | Fizz or Fade   | Cumberland County Technical Education Center<br>Tyler Davenport     |
| HS-TM-003<br>Deborah Gym<br>Sarah Gym                         | Development of PM2.5 Forecasting Model for Philadelphia Metropolitan Areas Using a Hybrid Model Approach                       | Central Bucks High School South<br>Michelle Rhodes                  |
| HS-TM-004<br>Christa Varghese<br>Noria Varghese               | Hydroponics System vs. Traditional Indoor Agriculture  | Council Rock High School South<br>Megan Mohl                        |
| HS-TM-005<br>Riley Albee<br>Patrick Murray                    | Plastifying Soil... Unraveling the Truth of Microplastics on Plant Growth  | Archbishop Wood High School<br>Sharon Hartranft                     |
| HS-TM-006<br>Sophia Covolesky<br>Madeline McCormick           | Can Teachers Detect AI in Text and Images?   | Archbishop Wood High School<br>Sharon Hartranft                     |
| HS-TM-007<br>Lamin Sillah<br>Muhib Almas                      | The Effect of Temperature on Magnetic Levitation   | Upper Darby High School<br>Roseann Burns                            |
| HS-TM-008<br>Lilly Sigelman<br>Helene Gormley                 | How Microplastics Affect Cells   | Main Line Classical Academy<br>Danielle Nagelberg                   |
| HS-TM-009<br>Kira Daile Santos<br>Jinuhangma Rai<br>Vy Lam    | Solar Berries  | Upper Darby High School<br>Roseann Burns                            |
| HS-TM-010<br>Kiera Norton<br>Michelle Malone                  | Does Music Influence Brain Efficiency?   | Academy of Notre Dame de Namur<br>Jessica Reid                      |
| HS-TM-011<br>Skylar McCone<br>Addison Lawler                  | Venus Flytraps Compared in Different Lighting  | Sun Valley High School<br>Adria Bondanza                            |
| HS-TM-012<br>Ridwan Muntasir<br>Abdalla Elokely               | Drug Discovery with Computer Aided Drug Design: Improving Current Research on Adrenocortical Carcinoma Using Virtual Screening | Upper Darby High School<br>Roseann Burns                            |
| HS-TM-013<br>Raica Tarr<br>Ronan Myers                        | Optimizing Investment Casting to Diversify Access to Medical Implants  | Main Line Classical Academy<br>Danielle Nagelberg                   |
| HS-TM-014<br>Samantha McCabe<br>Iniya Malaikani<br>Siya Patel | Misinformation and The Mind  | Moorestown High School<br>Sean Watson                               |
| HS-TM-015<br>Jefferson Grande<br>Gabriela Maldonado           | Deicer vs. Earth   | Lakewood High School<br>Joan Yoon                                   |
| HS-TM-016<br>Hailey Applegate<br>Nivetha Varathakumar         | The Effect of Sunscreen SPF on UV Radiation Absorption   | Freedom High School<br>Graceanne Ruggiero                           |
| HS-TM-017<br>Miriam Kelawy<br>Rahini Chauhan                  | Dealing with Diabetes: The Road to Developing an Artificial Pancreas   | Parkland High School<br>Kaitlin Heintzelman                         |
| HS-TM-018<br>Maheen Jan<br>Shireen Jan<br>Safiya Saif         | Hot Hair Health  | Parkland High School<br>Kaitlin Heintzelman                         |
| HS-TM-019<br>Andrew Cagliostro<br>Joseph Fossa<br>Ava McNabb  | Effects of Varying Salinities on the Growth of the Northern Diamondback Terrapin, <i>Malaclemys terrapin</i>                   | Marine Academy of Technology and Environmental Science<br>John Wnek |
| HS-TM-021<br>Jenny Zhang<br>Ariane Ouefio                     | Humans Value Their Sense of Sight the Greatest   | Upper Bound Math Science  |



**2024 TEAM PROJECTS  
9TH - 12TH GRADES**

| <b>PRESENTER</b>  | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                     |
|---|--|---|
| HS-TM-022<br>Cora Falgowski<br>Jillian Villafuerte                        | Effect of Nutrient Levels on Hydroponically Grown Basil  | Charter School of Wilmington<br>Jennifer Toner  |
| HS-TM-023<br>Soumil Ghosh<br>Tushar<br>Janarthanan<br>Ramesh Babu         | Which Object-detecting Sensor Can Detect an Object from the Farthest Distance Away While Producing a 2D Mapping of its Surroundings? | Charter School of Wilmington<br>Jennifer Toner  |
| HS-TM-024<br>Zachary Cao<br>Brandon Ngo                                   | Hydroponics Solution Systems for Urban Environments  | Temple Stem-UP<br>Samy Belbgra                  |
| HS-TM-025<br>Fiona Lin<br>Sophia Jiang<br>Daniel Zheng                    | What is the Impact of Smartphone Usage on the Quality of Sleep Among Adolescents?  | Central High School<br>Robert Herbstritt        |
| HS-TM-026<br>Symone Comrie<br>Tyler Baughman<br>Naomi Elmine              | Medical Drone  | Temple Stem-UP<br>Samy Belbgra                  |
| HS-TM-027<br>Advika Vuppala<br>Shravani Vedagiri                          | Investigating the Impact of Varying Nutritional Supplements on Stem Cell Regeneration in Piwi Mutated <i>D. melanogaster</i>         | High Technology High School<br>Dina Ellsworth   |
| HS-TM-028<br>Alanna<br>Walker-Kegler<br>A'yana Holloway<br>Dayonna Harper | What The Mold?   | Freire Charter High School<br>Paul Holt         |
| HS-TM-029<br>Patrick Gaghan<br>Farah Salehliorgan                         | Engineering an Efficient Hydropowered Turbine  | Springside Chestnut Hill Academy<br>Scott Stein |
| HS-TM-031<br>Ethan Sauder<br>Quinlan Williams                             | Radiation and the Cloud Chamber  | Kennett High School                             |
| HS-TM-032<br>Neha Chigurupati<br>Akshaya<br>Venkatesh                     | Structuring Unmanned Aerial Vehicle Transportation: Advancing Autonomous Navigation and Collision Avoidance                          | Downingtown STEM Academy<br>Anton Ocepek        |
| HS-TM-033<br>Naina Madhwani<br>Sonya Patel                                | Testing Biodegradable Hydrogels for Water Conservation   | Downingtown STEM Academy<br>Anton Ocepek        |



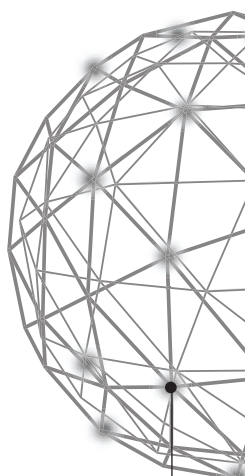
**PRESENTER TITLE SCHOOL & SPONSOR**

**BEHAVIORAL/SOCIAL SCIENCES**

|            |                      |  |   |
|------------|----------------------|--|---|
| MS-BEH-001 | Liam Lawyer          | Does Music Affect Memory?  | Upper Pittsgrove School<br>Danielle Taulane                                   |
| MS-BEH-002 | Emilee Kehr          | Which Age Group Can Pick Out the Lie Based on Body Language?                                   | Oldmans Twp. School<br>Jason Winistorfer                                      |
| MS-BEH-003 | Sophia Loukedis      | How do Different Noises Cause Distraction?   | Holicong Middle School<br>Chris McGullam                                      |
| MS-BEH-004 | Leela Kafin          | How Do Smelling Different Essential Oils Affect Memory Recall After Studying Items             | Holicong Middle School<br>Robert Meletti                                      |
| MS-BEH-005 | Madeline Bozzone     | Does being Right-Handed or Left-Handed Affect Right and Left Hand Dominance for Certain Tasks? | St. Andrew's School<br>Jovani Tablezo   |
| MS-BEH-006 | Madi Vincent         | Can Video Games Improve the Way Children Learn?  | Academy of Notre Dame de Namur<br>Jessica Reid                                |
| MS-BEH-007 | Khushi Khurana       | Bridging the Gender Gap & Empowering Girls in Tech   | William Allen Middle School<br>Christian Heine                                |
| MS-BEH-008 | Elena Ray            | How to Tell if Someone is Lying  | William Allen Middle School<br>Christian Heine                                |
| MS-BEH-009 | Chloe Balshi         | Can Listening to Music Improve Concentration?  | Moravian Academy Middle School<br>JoAnne Daniels                              |
| MS-BEH-010 | Shravani Shelke Does | Heart Rate Variability Affect Your Cognitive Abilities   | Springhouse Middle School<br>Daniel Christman                                 |
| MS-BEH-011 | Leah Tierno          | Scarcity Principle and the Amygdala  | Folsom Elementary School<br>Chris Roth  |
| MS-BEH-012 | Taza Yasik           | Does the Color Effect the Speed of Recognizing an illusion?                                    | Ursuline Academy<br>Eileen Koenig   |
| MS-BEH-013 | Olivia Ryerson       | The Relationship of Cognitive Ability and Chess  | Julia Reynolds Masterman Laboratory & Demonstration School<br>Brooke Lapinski |
| MS-BEH-014 | Jaelynn Rowe         | Does the Time You Write Your Name Affect Your Grade?   | Freire Charter Middle School  |
| MS-BEH-015 | Jonathan David       | Paper or Online - Which one is Fine?   | William M. Meredith School<br>Christopher Leshock                             |
| MS-BEH-016 | Sophia He            | Shaping Your Thoughts  | General George A. McCall School<br>Scott Knoflicek                            |
| MS-BEH-017 | Claire Kwon          | The Stroop Effect  | Arcola Intermediate School<br>Sharon Branca                                   |
| MS-BEH-018 | Leo Gest             | Hype Up! Is Hype Music the Answer to Playing Better?   | Cedarbrook Middle School<br>Beth Kenna  |
| MS-BEH-019 | Ryan Joseph          | Video Games and the Human Body   | Great Valley High School<br>Barry Ziober                                      |
| MS-BEH-020 | Kaavya Narayanan     | AI: The Ultimate Student Sidekick! Can it Transform Education for Better?                      | Charles F. Patton Middle School<br>Nancy Wetzel                               |

**BIOCHEMISTRY**

|            |                 |  |   |
|------------|-----------------|--|---|
| MS-BCM-001 | Owen Soheily    | How Does the Concentration of Hydrogen Peroxide Affect the Catalase Enzymatic Reaction and Does It Relate to Oxidative Stress? | Toms River Intermediate East<br>Gina Phillips |
| MS-BCM-002 | Bryn McLaughlin | Does it Take Different Kinds of Milk Longer to Turn to Plastic?  | Elsinboro Township School<br>Joseph Sarbello  |



