



# DELAWARE VALLEY SCIENCE FAIRS, INC.

## PROGRAM OF ENTRIES 2018

### 70TH DELAWARE VALLEY SCIENCE FAIRS

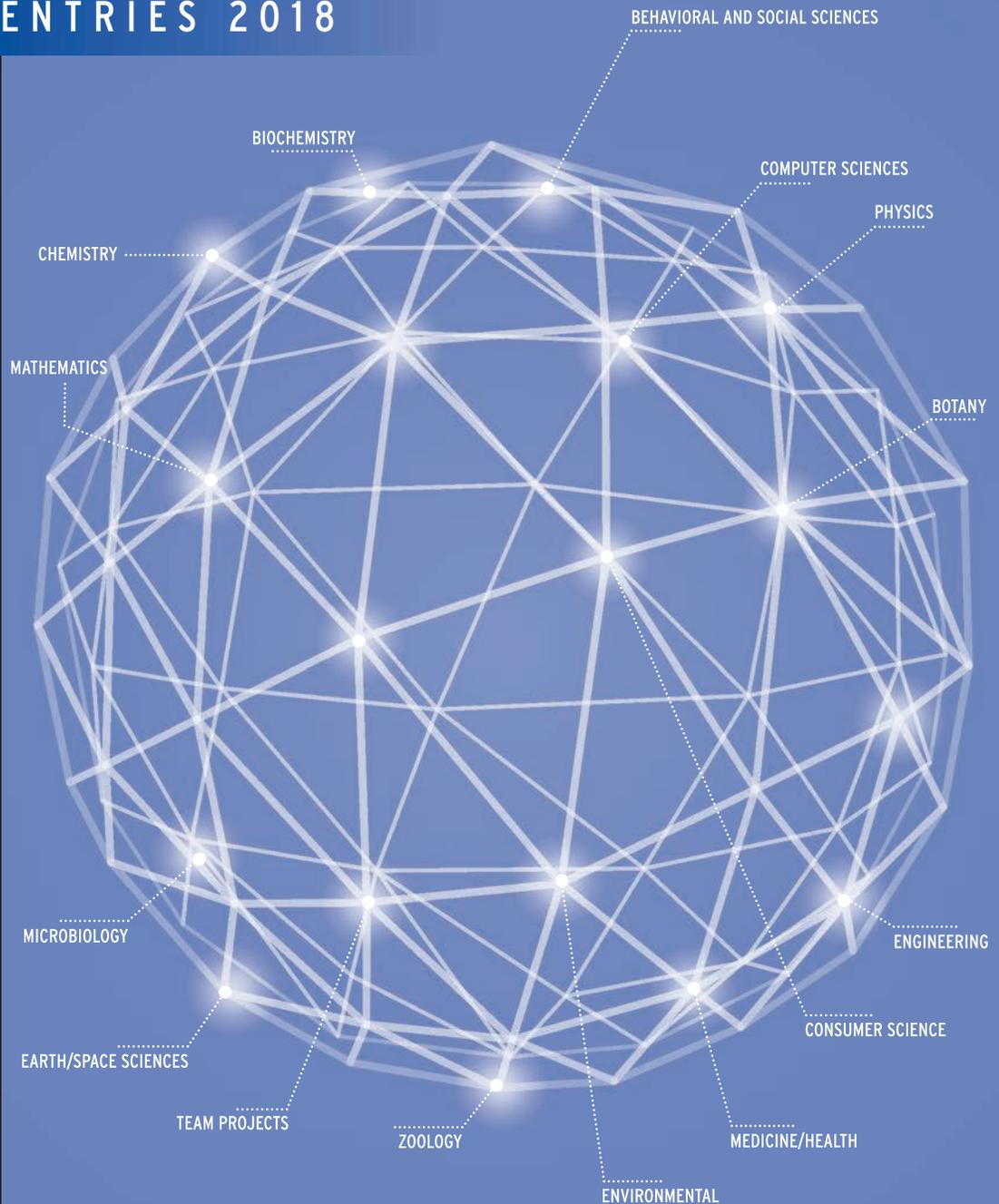
6th - 12th Grades

**APRIL 3 - 5, 2018**

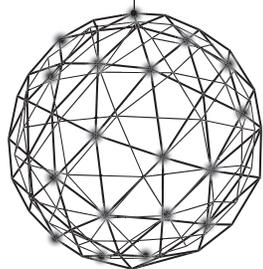
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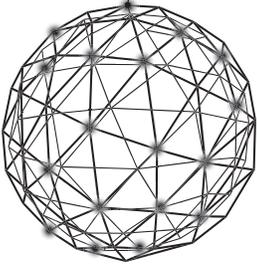
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Welcome to the 70th Annual Delaware Valley Science Fairs (DVSF). I extend congratulations to all the participants. Every student here has won an award from their Regional fairs. As I have said many times before, you are not winners because you won 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.