**2024 6TH-7TH-8TH GRADE ENTRIES**

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                       |
|------------------|---|---|
| MS-BCM-003       | Tristyn Smith<br>How will Different Water Effect Newly Dyed Hair?                                       | Alloway Township School<br>Jamie Munyon           |
| MS-BCM-004       | Dillon Lind<br>Plastics Apeel   | Newtown Middle School<br>David Curry              |
| MS-BCM-005       | Chharvi Kuntamukkala<br>How do Different Types of Substances Affect Calcium Based Structures Over Time? | Holicong Middle School<br>Robert Meletti          |
| MS-BCM-006       | Darsh Gajera<br>Papaya's Hidden Weapons: Unveiling the Antibacterial Properties of Papain and Pepsin    | Voorhees Middle School<br>YARD Sciences           |
| MS-BCM-007       | Ayush Jalani<br>Improving Proton Conductivity to Optimize MFC Performance                               | Springhouse Middle School<br>Scott Bauer          |
| MS-BCM-008       | Vandita Gabbita<br>UV Rays vs. Yeast Colony Growth  | Manalapan Englishtown Middle School<br>Dawn Danza |
| MS-BCM-009       | Calee Burns<br>How to Make an Avocado Not Turn Brown After Cutting It                                   | Ursuline Academy<br>Eileen Koenig                 |
| MS-BCM-010       | Nicholas Gofman<br>Do Amino Acids Affect Plant Growth?  | Green Woods Charter School<br>Debi Durso          |
| MS-BCM-011       | Andrew Korpics<br>Preservative? Affirmative!  | William M. Meredith School<br>Christopher Leshock |
| MS-BCM-012       | Jasmine Bilotti<br>Investigating How Different Drinks Affect Tooth Enamel                               | Indian Valley Middle School<br>Amy Craig          |
| MS-BCM-013       | Luke Procyk<br>Are Grain Crops Better Than Root Crops for Producing Biofuel?                            | The Wyndcroft School<br>Michael Stowell           |
| MS-BCM-014       | Arnav Goyal<br>Does Temperature Affect the Rate of Enzymatic Reactions?                                 | Owen J. Roberts Middle School<br>Sheila Hinkley   |
| MS-BCM-015       | Vernica Iyer<br>Using Column Chromatography   | Charles F. Patton Middle School<br>Nancy Wetzel   |

## **BOTANY**

|            |   |   |
|------------|---|---|
| MS-BOT-001 | Evan Norman<br>Wilt-Free:<br>The Science of Keeping Cut Flowers Fresh                                       | Woodstown Middle School<br>Helena Olsen             |
| MS-BOT-002 | Ryan Dorsey<br>Grass Growth   | Elsinboro Township School<br>Joseph Sarbello        |
| MS-BOT-003 | Leo Benz<br>Rising Seawater and its Effects on Crops  | Sussex Academy<br>Lauren Hvorecny                   |
| MS-BOT-004 | Rishi Heruwala<br>How Different Types of Algae React to Different pH Levels                                 | Holicong Middle School<br>Chris McGullam            |
| MS-BOT-005 | Mariana Mokhova<br>How do Different Seeds Develop Under Microgravity Conditions?                            | Holicong Middle School<br>Robert Meletti            |
| MS-BOT-006 | Isatu Bangura<br>Temperature War  | St. Andrew's School<br>Jovani Tablezo               |
| MS-BOT-007 | Nieve Morrison<br>The Effects of Added Hormones on Plants   | Academy of Notre Dame de Namur<br>Jessica Reid      |
| MS-BOT-008 | Arabella Cristelo<br>Light Spectrum Seedlings   | Bishop McHugh Regional Catholic<br>Diane Bruesehoff |
| MS-BOT-009 | Alexandra Kanterezhi-Gatto<br>Which Subspecies of Dracaena trifasciata will Absorb the Most Carbon Dioxide? | Intermediate East<br>Kelly Natkie                   |
| MS-BOT-010 | Hannah Bazo<br>"Poop"-tastic Plants   | Eastampton Community School<br>Jeffrey Bowlby       |
| MS-BOT-011 | Noelle Carson<br>Do Hydroponically Grown or Soil Grown Plants Grow Taller?                                  | Springhouse Middle School<br>Scott Bauer            |
| MS-BOT-012 | Kushaan Shah<br>The Effect of Fertilizer Type on Plant Growth   | Springhouse Middle School<br>Lauren Myers           |

| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                        |
|------------------|--|--|
| MS-BOT-013       | Julia Panunto<br>What is the Best Liquid to Dye Your Flower?               | Ursuline Academy<br>Eileen Koenig                  |
| MS-BOT-014       | Ivan Li<br>You Want Fries With That?<br>The Science of Crispy Potatoes     | General George A. McCall School<br>Scott Knoflicek |
| MS-BOT-015       | Gery Chen-Yan<br>Use Floating Leaf Disks to Study Photosynthesis           | General George A. McCall School<br>Scott Knoflicek |
| MS-BOT-016       | James Walsh<br>What Soil has the Best pH Level for Humans and Plants?      | Ad Prima Charter School<br>Megan Simmons           |
| MS-BOT-017       | Sophia Kane<br>Planting with Different Liquids                             | Mariana Bracetti Academy<br>Jana Somma             |
| MS-BOT-018       | Dominic DiNardo<br>How to Make the Grass Greener on Your Side of the Fence | Indian Valley Middle School<br>Amy Craig           |
| MS-BOT-019       | Bryn Hamilton<br>How do Plants Impact Soil Erosion?                        | Arcola Intermediate School<br>Sharon Branca        |
| MS-BOT-020       | Saket Gundubogula<br>Space Farming   | Downingtown West High School<br>Wendy King         |
| MS-BOT-021       | Derrill Martin III<br>Aquaponics vs. Agriculture                           | Owen J. Roberts Middle School<br>Sheila Hinkley    |

## **CHEMISTRY**

|            |  |   |
|------------|--|---|
| MS-CHM-001 | Katie Burkholder<br>Is This Copper?  | Greenwood Mennonite School<br>Duane Miller        |
| MS-CHM-002 | Blair Eber<br>Apple to The Core  | Lower Alloways Creek School<br>Megan Strang       |
| MS-CHM-003 | Avelyn Moore<br>How Long Does Each Liquid Take To Dissolve The Color Off Skittles?                                 | Upper Pittsgrove School<br>Danielle Taulane       |
| MS-CHM-004 | Flavio Grimaldi<br>How Does the pH of a Liquid Affect How it Will Spherocyte?                                      | Holicong Middle School<br>Robert Meletti          |
| MS-CHM-005 | Emma Rampe<br>A Clear Choice - Water Filtration  | Newtown Middle School<br>David Curry              |
| MS-CHM-006 | Aaron Ortego<br>Feeding Yeast  | St. Mary Magdalen School<br>Amy Bauer             |
| MS-CHM-007 | Gabriella Votta<br>Which Form Dissolves Fastest?   | St. Mary Magdalen School<br>Amy Bauer             |
| MS-CHM-008 | Radika Dudda<br>Are Medicinal Plants Beneficial for Gut Microbiome? Prediction Models for Drug Development         | Voorhees Middle School<br>YARD Sciences           |
| MS-CHM-009 | Saharsha Konda<br>How Does the Type of Candle Wax Affect the Life of the Candle?                                   | Springhouse Middle School<br>Lauren Myers         |
| MS-CHM-010 | Veda Gandhi<br>Powerful Plastic: The Effect of Glycerin on a Bioplastic made with Sargassum Seaweed                | Springhouse Middle School<br>Scott Bauer          |
| MS-CHM-011 | David Cunningham<br>Hydrogen Extraction  | Pilgrim Academy<br>Christopher Storr              |
| MS-CHM-012 | Henry Buehner<br>The Rust Belt: Which Substances are the Best at Protecting Steel Wool from Rusting in Salt Water? | St. Mary Magdalen School<br>Amy Bauer             |
| MS-CHM-013 | Vivienne Bomba<br>How Much Sugar is in Different Kinds of Apples?  | Ursuline Academy<br>Eileen Koenig                 |
| MS-CHM-014 | Leylanie Rivera<br>The Baking Experiment   | Mariana Bracetti Academy<br>Jana Somma            |
| MS-CHM-015 | Milan Ashley<br>Candy Cane Chemistry   | Mariana Bracetti Academy<br>Jana Somma            |
| MS-CHM-016 | Bodhi Villa<br>Characteristics of the Fire Behavior of Wood  | William M. Meredith School<br>Christopher Leshock |

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                  |
|------------------|---|--|
| MS-CHM-017       | Asha Gandhi What's That Smell? Perfume?                                   | St. Peter's School<br>Jenny Soriano          |
| MS-CHM-018       | Michael Kuhlsen Do Different Color M&M's Share the Same Food Dyes?        | Intermediate East<br>Kelly Natkie            |
| MS-CHM-019       | Joseph Bieryla Is Bigger Better? Particle Size and Reaction Speed         | Cedarbrook Middle School<br>Beth Kenna       |
| MS-CHM-020       | Helena Ung Feel Rusty? Coatings and Exposure to Various Environments      | Cedarbrook Middle School<br>Beth Kenna       |
| MS-CHM-021       | Triona Tsai Studying the Effects of Different pH levels on Spherification | Valley Forge Middle School<br>Matthew Gibson |
| MS-CHM-022       | Viktor Wang Does pH Affect the Color of Water Based Food Coloring?        | Valley Forge Middle School<br>Matthew Gibson |

## **COMPUTER**

|            |   |   |
|------------|---|---|
| MS-CMP-001 | Serenity Shaub Weakened Wi-Fi   | Lower Alloways Creek School<br>Megan Strang           |
| MS-CMP-002 | Jillian Wolfer Do Students Score Better on Reading Comprehension Tests Digitally or on Paper?   | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-CMP-003 | Aravind Chandrashekar Can AI Detect Depression in Social Media Posts?   | Newtown Middle School<br>David Curry                  |
| MS-CMP-004 | Anisha Cheruvu SafeSkin: Automated Machine Learning iOS App For Skin Cancer Detection   | Titus Elementary School<br>Amy Scherr                 |
| MS-CMP-005 | Jason DiSands Does Playing Video Games Affect Hand-eye Coordination?  | St. Andrew's School<br>Jovani Tablezo                 |
| MS-CMP-006 | Aadhavan Rengapragash ShoreTech - A Novel Vision Based Approach to Prevent Plastic Pollution Using Object Detection   | Thomas E. Harrington Middle School<br>Crystal Smith   |
| MS-CMP-007 | Vedant Yadav Diabetes Prediction Using Machine Learning Models  | William Allen Middle School<br>Christian Heine        |
| MS-CMP-008 | Landon Sheatsley Can An Algorithm Beat the S&P 500?   | Moravian Academy Middle School<br>JoAnne Daniels      |
| MS-CMP-009 | Areesha Mariyam An Advanced Method for Visually Impaired People to Avoid Everyday Obstacles Such as Pedestrians and Automobiles using Convolutional Neural Network and Distance Detection | Springhouse Middle School<br>Susan Stern              |
| MS-CMP-010 | Akhil Velampalli Unauthorized Users May Not Enter   | Manalapan Englishtown Middle School<br>Dawn Danza     |
| MS-CMP-011 | Malcolm Kelly WingletsVSP   | William M. Meredith School<br>Christopher Leshock     |
| MS-CMP-012 | Maya Futer Can AI Diagnose Breast Cancer?   | General George A. McCall School<br>Scott Knoflicek    |
| MS-CMP-013 | Donovan Macfieldlane How Distraction Affects Pain   | General George A. McCall School<br>Scott Knoflicek    |
| MS-CMP-014 | Omuwa Izah Decoding the Ripples: Exploring the Impact of ChatGPT Integration  | Galloway Township Middle School<br>Stefanie Tripician |
| MS-CMP-015 | Sebastian Dubois Political Bias in the Google Search Engine   | Indian Valley Middle School<br>Amy Craig              |
| MS-CMP-016 | Alex Shockley The Power of AI Computer  | Indian Valley Middle School<br>Amy Craig              |
| MS-CMP-017 | Om Gagrani Eye (App for the Visually Impaired)  | Great Valley High School<br>Barry Ziober              |
| MS-CMP-018 | Tvisha Jani SEVA - Artificial Intelligence Camera Which Detects Firearms and Alerts Authorities to Eliminate School Shootings   | Tredyffrin Easttown Middle School<br>Anthony Dilella  |



| <b>PRESENTER</b>        | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                                      |
|-------------------------|---|--|
| <b>CONSUMER SCIENCE</b> |   |  |
| MS-CON-001              | Ian Galasso Par Tee Time  | Elsinboro Township School<br>Joseph Sarbello                     |
| MS-CON-002              | Blake Matlack Cooler Wars   | Lower Alloways Creek School<br>Megan Strang                      |
| MS-CON-003              | Vivian Silva Moisturizers Put To The Test!  | Wrightstown Elementary School<br>Jennifer French                 |
| MS-CON-004              | Alyssa Yao Exploring Lactose Intolerance: The Effect of Lactase on Glucose Levels in Dairy Products | St. Andrew's School<br>Tracy Boedewig                            |
| MS-CON-005              | Adotey Allotey Scrub or Flub? What Type of Sponge Cleans the Best?                                  | St. Andrew's School<br>Jovani Tablezo                            |
| MS-CON-006              | Laina Mamaluy Heat vs. Spray  | St. Andrew's School<br>Jovani Tablezo                            |
| MS-CON-007              | Ireland Brogan The Effect of Influencer Product Congruence on Youtube Sponsorships                  | Haddonfield Friends School<br>Rebecca Rementer                   |
| MS-CON-008              | Ethan Rabinowitz The Effects of Varying Baking Fats in Cookies                                      | Eugene A. Tighe Middle School<br>Chelsi Crompton                 |
| MS-CON-009              | Genevieve Heald Lunch In The Danger Zone  | William M. Meredith School<br>Christopher Leshock                |
| MS-CON-010              | Henry Weil The Rolling Stones   | William M. Meredith School<br>Christopher Leshock                |
| MS-CON-011              | Dena Brown The Ultimate Guide to Keep Your Skin Soft  | St. Peter's School<br>Jenny Soriano                              |
| MS-CON-012              | Zoe Brown What Makeup Remover Works Best?   | Green Woods Charter School<br>Debi Durso                         |
| MS-CON-013              | Taliyah Davis The Itch that Rashes  | French International School of Philadelphia<br>Kevin Fitzpatrick |
| MS-CON-014              | Tina Ramberg-Michael Rising Up! Texture, Density, & Gluten-Free Flour Sunstitutes                   | Cedarbrook Middle School<br>Beth Kenna                           |
| MS-CON-015              | Genevieve Buckley \$unscreen  | Sts. Simon & Jude<br>Jacqueline Dryfoos                          |
| MS-CON-016              | Shruthi Rajeswaran Moisturizer Ingredients  | Lionville Middle School<br>Mary Elvin                            |

## **EARTH & SPACE SCIENCES**

|            |   |   |
|------------|---|---|
| MS-E&S-001 | Avery Paulus Pumpkin Popper   | Alloway Township School<br>Jamie Munyon           |
| MS-E&S-002 | Arianna Morales Worms vs. Diets   | Elsinboro Township School<br>Joseph Sarbello      |
| MS-E&S-003 | Samuel Divinsky How Does Distance Affect the Temperature of Tidally Locked Exoplanets?      | Holicong Middle School<br>Chris McGullam          |
| MS-E&S-004 | Yonatan Gartenberg Martian Soils and Plants   | Main Line Classical Academy<br>Danielle Nagelberg |
| MS-E&S-005 | Alexandra Mafodda How Does the Greenhouse Effect Affect the Earth?                          | Academy of Notre Dame de Namur<br>Jessica Reid    |
| MS-E&S-006 | Aaditri Suresh Optimal Growth Conditions for Cyanobacteria in Simulated Martian Environment | Springhouse Middle School<br>Scott Bauer          |
| MS-E&S-007 | Guhan Sathish Rocks to the Rescue: Optimizing CO2 Storage                                   | Springhouse Middle School<br>Susan Stern          |
| MS-E&S-008 | Izzy Bogle How Does Humidity Affect Temperature Change?                                     | Ursuline Academy<br>Eileen Koenig                 |

| <b>PRESENTER</b> | <b>TITLE</b>  | <b>SCHOOL &amp; SPONSOR</b>                     |
|------------------|---|---|
| MS-E&S-009       | Uzayr Malik Does Temperature Affect Dissolved Oxygen In the Water?  | St. Peter's School<br>Jenny Soriano             |
| MS-E&S-010       | Abrielle Mortty How to Make Fast-Growing Crystals?  | Ad Prima Charter School<br>Megan Simmons        |
| MS-E&S-011       | Meredith Gahring Rooting Out Erosion  | Indian Valley Middle School<br>Amy Craig        |
| MS-E&S-012       | Anushka Abraham The Temperature of Soil effect on Seed Germination  | Indian Valley Middle School<br>Amy Craig        |
| MS-E&S-013       | Ellyson Ansay Turning the Red Planet Green: Exploring Plant Propagation and Crop Rotation in Simulated Martian Regolith | Charles F. Patton Middle School<br>Nancy Wetzel |
| MS-E&S-014       | Darbee Janis How Do the Phases of the Moon Affect the Amount of Visible Stars?  | Villa Maria Academy Lower School                |

## **ENGINEERING**

|            |  |  |
|------------|--|--|
| MS-ENG-001 | Daniel Daly What 3-D Geometric Shape Scatters the Least Light and the Most?          | Oldmans Twp. School<br>Jason Winistorfer                         |
| MS-ENG-002 | Emilee Howery Can a Circuit See if Produce is Ripe?                                  | Upper Pittsgrove School<br>Danielle Taulane                      |
| MS-ENG-003 | Eva Navitskaya Electric Plants   | Sussex Academy<br>Lauren Hvorecny                                |
| MS-ENG-004 | Ryan Curtis On The Wing  | Quakertown Christian School<br>Lisa Reichley                     |
| MS-ENG-005 | Sofia Ftouh Which Water Filter Filters Water Most Efficiently and Cost-friendly?     | Holicong Middle School<br>Chris McGullam                         |
| MS-ENG-006 | Nolan Youssef Personalized Kidney Model 3D Printing Optimization                     | Moorestown Friends School<br>Deborah Bruvik                      |
| MS-ENG-007 | Vibha Borkar How Does the Amount of Blades on a Wind Turbine Affect its Performance? | Springhouse Middle School<br>Susan Stern                         |
| MS-ENG-008 | Fayzaan Jali Can I Make an Electric Car That Will Recharge and Not Overheat?         | Moravian Academy Middle School<br>JoAnne Daniels                 |
| MS-ENG-009 | Agrim Jain The Effect of Bridge Design on Weight Bearing Capacity                    | Manalapan Englishtown Middle School<br>Dawn Danza                |
| MS-ENG-010 | Clare McGhee How do you Keep a Sandcastle Standing for a Long Time?                  | Ursuline Academy<br>Eileen Koenig                                |
| MS-ENG-011 | Brooke McAndrew Does Jet Glue Make Pointe Shoes Brand New?                           | Ursuline Academy<br>Eileen Koenig                                |
| MS-ENG-012 | Raina Ho The Future of Paper: Alternative Paper Fiber                                | St. Peter's School<br>Jenny Soriano                              |
| MS-ENG-013 | Isaac Proekt Harnessing Your Bike  | William M. Meredith School<br>Christopher Leshock                |
| MS-ENG-014 | Samanta Salgado Chavez Building a Crystal Radio                                      | Mariana Bracetti Academy<br>Jana Somma                           |
| MS-ENG-015 | Bradford Strain Paper Airplane 101   | William M. Meredith School<br>Christopher Leshock                |
| MS-ENG-016 | Elyse Mousley Swinging Science   | French International School of Philadelphia<br>Kevin Fitzpatrick |
| MS-ENG-017 | Iyanuoluwa Ayannusi Illuminating the Future: Solar vs. Hydro                         | Galloway Township Middle School<br>Stefanie Tripician            |
| MS-ENG-018 | Jeffrey Lux Uplifting Shapes - Airfoil Design  | Charles F Patton Middle School<br>Nancy Wetzel                   |
| MS-ENG-019 | Srinikkesh Senthilkumar Truss The Process: An Examination of Load Distribution       | Valley Forge Middle School<br>Matthew Gibson                     |

| <b>PRESENTER</b>     | <b>TITLE</b>           | <b>SCHOOL &amp; SPONSOR</b>  |  |
|----------------------|------------------------|--|--|
| <b>ENVIRONMENTAL</b> |                        |  |  |
| MS-ENV-001           | Sophia Palmer          | What Fertilizers Affect The Growth of Algae?   | Elsinboro Township School<br>Joseph Sarbello                                       |
| MS-ENV-002           | Annalise Morley        | Growing Grass  | Upper Pittsgrove School<br>Danielle Taulane  |
| MS-ENV-003           | Avi Abrol              | Wildfire Watch:<br>Identifying Wildfires Using Satellite Data                                    | Newtown Middle School<br>David Curry   |
| MS-ENV-004           | Jake Saks              | How do Different Methods of Cleaning Oil Spills Affect the Amount of Oil Remaining in the Water? | Holicong Middle School<br>Robert Meletti   |
| MS-ENV-005           | Lila Davey             | The pH of Different Bodies of Water  | Academy of Notre Dame de Namur<br>Jessica Reid                                     |
| MS-ENV-006           | Marilyn Orłowski       | Which Plant Keeps the pH of the Ocean Safe?  | Academy of Notre Dame de Nanur<br>Jessica Reid                                     |
| MS-ENV-007           | Drew Graziano          |  |  |
| MS-ENV-008           | Ethan Davis            | Finding Carbon Efficient Ways to Break Down Plastics   | Haddonfield Friends School<br>Rebecca Rementer                                     |
| MS-ENV-009           | Leonardo Male          | The Effect of Different Fire Retardants on Wildfires, Humans, and Wildlife                       | Haddonfield Friends School<br>Rebecca Rementer                                     |
| MS-ENV-010           | Diksha Patel           | How does Geothermal Energy work?   | Springhouse Middle School<br>Troy Minarovic  |
| MS-ENV-011           | Tyler Iyengar          | The Effect of Pesticides vs. Genetically Modified Corn on Terrestrial and Aquatic Invertebrates  | Emmaus High School<br>Brent Landrum  |
| MS-ENV-012           | Ernest DiSabatino      | Does Coffee Grounds in the Soil Enhance the Growing Rate of a Plant?                             | Tower Hill School  |
| MS-ENV-013           | Hope Swansinger        | Luminescent Life   | Howell Middle School South<br>Helen Cleveland                                      |
| MS-ENV-014           | Myles Pham             | To Drink Or Not To Drink...?   | Julia Reynolds Masterman<br>Laboratory and Demonstration School<br>Brooke Lapinski |
| MS-ENV-015           | Hudson Quinn           | Oil Absorption   | William M. Meredith School<br>Christopher Leshock                                  |
| MS-ENV-016           | Marina Bonnaud         | Can Biodegradable Materials Replace Plastic as Protective Food Packaging?                        | General George A. McCall School<br>Scott Knoflicek                                 |
| MS-ENV-017           | Nicholas Duncklee Grow | Vegan Kombucha Leather   | General George A. McCall School<br>Scott Knoflicek                                 |
| MS-ENV-018           | Likhitha Inampudi      | Which Hydrogel Best Conserves Farm Water?  | Indian Valley Middle School<br>Amy Craig   |
| MS-ENV-019           | Mina Sylla             | Water Desalination   | French International School of Philadelphia<br>Kevin Fitzpatrick                   |
| MS-ENV-020           | Ansel Belani           | An Alternative to Road Salt  | Tredyffrin Easttown Middle School<br>Anthony Dilella                               |
| MS-ENV-021           | Lucy Jones             | Downstream Dilemma: What is the Impact of Stormwater Runoff on a Local Creek?                    | Villa Maria Academy Lower School   |