DVSF is a program whose 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.

## LETTER FROM THE PRESIDENT



The focus for DVSF is what is going on in the classroom. DVSF is designed to encourage 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, evaluation claims, providing evidence for points of view, and analyzing new situations. These are the same skills student 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 students who competed at the Intel International Science and Engineering Fair (ISEF) in Los Angeles did very well. They won 19 awards, including a Best in Category! Eight students from DVSF were also named Semi-Finalists and one is a Finalist in the Broadcom MASTERS competition for middle school students. We also had two Finalists in the Regeneron Science Talent Search for high school seniors! We are all very proud of their accomplishments. DVSF provides a vehicle for all students to excel and reach their full potential.

I want to thank the following for their contributions: Drexel University, our Sponsors, the Board of Trustees, the Regional Fair Directors, our Advisory Board, the professional societies and organizations, the judges, schools and teachers, all our hard working 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 program. I strongly believe that if we provide the opportunity for the natural curiosity of our young people to blossom, they will provide us with a future that is bright and prosperous.

Good Luck to you all,

Henry Disston  
PRESIDENT AND EXECUTIVE DIRECTOR



COMMONWEALTH OF PENNSYLVANIA  
OFFICE OF THE GOVERNOR  
HARRISBURG

THE GOVERNOR

**GREETINGS:**

**It gives me great pleasure welcome everyone gathered for the 70<sup>th</sup> annual Delaware Valley Science Fairs (DVSF).**

**Science and engineering have been cornerstones of the commonwealth's economy for generations. Educating and encouraging youth to continue this legacy is fundamental to prosperity and progress. I commend DVSF and its partners for endeavoring to provide inspiration and opportunity for participation in STEM fields. During this competition, students will demonstrate not only innovation in their projects, but tremendous ambition and dedication beyond the classroom. I applaud the students here today for their outstanding achievements, and I am certain they will continue to have a positive impact across the commonwealth and beyond for many years to come.**

**As Governor, and on behalf of all citizens of the Commonwealth of Pennsylvania, I am delighted to welcome you to the 70<sup>th</sup> annual science fair. Please accept my best wishes for continued success.**



A handwritten signature in black ink that reads "Tom Wolf".

**TOM WOLF**  
Governor  
April 3-5, 2018



# CITY OF PHILADELPHIA

OFFICE OF THE MAYOR  
215 City Hall  
Philadelphia, PA 19107  
(215) 686-2181  
FAX (215) 686-2180

JAMES F. KENNEY  
Mayor

April 3, 2018

Dear Friends:

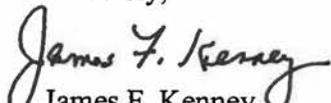
It is a pleasure to welcome you to the 70<sup>th</sup> annual Delaware Valley Science Fairs (DVSF) and Competition, which will be held from Tuesday, April 3 to Thursday, April 5, 2018.

I congratulate this organization for reaching such an impressive milestone and for the past seven decades of recognizing the impressive accomplishments of the students in our region who excel in these essential academic disciplines. As a national leader in science education and research, it is imperative that we properly educate and prepare our students for potential careers in Science, Technology, Engineering and Mathematics (STEM), and that Philadelphia's STEM education leaders devise creative and innovative ways to motivate children and youth to pursue their interest in science.

I commend the DVSF for hosting 1,000 students in grades 6 to 12 from Southeastern Pennsylvania, Southern New Jersey, and Delaware who will compete for over \$2 million in scholarship funds and prizes. These young people completed STEM research projects in 15 scientific categories and have already won their local fairs. The top students will advance to the Intel International Science and Engineering Fair in May where 1,500 students from across the nation and 65 countries around the world will compete for more than \$4 million in scholarships and prizes.

On behalf of the City of Philadelphia, I wish all of the competing students the very best of luck and salute them for their 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,

  
James F. Kenney  
Mayor

A number of organizations and individuals have contributed gifts of cash, services and facilities to the 2018 Delaware Valley Science Fairs. We extend our thanks to all of you, who through your support, have underwritten the costs of conducting this program.

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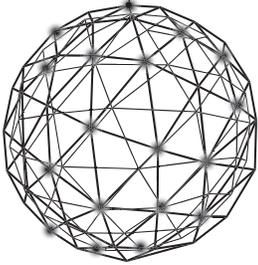
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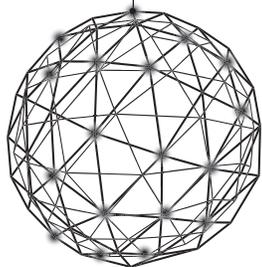
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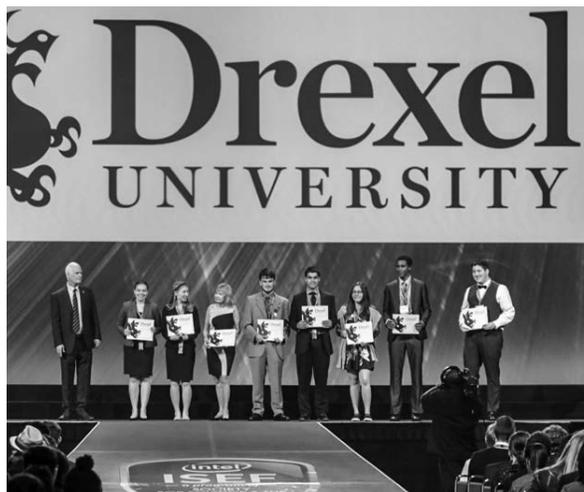
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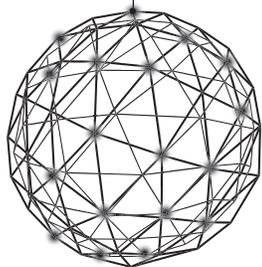
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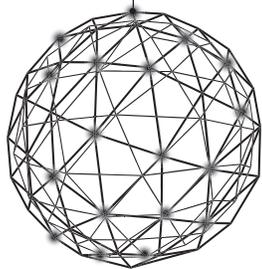
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Delaware Valley Science Fairs, Inc. (DVSF) was founded in 1949. Today, DVSF is a non-profit entity located at and partnering with Drexel University. It is now also one of the largest and oldest fairs in the country. The Fairs were designed as a vehicle 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 five separate competitions: with a fair each for 6th through 8th, 9th, 10th, 11th and 12th Grades. Society for Science and the Public provides a uniform structure and rules, and franchises all regional fairs at the high school level in the United States and in over 70 foreign countries.

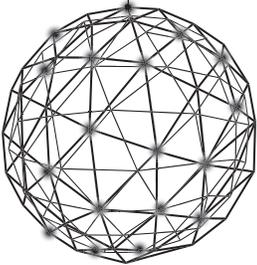
In the fall of each school year, teachers introduce the science fair program as an extracurricular activity or as part of the curriculum. Students choose from one of 15 categories (these categories are listed in the Table of Contents). Along the way, their topics and methodology are reviewed by the DVSF 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 69th Intel International Science and Engineering Fair (ISEF), to be held this year in Pittsburgh, Pennsylvania on May 12 through 19. At the ISEF, Delaware Valley's twelve high school medal winners, and first place high school team 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, Guam, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Luxembourg, Malaysia, Mexico, Northern Ireland, Norway, Pakistan, Palestine, Panama, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, 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 and Vietnam.

Teachers are selected from a pool of applicants to attend ISEF, along with our teacher award winners all expenses paid.

## FOREWORD



Karthik Yegnesh | Best in Mathematics Category at 2017 ISEF

# 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 won the right to compete in the DVSF by winning in one of thirteen regional fairs in Delaware, Southern New Jersey and Southeastern Pennsylvania.