| <b>PRESENTER</b>   | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                           |
|--------------------|--|---|
| <b>MATHEMATICS</b> |  |   |
| MS-MTH-001         | Kavya Patel Origami: The Math Behind the Art                                 | Galloway Township Middle School<br>Stefanie Tripician |
| MS-MTH-002         | Jonah Baynes The Money Game  | Quinton Township School<br>Shane Manuel               |
| MS-MTH-003         | Zach Dordell How Does Age Affect Hit Probability?                            | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-MTH-004         | Madison Bruch Dice as Nice   | Quakertown Christian School<br>Lisa Reichley          |
| MS-MTH-005         | Brianna Stwalley Flavor Probability:<br>The Mystery Behind Dum-Dum Lollipops | Lenape Middle School<br>Jennifer Conver               |
| MS-MTH-006         | Benjamin Shpilman Rubik's Legacy   | Main Line Classical Academy<br>Danielle Nagelberg     |
| MS-MTH-007         | Rishil Patel Does the Number of Sides on a Dice<br>Affect its Probability?   | Toms River Intermediate North<br>Katie Keller         |
| MS-MTH-008         | Chase Yalon An (almost) Exact TSP Solver                                     | William Allen Middle School<br>Christian Heine        |
| MS-MTH-009         | Lucas Yang Numbers for Harmony:<br>Gauging the Inclusivity of Color Vision   | Springhouse Middle School<br>Susan Stern              |
| MS-MTH-010         | Alouette Bergeland Red, Orange, Green, and Degrees                           | William M. Meredith School<br>Christopher Leshock     |
| MS-MTH-011         | Lena Swedloff Up, Up, and Away!  | William M. Meredith School<br>Christopher Leshock     |
| MS-MTH-012         | Helen Spivak Wingspan  | William M. Meredith School<br>Christopher Leshock     |
| MS-MTH-013         | Andrew Gabriel Which Baseball Injury is the Most Common?                     | Indian Valley Middle School<br>Amy Craig              |
| MS-MTH-014         | Dean Stephanos How Does Color Affect Memory?                                 | Indian Valley Middle School<br>Amy Craig              |
| MS-MTH-015         | Mark Moles Trigonometry: The Science Behind Banking<br>a Basketball Shot     | Scott 6th Grade Center<br>Kathryn Lamothe             |
| MS-MTH-016         | Vishahan Sethu Beating the Bull Market with Artificial Intelligence          | Lionville Middle School<br>Mary Elvin                 |

## **MEDICINE/HEALTH**

|            |  |  |
|------------|--|--|
| MS-MED-001 | Thomas DiPrimo How Does Kinesio Tape Affect Performance?                                       | Oldmans Twp. School<br>Jason Winistorfer           |
| MS-MED-002 | Francesca Federenko How Does the Placebo Effect Performance?                                   | Oldmans Twp. School<br>Jason Winistorfer           |
| MS-MED-003 | Matthew Gym Development of Women Diabetes (Type 2)<br>Forecasting Model Using Machine Learning | Central Bucks High School South<br>Michelle Rhodes |
| MS-MED-004 | Toivo Siman How Effective are Different Deodorants at<br>Decreasing Sweat Produced?            | Holicong Middle School<br>Robert Meletti           |
| MS-MED-005 | Mia Martin To Bleed or Not to Bleed?   | Holy Child Academy<br>Erica Anderson               |
| MS-MED-006 | Leah Yosmanovich-Islam How Do You Tell if a Mouse is Good<br>to be Used in Animal Research     | Saint Dorothy School<br>Christine Cardone          |
| MS-MED-007 | Marius Barranco How Music Affects The Heart Rate   | Eugene A. Tighe Middle School<br>Chelsi Crompton   |

| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                       |
|------------------|--|---|
| MS-MED-008       | Ananya Relia<br>Effect of Cosmetic Products on Skin Health   | Voorhees Middle School<br>YARD Sciences           |
| MS-MED-009       | Finley Kerth<br>How Does the Age of the Helmets Effect its Quality?  | Haddonfield Friends School<br>Rebecca Rementer    |
| MS-MED-010       | Elizabeth Goodman<br>How Does Caffeine Affect Pulse Rate?  | Moravian Academy Middle School<br>JoAnne Daniels  |
| MS-MED-011       | Adwik Banerjee<br>Effects of High Sugar Diet on the Health of Drosophila melanogaster: Lesson Learned            | Springhouse Middle School<br>Scott Bauer          |
| MS-MED-012       | Katelyn Harper<br>Energy to Dribble  | Mariana Bracetti Academy<br>Jana Somma            |
| MS-MED-013       | Elizabeth Sammis<br>Is Your Heart Jumping or Dropping?   | William M. Meredith School<br>Christopher Leshock |
| MS-MED-014       | Xochi Meade<br>If you Prick us, do we not Bleed?<br>If you Tickle us, do we not Laugh?                           | William M. Meredith School<br>Christopher Leshock |
| MS-MED-015       | Sasha Mersky<br>Music to My Heart  | William M. Meredith School<br>Christopher Leshock |
| MS-MED-016       | Vedanth Iyengar<br>Health Effect of Different Flavors of Ecigarettes   | Pennfield Middle School<br>JoEllen Paterson       |
| MS-MED-017       | Grace Byard<br>It's Fat-tastic:<br>Dairy-Free Fats and Ice Cream Quality   | Cedarbrook Middle School<br>Beth Kenna            |
| MS-MED-018       | Abhidev Yelampalli<br>Assessing the Psychobiotic Potential of Probiotic-enriched Yoghurt and Fermented Beverages | Avon Grove Charter School<br>Kate Richardson      |
| MS-MED-019       | Diya Kumar<br>Analysis and Impact of High Glucose Foods on Bloating and Remedies                                 | Lionville Middle School<br>Mary Elvin             |

## **MICROBIOLOGY**

|            |   |   |
|------------|---|---|
| MS-MIC-001 | Tessa D'Alessandris<br>Did You Just Touch That?<br>Where to Find Germs in School  | Galloway Township Middle School<br>Stefanie Tripician |
| MS-MIC-002 | Samantha Christian<br>How Does the Usage of Mascara Affect the Amount of Bacteria Produced?   | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-MIC-003 | Jackson Perry<br>Does the Type of Food That Falls to the Ground Affect How Much Bacteria is Transferred from the Ground Within 5 Seconds?   | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-MIC-004 | Allen Dai<br>Which Type of Metal Can Kill Bacteria the Most Effectively?  | Holland Middle School<br>Nicholas Versace             |
| MS-MIC-005 | Ashley Kim<br>The Effects of Different Substrates on Lentinula edodes Mycelium  | Newtown Middle School<br>David Curry                  |
| MS-MIC-006 | Abigail Draus<br>What is the Germiest Part of a Car?  | Saint Dorothy School<br>Christine Cardone             |
| MS-MIC-007 | Lillian Meehan<br>How to Dry Your Hands,<br>the Most Germ-Free Way  | William Allen Middle School<br>Christian Heine        |
| MS-MIC-008 | Xavier Tineo<br>Antibacterial Soap vs. Regular Soap   | Haddonfield Friends School<br>Rebecca Rementer        |
| MS-MIC-009 | Sean Jeon<br>Antibiotic Resistance in E. coli Through Repeated Exposure: A Comparative Study of Ampicillin, Tetracycline, and Ciprofloxacin | Springhouse Middle School<br>Susan Stern              |
| MS-MIC-010 | Zeeshan Jasim Jasim<br>How does Transformation Conditions Change the Transformation Efficiency in E.coli?                                   | Springhouse Middle School<br>Scott Bauer              |
| MS-MIC-011 | Carolina Miranda<br>How do Different Seasonings Effect the Growth of Mold on Bread?   | Ursuline Academy<br>Eileen Koenig                     |

| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>  |
|------------------|----------------|--|
| MS-MIC-012       | Khari Robinson | Exploring Microbial Differences<br>William M. Meredith School<br>Christopher Leshock                       |
| MS-MIC-013       | Kevin Jones    | Brush Brush Brush!<br>Ad Prima Charter School<br>Megan Simmons   |
| MS-MIC-014       | Maurice Grave  | Which Type of Bread will Mold the Fastest and Slowest?<br>Ad Prima Charter School<br>Megan Simmons         |
| MS-MIC-015       | Madeeha Ameen  | Sanitizer Smackdown:<br>Isopropyl vs. Ethyl Alcohol in Sanitizer<br>Cedarbrook Middle School<br>Beth Kenna |
| MS-MIC-016       | Audrina Kim    | Which Mouthwash is Most Effective at Killing Bacteria?<br>The Wyndcroft School<br>Michael Stowell          |

## **PHYSICS**

|            |                   |   |
|------------|-------------------|---|
| MS-PHY-001 | Evangeline Sperry | Which Prism Shape Refracts the Most Violet Light?<br>Quinton Township School<br>Shane Manuel  |
| MS-PHY-002 | Georgia Hahn      | Liquid Drip Physics<br>Lower Alloways Creek School<br>Megan Strang  |
| MS-PHY-003 | Natalia Gatti     | The Effect of Drill Bit Diameter on the Length of the Resulting Lichtenberg Figure<br>Sussex Academy<br>Lauren Hvorecny   |
| MS-PHY-004 | Levi Cooper       | How the Shape of Propellers Affect the Level of Noise<br>Holicong Middle School<br>Chris McGullam   |
| MS-PHY-005 | Vincent Fernandez | How do Different High-spin Golf Balls Affect a Golf Ball's Spin?<br>Holicong Middle School<br>Robert Meletti  |
| MS-PHY-006 | Cameron Sacunas   | Science of Saves<br>St. Mary Magdalen School  |
| MS-PHY-007 | Rafaella Sterling | Sound Slurpers - Which Fabric Absorbs the Most Sound?<br>St. Andrew's School<br>Jovani Tablezo  |
| MS-PHY-008 | JJ White          | Dart Battle: Testing Name Brand Darts Against Competitors for Speed, Range and Accuracy and Understanding which Components make a Winning Dart<br>White Home School |
| MS-PHY-009 | Jenna Moskowitz   | Mass: The Need For Speed Physics<br>Delran Middle School  |
| MS-PHY-010 | Mugdha Chaturvedi | How Much Weight can be Added to a Maglev Train Before it Touches the Track<br>Springhouse Middle School<br>Troy Minarovic   |
| MS-PHY-011 | Yihan Li          | Do Different Materials have Different Surface Energies, Measured by Water Contact Angles?<br>Springhouse Middle School<br>Susan Stern                               |
| MS-PHY-012 | Aiden Kim         | The Mystery of the Gauss Rifle<br>Manalapan Englishtown Middle School<br>Dawn Danza   |
| MS-PHY-013 | Lucy McAleenan    | Keep Calm and Hydrate On<br>Ursuline Academy<br>Eileen Koenig   |
| MS-PHY-014 | Denise Njenga     | Softball Debate of the Century: Aluminum or Alloy<br>Red Lion Christian Academy<br>Natalie Fleming  |
| MS-PHY-015 | Lucas Sicks       | Does Scuffing a Wiffle Ball Affect its Curve?<br>William M. Meredith School<br>Christopher Leshock  |
| MS-PHY-016 | Shahn Spearman    | Water Surface Tension<br>William M. Meredith School<br>Christopher Leshock  |
| MS-PHY-017 | Sofie Bauers      | Fingerprints vs. Fahrenheit<br>William M. Meredith School<br>Christopher Leshock  |
| MS-PHY-018 | Abigail Kwon      | Does Your Mobile Phone Radiate? Measuring Cell Phone Electromagnetic Radiation<br>George A. McCall School<br>Scott Knoflicek  |