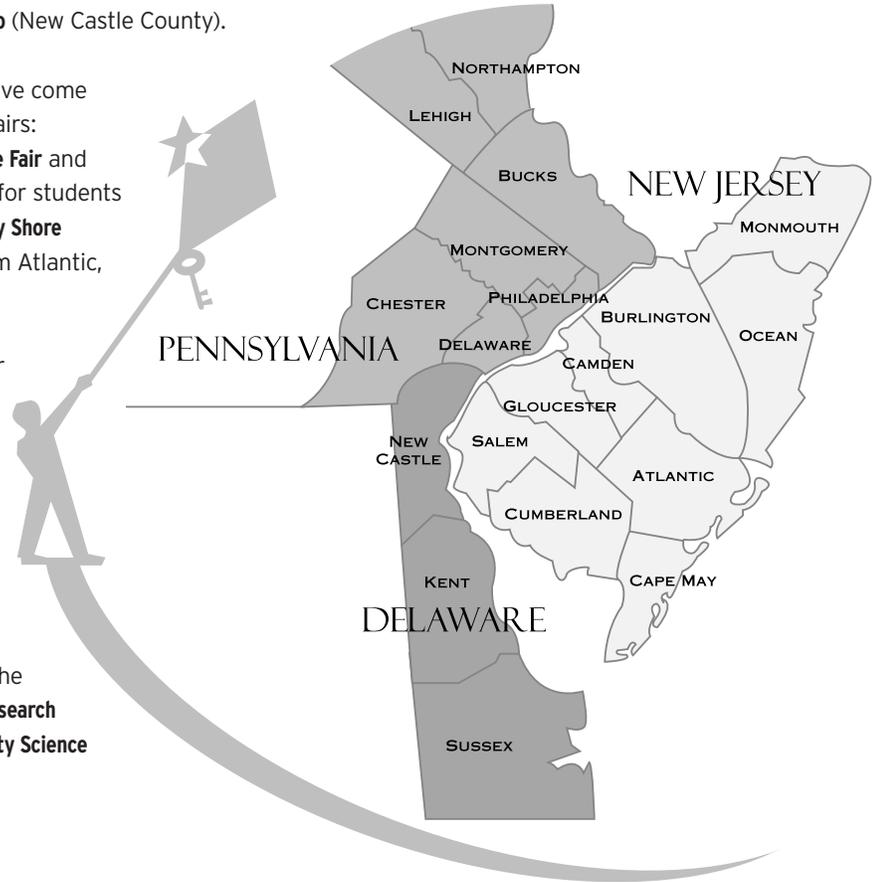
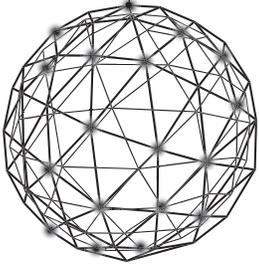
**Fair**, the **George Washington Carver Science Fair** for Philadelphia County, and the **Lehigh Valley Science and Engineering Fair** for Lehigh and Northampton Counties. Many students were honored as winners in earlier fairs held at their schools and by their school districts.

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

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

Students from Southeastern Pennsylvania have come from the **Bucks County Science Fair**, the **Delaware County Science Fair**, the **Montgomery County Science Research Competition**, the **Chester County Science**

### THIRTEEN REGIONAL FAIRS



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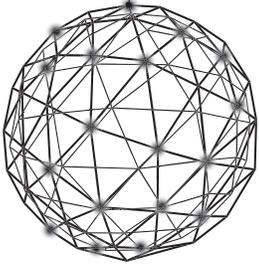
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The sponsors of the Delaware Valley Science Fairs (DVSF) provide several kinds of awards to student winners. These awards are intended to demonstrate the high value sponsors place on achievement by middle and high school students in STEM.

### 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 INTEL 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 69th ISEF in Pittsburgh, Pennsylvania from May 12th - 19th, 2018. The Medal Winners will compete at ISEF representing DVSF. The first place team project from the 9th through 12th grades will also receive an all expense paid trip and compete at ISEF. Selected teachers will also receive an all-expense-paid trip to the ISEF. Approximate value: **\$1,500 per person.**

### CATEGORY AWARDS

Each of the first place winners in the five 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

**Drexel University** will offer **five partial tuition** scholarships valued at \$8,000 per year to students in the 11th Grade for use at Drexel University when the student enrolls and is renewable for up to five years pending maintenance of a 3.0 grade point average and full-time status. All scholarships go into effect upon the recipients meeting university admissions criteria. Approximate value: **\$200,000**



**University of the Sciences** will award scholarships to first, second and third place winners of the 11th Grade Fair. Scholarships are to be allocated toward tuition only and become effective upon enrollment

in the incoming class of fall 2018 in any undergraduate or first-professional program offered at University of the Sciences. Each scholarship is renewable for up to four years provided the recipient is enrolled as a full-time undergraduate or first-professional student in good academic standing with the University. The awards will be distributed as follows:

1st Place Winners - \$15,000 per year  
2nd Place Winners - \$12,000 per year  
3rd Place Winners - \$10,000 per year

Approximate value: **\$1,924,000**

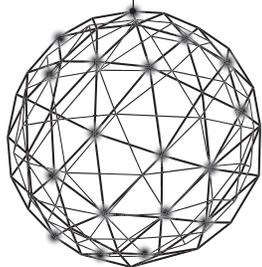
**The Dietrich W. Botstiber Foundation** offers an **\$8,000** unrestricted scholarship to a 12th grader with a project related to aviation. The student will be awarded a \$2,000 per year, for 4 years pending maintenance of full-time status.

**Science and Technology Award to Harrisburg University of Science and Technology:** The Science and Technology Scholar Award will cover up to \$15,000 for four (4) Academic Years at Harrisburg University of Science and Technology. This award is given to high school seniors and juniors participating in STEM fairs in the Commonwealth.

The university requires 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 area Professional Societies and Organizations. Many of whom give additional special awards 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

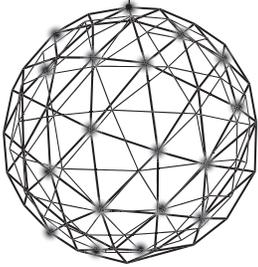


**DVSF FUNDRAISING PROGRAM**

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Contributions that local companies, foundations and community sponsors give go directly to benefit the students' participation and do not pay for salaries. Inquiry-based/hands-on learning works! Please help us nurture our future scientists and engineers.

**YES!  
I WANT TO SUPPORT DVSF**



**PLEASE COMPLETE THE FOLLOWING FORM AND MAIL CHECKS TO:**

Mr. Henry Disston  
*President and Executive Director*  
Delaware Valley Science Fairs, Inc.  
Drexel University  
3201 Arch Street, Suite 310A, Philadelphia, PA 19104  
For questions: 215-895-5840, disstonh@drexel.edu

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**CITY** **STATE** **ZIP**

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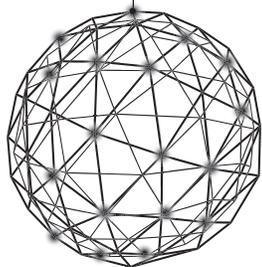
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**EMAIL ADDRESS**

Amount of contribution enclosed \$ \_\_\_\_\_

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

**You can now make a gift through PayPal through our website at [www.dvsf.org](http://www.dvsf.org)**

## 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, speology, 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.