| <b>PRESENTER</b> | <b>TITLE</b>   | <b>SCHOOL &amp; SPONSOR</b>                           |
|------------------|--|---|
| MS-PHY-019       | Siddarth Sankar<br>Window Pain:<br>Science of Balancing Transparency and Mortality           | Arcola Intermediate School<br>Sharon Branca           |
| MS-PHY-020       | Jeffrey Fan<br>Harnessing Green Energy in the Air  | Arcola Intermediate School<br>Sharon Branca           |
| MS-PHY-021       | Kush Aggarwal<br>Ionic Thrusters:<br>Propelling Our Future                                   | Charles F. Patton Middle School<br>Nancy Wetzel       |
| MS-PHY-022       | Atharv Rajesh<br>Rolling Into the Future With Piezoelectricity                               | Lionville Middle School<br>Mary Elvin                 |
| <b>ZOOLOGY</b>   |  |   |
| MS-ZOO-001       | Callie Allcorn<br>Why are Chickens Afraid of Some Colors<br>While Being Attracted to Others? | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-ZOO-002       | Brody Kroll<br>Does Having Room to Graze Affect a<br>Chickens's Growth?                      | Oldmans Twp. School<br>Jason Winistorfer              |
| MS-ZOO-003       | Zoe Roth<br>To Kill or Not to Kill   | Quakertown Christian School<br>Lisa Reichley          |
| MS-ZOO-004       | Nicholas Davidson<br>When Ants Go Marching   | St. Andrew's School<br>Jovani Tablezo                 |
| MS-ZOO-005       | Luciano Insana<br>Mantis Meals: Yum or Yuck?   | Mantis Academy Homeschool<br>Ryan Reynolds            |
| MS-ZOO-006       | Siena Ripatrazone<br>Sweet N' Splenda Equals Ants  | William M. Meredith School<br>Christopher Leshock     |
| MS-ZOO-007       | Penelope Webber<br>Puppy Eyes  | William M. Meredith School<br>Christopher Leshock     |
| MS-ZOO-008       | Morgan Preston<br>Feline Fun   | William M. Meredith School<br>Christopher Leshock     |
| MS-ZOO-009       | Madison Truskowski<br>What is "Zero" in a Horse and<br>How do you Utilize it?                | Indian Valley Middle School<br>Amy Craig              |
| MS-ZOO-010       | Benjamin Shenko<br>How Does pH Affect the Decomposition<br>of Animal Tissue                  | Indian Valley Middle School<br>Amy Craig              |
| MS-ZOO-011       | Rita Escajadillo<br>One Fish Two Fish...<br>Ask Me How to Train a Fish!                      | Galloway Township Middle School<br>Stefanie Tripician |
| MS-ZOO-012       | Ellie McDonald<br>Does the Weather Affect Birds<br>Foaring Patterns                          | Charles F. Patton Middle School<br>Nancy Wetzel       |



*Student tour of DuPont*

| PRESENTER            | TITLE   | SCHOOL & SPONSOR  |
|----------------------|---|---|
| <b>TEAM PROJECTS</b> |   |   |
| MS-TM-001            | Alanis James<br>Elliana Norman                        | Which Wrapping Will Keep Refrigerated Apples the Freshest Over Six Days?  |
| MS-TM-002            | Reagan<br>Gillespie<br>Brynley Ecret                  | Light It Up!  |
| MS-TM-003            | Joseph<br>LeDonni<br>Adler Wang                       | Microplastics and Our Water   |
| MS-TM-004            | Noah<br>Sciortino<br>Satvik<br>Bandaru                | Mass Placement vs Earthquakes:<br>How Placement of Mass in a Building Affects its Ability to Withstand Quakes                       |
| MS-TM-005            | Nicole<br>Fedorov<br>Rachel Sommer                    | To Choose or Not to Choose:<br>How Gender and Age Impact Decisions  |
| MS-TM-006            | Diya Iyer<br>Adi Iyer                                 | How Do I Disinfect My Nebulizer?  |
| MS-TM-007            | Caden Metzgar<br>Aiden Tallada<br>Marshall Shank      | Algae eaters vs Algae eaters, Which is Better?  |
| MS-TM-008            | Luca Uliana<br>Trey Miller<br>Andrew Breneman         | What Effect Does the Miracle Berry Have on Spicy and Sour Foods?  |
| MS-TM-009            | Milan Buckley   | Milan's Dissolving Trash  |
| MS-TM-010            | Jackson Dean<br>Karina Benjamin                       | Stress is More  |
| MS-TM-011            | Sophia Clark<br>Gabriel Blome                         | Dominant Eye vs. Dominant Hand  |
| MS-TM-012            | Chiaki Lux<br>Isabella Cutillo                        | How Does Temperature Affect the Strength of a 16.4 Cubic cm Neodymium Plated Magnet's Magnetic Field Attracting 4 mm Metal Washers? |
| MS-TM-013            | Aaron Sharma<br>Rithvik<br>Chinthakuntla              | Pulse Detection is Easy as Pi!  |
| MS-TM-014            | Aradhya<br>Pasikanti<br>Arjun Reddy<br>Miraan Jhaveri | Can Biodegradable Hydrogels Conserve Water in Farming?  |
|                      |   | Quinton Township School<br>Shane Manuel   |
|                      |   | Lower Alloways Creek School<br>Megan Strang   |
|                      |   | Wrightstown Elementary School<br>Jennifer French  |
|                      |   | Newtown Middle School<br>David Curry  |
|                      |   | Main Line Classical Academy<br>Danielle Nagelberg   |
|                      |   | Strath Haven Middle School<br>Anita Singh   |
|                      |   | Pen Argyl Middle School   |
|                      |   | Pen Argyl Middle School   |
|                      |   | Freire Charter Middle School  |
|                      |   | William M. Meredith School<br>Christopher Leshock   |
|                      |   | St. Francis Xavier School<br>Samuel Dugan   |
|                      |   | Intermediate East<br>Kelly Natkie   |
|                      |   | Lionville Middle School<br>Mary Elvin   |
|                      |   | Lionville Middle School<br>Mary Elvin   |

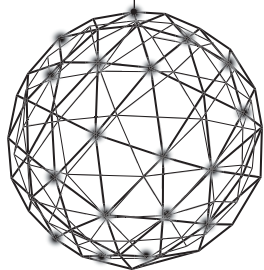
**DIRECTOR OF JUDGING** John Disston

**DIRECTOR OF SPECIAL AWARDS AND SCHOLARSHIPS**  
Mary-Rita Bonner

**FAIR COORDINATORS**

|                      |                                      |
|----------------------|--------------------------------------|
| 12th Grade Fair      | Helen Gieske and Rob Schroeder       |
| 11th Grade Fair      | Sue Mecouch and Mary Boeni           |
| 10th Grade Fair      | Melody Leithold and Phil Rittenhouse |
| 9th Grade Fair       | Roger Mecouch and Bob Fleck          |
| 6th - 8th Grade Fair | Harry Anselmo                        |
| Team Fairs           | Valerie Denny                        |
| Medals               | Dick Close                           |
| Special Awards       | Mary-Rita Bonner                     |

**2024 SCIENCE FAIR JUDGES**



|                        |   |
|------------------------|---|
| Frederick Ackerman     | University of Miami Department of Geological Studies          |
| Gregory Adam           | Merck   |
| Judie Adey             | Rowan College at Burlington County                            |
| Mitul Ajmera           | Constellation   |
| Aderonke Ajongbolo     |   |
| Masuma Akter           | Janssen Pharmaceuticals                                       |
| Richard Alexander      | Spectrix  |
| Gary Altoonian         | Altoonian Photography   |
| Armen Amirian          | Gemological Institute of America                              |
| Tiffany Anderson       | Celanese  |
| Kiran Andra            | Teva Pharmaceuticals  |
| Cheryl Armstrong       | US Department of Agriculture                                  |
| James Arndt            | Teva Pharmaceuticals  |
| Danielle Avington      |   |
| Aarav Awasthi          |   |
| Holger Babbe           | Janssen Research & Development (Johnson & Johnson Innovative) |
| Eric Bailey            | Celanese  |
| Margaret Baker         |   |
| Kristi Ballard         | Merck   |
| Atrayee Banerjee       | Zoetis  |
| Nando Bansal           | Retired   |
| Ryan Bass              | Johnson & Johnson   |
| Suchitra Basu          | Johnson & Johnson   |
| Subhasree Basu         | Janssen, R&D Division of Johnson & Johnson                    |
| Evan Beauvilliers      | DuPont  |
| William Belanger       | Retired   |
| Mary Belfast           | Teva Branded Pharmaceuticals                                  |
| Ngozi Bell             | Horizon's Global - Clinical Trials Support                    |
| Barbara Bendl          | Retired   |
| Isabella Bendorf       | Drexel University   |
| Francesca Best         | Quaker Houghton   |
| Gopal Bhat             | The Boeing Company  |
| Kamalnayan Bhatt       | Jazz Pharmaceuticals Inc                                      |
| Arinjita Bhattacharyya | Merck   |
| Laura Black            | West Pharmaceutical Services                                  |
| Sarah Blosch           | AGC Chemicals Americas  |
| Paul Brigandi          | Dow   |
| Etzel Brower           | Egg Harbor Township Board of Education                        |
| Douglas Brown          | Charles River Laboratories                                    |
| Diane Bruesehoff       |   |
| Grace Buckwalter       | Merck   |
| Katie Buniski          |   |

|                     |   |                       |                                       |
|---------------------|---|-----------------------|---------------------------------------|
| Paige Burke         | DePuySynthes (Johnson & Johnson)                                | Lora Drenth           | Constellation Energy                  |
| Matthew Burke       | Merck   | Pravin Dubey          | FMC Corporation                       |
| Karley Bussow       | Johnson & Johnson   | Karen Duffy           | Johnson & Johnson                     |
| Huan Cai            | Teva pharmaceutical   | Michael Duong         | University of Pennsylvania            |
| Linda Cairnes       | NJ Natural Lands Trust  | Matthew DuPrie        | Janssen Pharmaceutical                |
| Lauren Calvanese    | Teva Pharmaceuticals  | Keli Dzordzorme       | Johnson & Johnson                     |
| Nicholas Calvanese  | Howell Environmental  | Bob Eaves             | retired                               |
| Vincent Campanale   | Resolian  | Oshini Ekanayake      | Teva Pharmaceuticals                  |
| Gossett Campbell    | GSK   | Joelle Ernst          | Teva Pharmaceuticals                  |
| Clifford Campo      |   | Leyla Evans           | Teva Pharmaceuticals                  |
| Jose Campos         | Sanchez Resolian  | Nick Fabritiis        |                                       |
| William Cantara     | Merck   | Edith Fairweather     | Charles River Labs                    |
| Joseph Capobianco   | USDA-ARS  | Xuetong Fan           | USDA                                  |
| Jennifer Carpenter  | Harleysville Veterinary Hospital                                | Zhenyu Fan            | PJM                                   |
| Joe Carrara         | USDA Agricultural Research Service                              | Abigail Farrell       | Quaker Houghton                       |
| Sarah Casanova      | Janssen   | Keith Farrell         | Saint Gobain                          |
| Jennifer Cassidy    | USDA ARS ERRC   | Levita Feaster        | West Pharmaceutical Services          |
| Jennifer Casta      | Merck   | Arnold Feineman       | Retired                               |
| Christine Castagna  | Merck & Co., Inc.   | David Fenick          | Teva Pharmaceuticals                  |
| Yong Chen           | Rowan University  | Jenni Firrman         | USDA                                  |
| Zhongjun Cheng      | Johnson & Johnson   | Gabby Fittipaldi      |                                       |
| Patrick Chestnut    | Rowan University/Inspira Health Network/The Children's Hospital | Steve Fleischut       | Retired                               |
|                     |   | Greg Fonder           | Lockheed Martin                       |
| Ramesh Chintala     |   | Brian Forster         | Saint Joseph's University             |
| Nagaraju Chintam    | Saint Gobain  | Joanne Forsythe       | Saint Gobain                          |
| Michelle Chiu       | Children's Hospital of Philadelphia                             | Alysia Fostek         | Merck                                 |
| Baw Chng            | Bawman, LLC   | Kara Fraser           | West Pharmaceutical                   |
| Chidi Chukwunye     | Celanese  | Brian Freer           | Johnson & Johnson Innovative Medicine |
| Margaret Clapham    | DuPont  | Ervinas Gaidamauskas  | Teva Pharmaceuticals                  |
| Randolph Cleaver    | retired   | Jamie Gaitor          | Celanese                              |
| Richard Close       | retired   | Shilpa Gandre-Babbe   | ex GSK                                |
| Jonathan Corigliano | Testo Solutions   | Thomas Gans           | Lockheed Martin                       |
| Greg Cowper         | Academy of Natural Sciences of Drexel University                | Valerie Garcia-Negron | Department of Agriculture - USDA-ARS  |
|                     | Resolian Inc.   | Jamie Gates           | US Navy (NSWCPD)                      |
| Luke Creamer        | West Pharmaceutical Services                                    | Madeline Gelb         | Johnson & Johnson Innovative Medicine |
| Michael Cross       | GSK   | Alisa Gentles         | Fujifilm                              |
| Zhiyi Cui           | Atlantic Cape Community College                                 | David Gibboni         | retired                               |
| Timothy Cwik        | Federal Aviation Administration                                 | Cliff Gibson          | Constellation Energy                  |
| Holly Cyrus         | Janssen R&D   | Pushpinder Gill       | Johnson & Johnson                     |
| Katharine D'Aquino  | GlaxoSmithKline   | Brianna Gillott       | Merck                                 |
| Deidre Dalmas       | Teva Pharmaceuticals  | Jitendra Gohel        | Johnson & Johnson                     |
| Natalee Danko       | Retired   | Ken Goldberg          | Janssen R&D                           |
| Alexander David     |   | Steven Gorman         | Resolian, Inc                         |
| Ruben David, PE     | KES Educational Consultants                                     | Paul Gorman           | Quaker Houghton                       |
| Ahngelique Davis    | Retired NJ Public School Teacher                                | Elsa Gorre            | Janssen R&D                           |
| John Davis          | National Weather Service  | Peter Gorycki         | GlaxoSmithKline                       |
| Robert Deal         | NJ Water Environment Association                                | Joseph Grant          | Dow Chemical                          |
| Casey DeBaun        | Traffic planning and Design, Inc.                               | John Gray             | retired from Johnson and Johnson      |
| Vince DeFlavia      | ASA Analysis & Communication, Inc.                              | Megan Griendling      | Quaker Houghton                       |
| Radhika Desilva     | Charles River Laboratories                                      | Alexander Grimwade    | Retired                               |
| Julia DeWitt        |   | Bridgette Grizzle     | Teva                                  |
| Moutushi Dey        | Johnson & Johnson   | Laura Grussendorf     | Janssen                               |
| Kari Dickman        | Retired   | Emily Gruver          | Resolian                              |
| Victor Diener       |   | Boying Guo            | Johnson & Johnson Innovative Medicine |
| Shelley Dima        | Constellation   | Oliver Gutsche        | FMC                                   |
| Mark DiRado         |   | Mark Hansen           |                                       |
| Jake Dong           | Gilmore & Associates Inc.                                       | Jamie Hansen          | Teva Pharmaceuticals                  |
| Sharon Dotts        | Traffic Planning and Design, Inc.                               | Michael Hantman       | Charles River Laboratories            |
| Anthony Dougherty   |   | Jenny Happs           | Saint Gobain                          |

Jim Harris  
Shannon Hawkins  
Fred Hazboun  
Edwin Hein  
Jason Heindl  
Lawrence Henderson  
Matthew Henry  
Vince Herrera  
Lori Hetherington  
Kristina Hibbeln  
Simon Hinke

Lisa Hodge  
Eric Hoeflich  
Cam Holland  
Makayla Holt  
David Horvath  
David Huber  
Michael Hutchinson  
Wei-Ting Hwang  
John Iannuzzi  
Rachel Jackson  
Tegegn Jaleta  
Mahika Jawa  
Evangelin Jerome  
Ravikumar Jethani  
Nadita Jewnandan  
Tony Jin  
Samuel Johannesen  
Sarah Johnson

Elaine Johnston  
Gee Joseph  
Mirela Josifi  
Vijay Juneja  
Shaileshbhai Kaklotar  
Andrew Kelliher  
Liam Kelly  
Ashley Kennedy  
Julianne Kerwood

Retired  
Harleysville Veterinary Hospital  
Constellation Energy  
Llfescan  
Rowan University  
Central Behavioral Health  
Glaxosmithkline  
Dupont  
CertainTeed/Saint Gobain  
Merck & Co.  
Janssen Pharmaceutical Companies  
of Johnson & Johnson  
Teva Pharmaceuticals

Naval Surface Warfare Center  
PNC Bank  
US Navy/Office of Naval Research  
Johnson & Johnson Innovative Medicine  
University of Pennsylvania  
Kulicke and Soffa  
Johnson & Johnson Innovative Medicine  
Charles River Laboratories

Merck, Sharpe and Dohme  
USDA Eastern Regional Research Center  
Charles River Laboratories  
National Weather Service  
National Oceanic and Atmospheric Ad  
Retired  
DuPont

USDA-ARS-ERRC  
Amneal Pharmaceuticals Inc  
Constellation  
Johnson & Johnson  
US Fish and Wildlife Service  
Merck & Co., Inc.

Dae Kim  
Rachel Kimble  
Alan Kober  
Li Kopp  
Natasha Kozlyuk  
Phil Krasney  
Lily Kull  
William Kullmann  
Anuj Kumar

Joseph Kurian  
Roger Lacy  
Chakradhar Lagishetty  
Rahul Madhukar Lalge  
Anita Laloo  
Dan LaPera  
Renee Latona  
Joann Lauff  
Alvin Lavoie  
Vivek Paul Lawrence  
Tanishia Lawson  
Tia Lawson  
Justine Lee

Madeleine LeFevre  
Kurt Leininger  
Michael Lembo  
Debbie Letham  
Brian Levy-Polis  
Michelle Lewandowski  
Linjie Li  
Mengchun Li  
David Limberg  
Xiefan Lin-Schmidt  
Yun Liu  
John Livezey  
Alyssa Long  
Kaho Long  
Marie Loughran  
Yun Lu

Merck  
Teva Pharmaceuticals  
Retired  
KB Global Holding Limited  
Johnson & Johnson  
Teva Pharmaceuticals  
Quaker Houghton  
retired  
Department of Natural Resources and  
Environmental Control  
Independent consultant  
retired, from The Boeing Company  
Johnson & Johnson Innovative Medicine  
GlaxoSmithKline  
Merck  
Quaker Houghton  
USDA-ARS-ERRC  
Merck  
Retired  
Deloitte Consulting LLC

Resolian  
Janssen Research & Development -  
Johnson & Johnson  
Charles River Laboratories  
Retired  
CertainTeed LLC  
Charles River Laboratories  
FMC  
Janssen R&D  
Broadcom Inc  
Merck  
DuPont  
Johnson & Johnson Innovative Medicine  
Teva Pharmaceuticals  
Atlantic Cape Community College  
Merck Sharp & Dohme LLC  
Janssen  
Merck & Co., Inc.



Dennis Ludwig Retired  
A. Ronald MacGillivray Villanova University  
Venkata Maddali Janssen  
Emtithal Mahmoud  
Kenneth Maksimchuk Johnson & Johnson Innovative Medicine  
Heather Malikowski Electric Power Research Institute (EPRI)  
Slobodanka (Dina) Manceva Teva Pharmaceuticals Inc  
Zhihao Mao Teva Pharmaceuticals  
Jason Martin Merck & Co., Inc.  
Frank Maslanka Johnson & Johnson  
Stephen Mastro US Navy  
Luke Mastrorilli W.L. Gore & Associates, Inc.  
Joanne Mathiasen Drexel University College of Medicine  
Kristy Matulevich Harcum College  
Nola McAloon Johnson & Johnson  
Dillon McCarthy  
Patrick McCullagh DePuy Synthes, Johnson & Johnson  
Lindsay McKeever USDA- ARS  
Michelle McMullin Self employed  
Liana McQuain  
Janet Melnyk Saint Gobain/CertainTeed  
Christopher Menna Menna Engineers & Associates  
Karsten Menzel Merck  
Kelly Messner DuPont  
Dennis Metrick Retired  
Michael Meyering Merck & Co., Inc.  
Gerard Michaud Retired  
Karen Milkiewicz Teva Pharmaceuticals  
Seth Miller Spark Therapeutics  
Amanda Miller USDA ARS  
Abbi Miller Johnson & Johnson  
Judith Miller Retired  
Dimple Modi GSK  
John Moran Saint Gobain  
Jim Moskowitz Self employed  
Sudarsan Mukhopadhyay USDA  
Eric Munoz Resolian  
Kim Munsell Johnson & Johnson Innovative Medicine  
Craig Nagler Xylem, Inc.  
Nida Naseer Teva Pharmaceuticals

Rasika Nawimanager  
Manoj Nerkar  
Liza Ngo  
Hoa Nguyen  
Haichen Nie  
Michelle Niedziela  
Abhar Nissar  
Jin Niu  
Paul Novak  
Barbara Nyland  
Thomas O'Brien  
Stacey O'Malley  
Peace Odey  
David Olsen  
Steven Orcutt  
Zulfiya Orynbayeva  
Angie Osoria  
Briana Pampuch  
Khiro Panda  
Yongle Pang  
Kumar Pankaj  
George Paoli  
Sung Park  
Vishwa Patel  
Pooja Patel  
Pujita Pathak  
John Patrick  
Ieva Paulauskaite  
Nikki Payung  
Nicole Pellecchia  
Lara Penn  
Brijesh Penugonda  
Taylor Perkins  
Brandon Perrone  
Karen A. Pescatore  
Samantha Petersen  
Ted Petley  
Malvina Petronyte  
Lily Pfeifer  
Quynh Giao Pham  
Maxwell Pistilli  
Mark Platt  
Marc Pochet  
Steven Pomerantz  
Lucas Poon  
Erika Portero  
Alicia Potuck  
Michael Powell  
Danica Pratta  
Alfred Prisco  
Dominick Pulice  
Rabbika Rafiu  
Izzat Raheem  
Gauri Ramaswamy  
Lavanya Ranganathan  
Ramachandra Reddy  
Mary Reinthal  
Charles Rhodes  
Anna Rodionova  
Sheila Romine

Teva Pharmaceuticals  
Dow Inc  
Janssen  
DuPont  
HCD Research  
Teva  
SaintGobain  
DuPont  
Munzing  
Merck & Co. Inc  
Teva Pharmaceutical  
Merck & Co  
Revvity  
Charles River Labs  
USDA-ARS-ERRC  
Langan  
Asurion LLC  
GSK  
USDA-ARS-East Regional Research Ctr.  
Charles River Laboratories  
Merck  
GlaxoSmithKline  
Janssen  
Johnson & Johnson  
Teva Pharmaceuticals  
Teva Pharmaceuticals  
Johnson & Johnson  
Merck  
Johnson & Johnson  
Charles River Laboratories  
Medexus Pharma  
American Lung Association  
Merck  
Johnson & Johnson  
Teva Pharmaceuticals  
Rowan University  
Teva Pharmaceuticals  
Merck  
Teva Pharmaceuticals  
Lockheed Martin  
Johnson & Johnson Innovative Medicine  
Johnson & Johnson  
Chemours Company  
GlaxoSmithKline  
USDA - Agricultural Research  
Lanxess  
Perkiomen Animal Hospital [owner]  
Charles River Laboratories  
Merck  
WuXi AppTec  
Bristol Myers Squibb  
Dupont  
Batta Environmental Associates, Inc.  
Retired





|                        |                                       |                       |  |
|------------------------|---------------------------------------|-----------------------|--|
| Chris Rood, P.E.       | AECOM                                 | Suzann Steadman       | Self employed                              |
| Bruce Rosenbaum        | Retired                               | Amanda Stiffler       | Quaker Houghton                            |
| Michael Roszkowski     | Retired                               | Ryan Stoklosa         | USDA Agricultural Research Service         |
| Jonathan Roth          | Retired                               | Sven Strnad           | Retired                                    |
| Dianne Rothstein       | Retired                               | Liz Stubbs            | Delrin USA, LLC.                           |
| Kelsey Rule            | Quaker Houghton                       | Jennifer Stuckey      | Sitecore, Inc                              |
| Joshua Rusbuldt        | Johnson & Johnson Innovative Medicine | William Studt         | Retired from Sanofi Aventis Pharma         |
| Jennifer Ryan          | Merck                                 | Robert Studt          | Johnson & Johnson                          |
| Ahmet Sacan            |                                       | Ted Studt             | ScribeAmerica                              |
| Will Salem             | AGC Chemicals Americas, Inc.          | Aparna Subramanian    | Shellback Semiconductor                    |
| Carilyn Salmi          | Johnson & Johnson                     | Maxx Suchowicki       | Charles River Laboratories                 |
| Phyllis Salzman        | Retired                               | Daniel Sulon          |  |
| Jacqueline Sameer      |                                       | Daniel Sylawa         | Retired, Phoenix Contact USA, Inc.         |
| Punam Sandhu           | Jazz Pharmaceuticals                  | Susan Tam             | Tavotek Biotherapeutics                    |
| Siddharth Sapa         |                                       | Harold Tapamo         | Eurofins Professional Scientific Solutions |
| Aileen Sargent         | Chester County Head Start             | Michael Tapykoff      | Jazz Pharmaceuticals                       |
| Clarence Sasso         | Self Employed                         | Karen Taylor          |  |
| Muhunthan Sathiosatham | The Dow                               | Paige Teehan          | Agilent Technologies                       |
| Marilyn Schneider      | The United Methodist Church           | Nic Thibodeaux        |  |
| John Philip Schramm    | SES - Society of European Satellites  | Arez Thobani          | Johnson & Johnson                          |
|                        | EU/US Operations                      | Fred Thompson         | Retired                                    |
| Robert Schreiber       | Retired                               | Jane Toscano          | Merck                                      |
| Rajashree Seetamraju   | Honeywell                             | Ed Trauffer           | Veranova                                   |
| Vedangi Shah           | Merck                                 | Madison Trinkle       | Johnson & Johnson - Janssen                |
| Andrew Shah            | Dow Chemical                          | Valerie Trotter       | Janssen Research and Development           |
| Stacie Shaner          | Johnson & Johnson Innovative Medicine | Dike Ukuku            | USDA                                       |
| Craig Shaner           | DuPont                                | Alexander Ulmer       | Barry Isett & Associates                   |
| Mohammed Shardar       | Merck & Co                            | Matthew Urich         | Air Products and Chemicals, Inc.           |
| Pawan Sharma           | Thomas Jefferson University           | Gabriella Vailati     | Delaware Depart. of Natural Resources      |
| Allan Shatzman         | Retired                               | and Environmental     |  |
| Dana Shuey             | Incyte Corporation                    | Diane Valentin        | Saint Joseph's University                  |
| Michael Siegel         | Retired                               | Chandrashekar Varagur | Capgemini                                  |
| Scott Sifford          | Retired                               | Bharathi Vellalore    | Johnson & Johnson Innovative Medicine      |
| Peter Silverberg       | Retired                               | Roman Ventura         | Datwyler Pharma Packaging Intl             |
| Anita Singh            | Temple Univ                           | Alan Verbit           | Retired                                    |
| Edward Skuchas         | Retired                               | Annmarie Vigilante    | Langan Engineering                         |
| Christopher Smalley    | Retired                               | Lanisa Villanueva     | Johnson & Johnson                          |
| Erin Solomon           | Howard Hughes Medical Institute       | Sandra Vrobel         | GlaxoSmithKline (GSK)                      |
| John Sorrentino        | ValSource Inc                         | Edward Wagner         | William Penn Foundation                    |
| Katie Sprick           | AGC Chemicals                         | Seth Wagner           | Dow  |



|                             |                                       |
|-----------------------------|---------------------------------------|
| Hans Waldenmaier            | Johnson & Johnson Innovative Medicine |
| Mindi Walker                | Janssen R&D/ Johnson & Johnson        |
| Weirong Wang                | Janssen R&D                           |
| Cheng Wang                  | Merck & Co., Inc.                     |
| Yiqun Wang                  | Data-bi                               |
| Zhihong Wang                | Rowan University                      |
| Celine Wang                 | Johnson & Johnson                     |
| Fiona Wehmeyer              | AgroFresh, Inc.                       |
| Syd Weinstein               | Retired                               |
| Jonas Wilf                  | Jazz Pharmaceuticals                  |
| Gervan Williams             | Latham BioPharm Group                 |
| Alice Wiscount              | Teva Pharmaceuticals                  |
| Robert Wright               | Bowman                                |
| Jingwei Wu                  | Temple University                     |
| Jing Xiao                   | Regeneron Pharmaceuticals Inc         |
| Yan Xu                      | Biogen                                |
| Ming Xu                     | Teva Pharmaceuticals                  |
| Archana Balkrishna Yadav    | Executive                             |
| Sheng Yang                  | Johnson & Johnson                     |
| Zheng Yao Lehigh University |                                       |
| Mehran Yazdanian            |                                       |
| Myrna Yehia                 | Johnson & Johnson Innovative Medicine |
| Christian Yother            | Charles River Laboratories            |
| Jason Young                 | Teva                                  |
| Jingbo Yu                   | Incyte                                |
| Lai-Ming Yung               | Janssen                               |
| Jason Zallie                |                                       |
| Ann Zeleniak                | Johnson & Johnson Innovative Medicine |
| Tammy Zingaro               | Johnson & Johnson Innovative Medicine |
| Stephanie Zublick           | Quaker Houghton                       |



*DuPont Excellence in Teaching awardees*

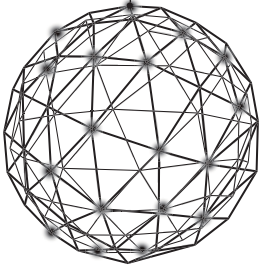
**TEACHER**

Anita Abraham  
 Amelia Adams  
 Colleen Aiken  
 Jamar Alston  
 Carol Althouse  
 Maria Alvarez  
 Erica Anderson  
 Claudia Angle  
 Jennifer Anthony  
 Carrie Bannon  
 Liza Baskin  
 Amit Basu  
 Scott Bauer  
 Richard Becker  
 Elizabeth Begley  
 Marie Behnke  
 Samy Belbgra  
 Jen Bergman  
 Ruth Blouch  
 Tracy Boedewig  
 Maria Bolner  
 Adria Bondanza  
 Alana Bouie  
 Jeffrey Bowlby  
 Sharon Branca  
 Roberta Brandao  
 Mark Brandreth  
 Etzel Brower  
 Diane Bruesehoff  
 Deborah Bruvik  
 Roseann Burns  
 Cherie Burns  
 Christine Cardone  
 Melissa Carnahan  
 Nichol Carroll  
 Daniel Christman  
 Helen Cleveland  
 Michael Conductor  
 Jennifer Conner  
 Jessie Copeland  
 Neisha Coursey  
 Jared Courtney  
 Monique Coval  
 Amy Craig  
 Chelsi Crompton  
 David Curry  
 JoAnne Daniels  
 Dawn Danza  
 Tyler Davenport  
 Marie Donato  
 Jacqueline Dryfoos  
 Samuel Dugan  
 Christine Dunne  
 Don Dunner  
 Dawn Edelman  
 Rosemary Edmiston  
 Hoda Ehsan  
 Judy Elinow

**SCHOOL**

George Washington High School  
 Woodstown High School  
 Pennbrook Middle School  
 Coatesville Area Intermediate Highschool  
 Woodstown High School  
 Germantown Friends School  
 Holy Child Academy  
 Bridgeton Highschool  
 Westtown School  
 Holicong Middle School  
 Marine Academy of Technology and Environmental Science  
 George Washington Carver Engineering and Science  
 Springhouse Middle School  
 Lower Moreland High School  
 Cherry Hill High School West  
 Manalapan-Englishtown Middle School  
 Temple Stem-UP  
 Marsh Creek Sixth Grade Center  
 The Pilgrim Academy  
 St. Andrew's School  
 West Chester East High School  
 Sun Valley High School  
 Green Woods Charter School  
 Eastampton Community School  
 Arcola Intermediate School  
 The Shipley School  
 Cherry Hill East  
 Egg Harbor Township Board of Education  
 Bishop McHugh Regional Catholic  
 Moorestown Friends School  
 Upper Darby High School  
 Pennsville Memorial High School  
 Saint Dorothy School  
 Indian Crest Middle School  
 Immaculate Heart of Mary School  
 Springhouse Middle School  
 Howell middle school south  
 Lenape High School  
 Lenape Middle School  
 The Independence School  
 Fred Fifer III Middle School  
 The Hill School  
 Saint Francis Xavier School  
 Indian Valley Middle School  
 Eugene A. Tighe Middle School  
 Newtown Middle School  
 Moravian Academy Middle School  
 Manalapan Englishtown Middle School  
 Cumberland County Technical Education Center  
 AMSA at Johnstone  
 Sts. Simon & Jude  
 St. Francis Xavier school  
 Philadelphia Academy Charter High School  
 Woodstown Middle School  
 Upper Dublin High School  
 Haverford High School  
 The Hill School  
 Central Bucks High School East

**SPONSORING TEACHERS  
 AND SCHOOLS**



| TEACHER              | SCHOOL   |
|----------------------|--|
| Dina Ellsworth       | High Technology High School                            |
| Mary Elvin           | Lionville Middle School                                |
| Kelly Farrington     | Classical Conversations                                |
| Jill Fernandez       | Smithville Elementary School                           |
| James Finley         | Northeast High School                                  |
| Kevin Fitzpatrick    | French International School of Phila                   |
| Natalie Fleming      | Red Lion Christian Academy                             |
| Erin Flexner         | West Vincent Elementary                                |
| Jill Suzanne Forrest | Southern Lehigh High School                            |
| Jennifer French      | Wrightstown Elementary School                          |
| Brenda Frost         | Garnet Valley High School                              |
| Elizabeth Gailey     | St. Aloysius Academy                                   |
| Erika Gamble         | Tamanend Middle School                                 |
| Stephen Geneva       | Holicong Middle School                                 |
| John Gentile Villa   | Joseph Marie High School                               |
| Christine Girtain    | Toms River High School North                           |
| Gina Givens          | Lower Cape May Regional High School                    |
| Daniel Goduti        | The Haverford School                                   |
| Jeffrey Goldader     | The Baldwin School                                     |
| Stacey Gould         | Council Rock High School North                         |
| Terese Grateful      | Council Rock High School North                         |
| Brian Grillo         | Cherry Hill High School West                           |
| Robert Hachtman      | Bangor Area High School                                |
| Sharon Hartranft     | Archbishop Wood High School                            |
| Michael Haughwout    | Rumson-Fair Haven Regional H. S.                       |
| Samantha Haughwout   | Biotechnology High School                              |
| Mark Hayden          | Central Bucks High School East                         |
| Christian Heine      | William Allen Middle School                            |
| Kaitlin Heintzelman  | Parkland High School                                   |
| Robert Helm          | Methacton High School                                  |
| Robert Herbstritt    | Central High School                                    |
| Patrice Hermann      | French International School of Phila                   |
| Monica Higgins       | Friends Select School                                  |
| Kassandra High       | Collegium Charter School                               |
| Sheila Hinkley       | Owen J. Roberts Middle School                          |
| Michael Holland      | St. Mark's   |
| Paul Holt            | Freire Charter High School                             |
| Brian Holtzhafer     | Orefield Middle School                                 |
| Emily Hui            | Garnet Valley High School                              |
| Alyssa Hull          | Sanford School   |
| Lauren Hvorecny      | Sussex Academy   |
| Ashley Hyde          | St. Andrew's School                                    |
| Alyson Iovacchini    | Universal Vare STEM & Arts Academy                     |
| Leanne Jones         | Upper Dublin High School                               |
| Meghan Kanski        | Unionville High School                                 |
| Jennifer Karetsky    | Springhouse Middle School                              |
| Alexandra Keefe      | LEAP Academy Charter                                   |
| Katie Keller         | Toms River Intermediate North                          |
| Jason Kelsey         | Marine Academy of Technology and Environmental Science |
| Beth Kenna           | Cedarbrook Middle School                               |
| Molly Kenny          | Villa Joseph Marie High School                         |
| Sarah Kesten         | Germantown Academy                                     |
| Wendy King           | Downingtown West High School                           |
| Gregory Klucznik     | St. Mary Magdalen Catholic School                      |
| MaryJo Knauer        | Charles F. Patton Middle School                        |
| Scott Knoflicek      | General George A. McCall School                        |
| Eileen Koenig        | Ursuline Academy                                       |

| TEACHER                | SCHOOL   |
|------------------------|--|
| James Kolter           | Villa Maria Academy  |
| Jelena Komitas         | Manalapan High School  |
| Cheryl Krasowski       | Coatesville Area Senior High School                          |
| Bruce Krohn Rosa       | International Middle School                                  |
| Jennifer Kuhl          | Coatesville Area Intermediate H. S.                          |
| Jessica Kurtz          | Intermediate South   |
| John Kuzan             | Lacey Township High School                                   |
| Kristi Lancaster       | Broad Street School  |
| Brent Landrum          | Emmaus High School   |
| Brooke Lapinski        | Julia Reynolds Masterman Laboratory and Demonstration School |
| Melody J. Leithold     | North Penn High School                                       |
| Christopher Leshock    | William M. Meredith School                                   |
| Erik Levin             | Manalapan High School  |
| Diane Liddington       | Central Bucks High School West                               |
| Joanne Lilliendahl     | Upper Dublin High School                                     |
| Matthew Lohman         | Newark Charter High School                                   |
| Shane Manuel           | Quinton Township School                                      |
| Kelly Matri            | Middletown High School South                                 |
| Chris McGullam         | Holicong Middle School                                       |
| Robert Meletti         | Holicong Middle School                                       |
| Matthew Memmo          | The Episcopal Academy  |
| Troy Minarovic         | Springhouse Middle School                                    |
| Emily Minbiole         | Devon Preparatory School                                     |
| Zachary Minken, Jr.    | Masterman  |
| Megan Mohl             | Council Rock High School South                               |
| Michael Morgan         | Upper Dublin High School                                     |
| Jamie Munyon           | Alloway Township School                                      |
| Lauren Myers           | Springhouse Middle School                                    |
| Danielle Nagelberg     | Main Line Classical Academy                                  |
| Kelly Natkie           | Intermediate East  |
| Clare Ng               | Marine Academy of Technology and Environmental Science       |
| Anton Ocepek           | Downingtown STEM Academy                                     |
| Helena Olsen           | Woodstown Middle School                                      |
| Stephen Ordog          | Woodstown High School  |
| David Pacevich         | Lower Cape May Regional High School                          |
| Laura Panettieri       | Sol Feinstone Elementary School                              |
| JoEllen Paterson       | Pennfield Middle School                                      |
| Brian Patton           | George School  |
| Eual Phillips          | Hill-Freedman World Academy                                  |
| Gina Phillips          | Toms River Intermediate East                                 |
| Renee Di Pietro        | Sun Valley High School                                       |
| Mechthild Pohlschroder | New Foundations Charter High School                          |
| Paul Polinski          | Chelsea Heights School                                       |
| Kristen Redkoles       | Polk SCVTS   |
| Christine Poll         | Villa Joseph Marie High School                               |
| Alyssa Polselli        | St. Joseph School  |
| Daniel Powers          | Harrilton High School  |
| Hope Pressler          | Pressler Home School   |
| David Price            | Upper Dublin High School                                     |
| Craig Queenan          | High Technology High School                                  |
| Lisa Reichley          | Quakertown Christian School                                  |
| Jessica Reid           | Academy of Notre Dame de Namur                               |
| Rebecca Rementer       | Haddonfield Friends School                                   |
| Ryan Reynolds          | Mantis Academy Homeschool                                    |
| Michelle Rhodes        | Central Bucks High School South                              |
| Kate Richardson        | Avon Grove Charter School                                    |

**TEACHER****SCHOOL**

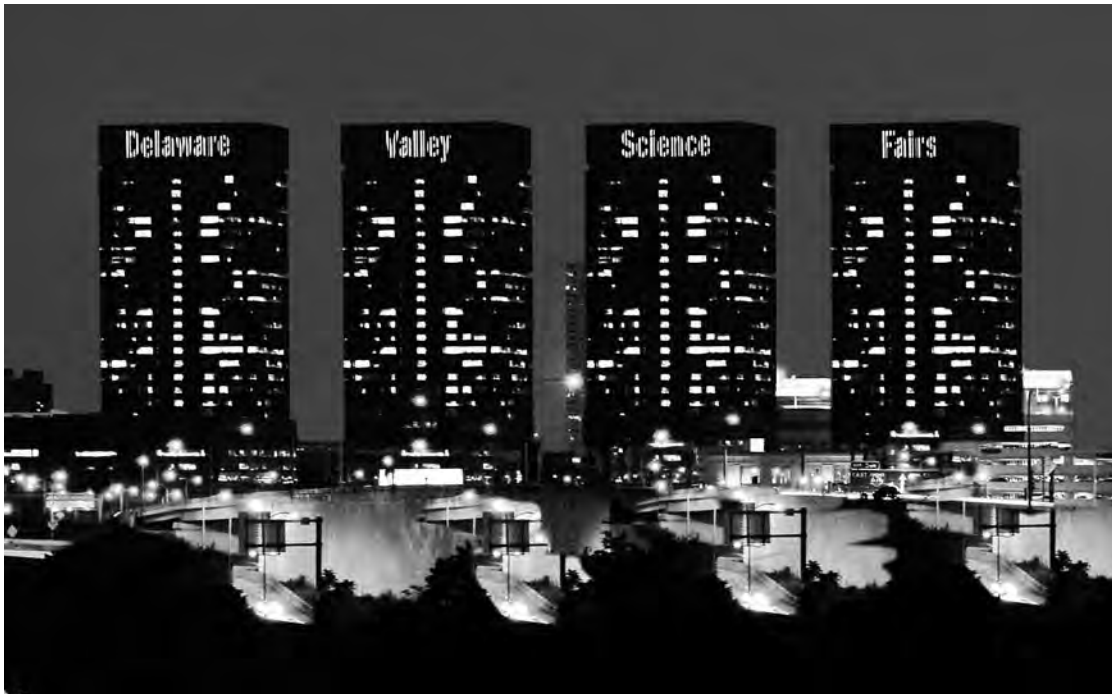
Chris Rickard  
 Chris Roth  
 Graceanne Ruggiero  
 Doug Sample  
 Joseph Sarbello  
 Amy Scherr  
 YARD Sciences  
 Jim Scott  
 Rachel Senft  
 Joe Sheenan  
 Wendy Sheetz  
 Kelly Showers  
 Megan Simmons  
 Anita Singh  
 Chris Smith  
 Crystal Smith  
 Jenny Soriano  
 Yvonne Sotiropoulos  
 Scott Sowers  
 Roxanne Spencer  
 Justin Stahl  
 Scott Stein  
 Susan Stern  
 Michael Stowell  
 Megan Strang  
 Robert Styer  
 Jamie Swanson  
 Jovani Tablezo

Woodstown High School  
 Folsom Elementary School  
 Freedom High School  
 Upper Dublin High School  
 Elsinboro Township School  
 Titus Elementary School  
 Voorhees Middle School  
 Lenape High School  
 Cherokee High School  
 Villa Joseph Marie High School  
 Moravian Academy  
 Conestoga High School  
 Ad Prima Charter School  
 Strath Haven Middle School  
 Upper Dublin High School  
 Thomas E. Harrington Middle School  
 St. Peter's School  
 Pope John Paul II RCE  
 Abington Friends School  
 Ranney School  
 Archbishop John Carroll High School  
 Springside Chestnut Hill Academy  
 Springhouse Middle School  
 The Wyndcroft School  
 Lower Alloways Creek School  
 Homeschool  
 Pennsbury High School  
 St. Andrew's School

**TEACHER****SCHOOL**

Samantha Taff  
 Danielle Taulane  
 Michele Thomas  
 Jennifer Toner  
 Stefanie Tripician  
 Dione Tsoplakis  
 Lakshmi Vaddi  
 Rachel Booker Vance  
 Nicholas Versace  
 Judson Wagner  
 Jeffrey Warner  
 Sean Watson  
 Nancy Wetzel  
 Keeley White  
 Amy Williams  
  
 Jason Winistorfer  
 John Wnek  
  
 Karen Wolfe  
 Russell Wolff  
 Deborah Wysocki  
 Joan Yoon  
 Alexandra York  
 Elisabeth Zafiris  
 Ann Zalasky  
 Barry Ziober

Biotechnology High School  
 Upper Pittsgrove School  
 Sussex Technical High School  
 Charter School of Wilmington  
 Galloway Township Middle School  
 Sovereign Avenue School  
 Avon Grove High School  
 Vance Homeschool  
 Holland Middle School  
 Brandywine High School  
 Alder Ave Middle School  
 Moorestown High School  
 Charles F. Patton Middle School  
 East Coventry Elementary  
 Marine Academy of Technology and Environmental Science  
 Oldmans Twp. School  
 Marine Academy of Technology and Environmental Science  
 Souderton Area High School  
 Cheltenham High School  
 Lenape Middle School  
 Lakewood High School  
 Lacey Township High School  
 Holy Child Academy Drexel Hill  
 Springside Chestnut Hill Academy  
 Great Valley High School



*PECO building*



## DELAWARE VALLEY SCIENCE FAIRS, INC.

**BOB SOLOMON, PH.D.**

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jdisston@dvsf.org

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**BELLE ROMINE**

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**SUZANNE MECOUCH**

*Director of Teacher Development*  
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