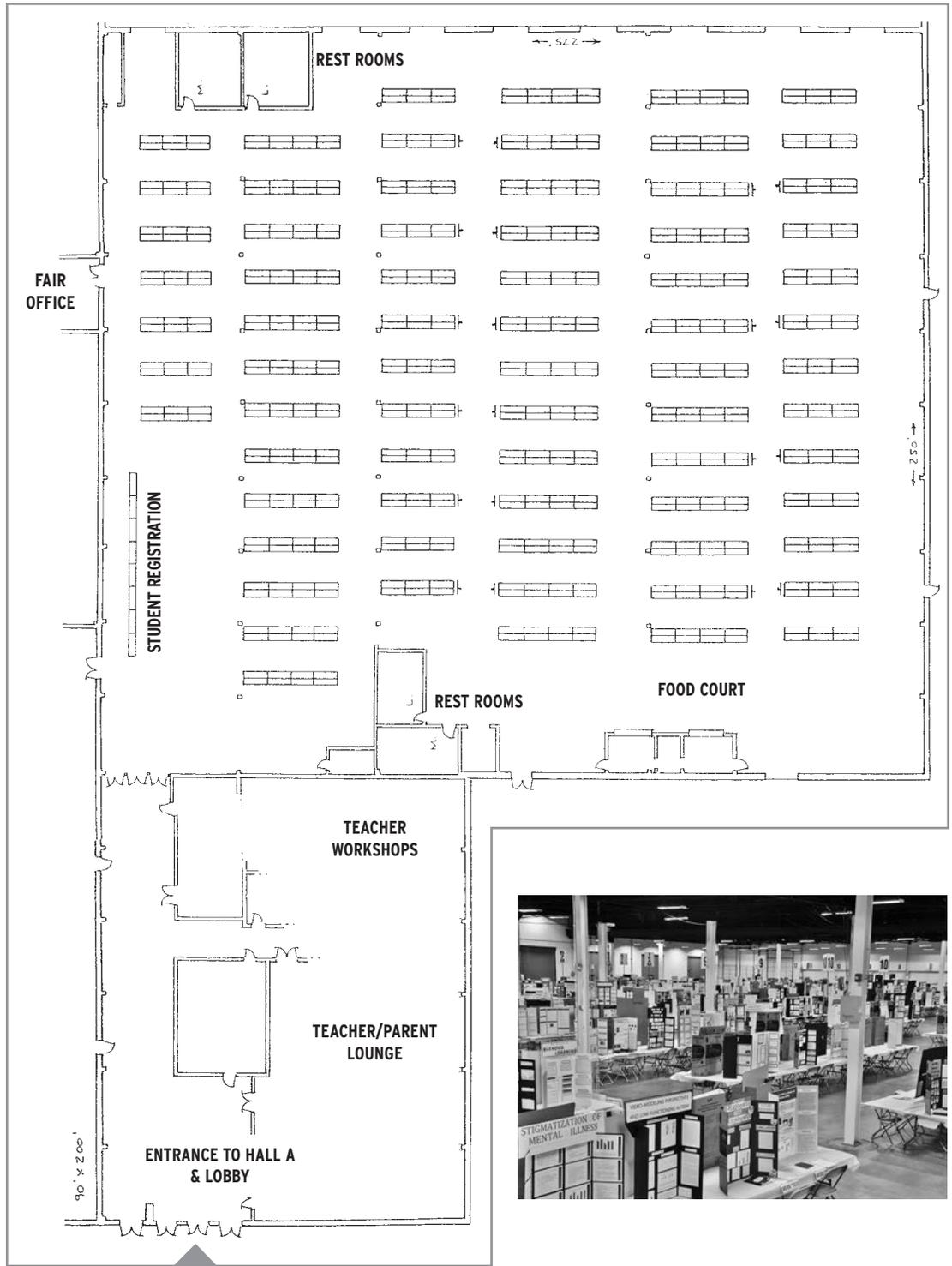
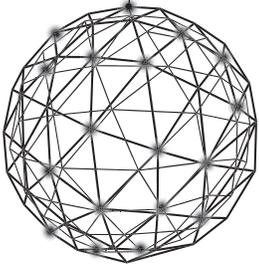
### **Team Projects**

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.

**THE GREATER PHILADELPHIA  
EXPO CENTER  
2018 FLOOR PLAN**



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

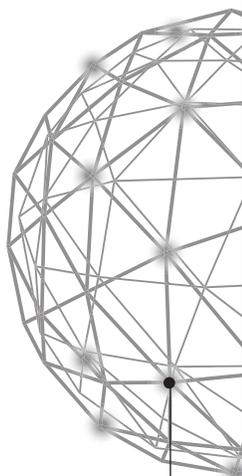
A0101	Tiffany Tieu	The Phenomenology and Neurobiology of ASMR	Cheltenham High School Russel Wolff
A0102	Adriana Nowrouzi	Analysis of "Risk vs. Reward" Mentality in Regards to Financial Investments	Marine Academy of Technology & Environmental Science John Wnek
A0103	Arathi Pillai	An Analysis of the Relationship Between Learning Styles and First Born Children	Springfield High School Mary Barry
A0104	Eric Celenti	Social Media's Impact on Stock Market Volatility	Holmdel High School Josephine Blaha/Sanu Daf
A0105	Louis Costello	Stress as a Motivational Factor in Incoming University Freshmen	Springfield High School Mary Barry
A0106	Miles Hanamirian	The Impact of Watching Nature on Mental Health	Germantown Academy Sarah Kesten

**BIOCHEMISTRY**

A0201	Simon Blanchard	The Nose Knows Cancer: An Analysis of the Stage of Ovarian Cancer Versus a Dog's Ability to Detect It in Plasma Samples	Bishop Shanahan High School David Blanchard
A0202	Helen Jiang	Myocardial Metabolite Changes in Diabetic non-Failing and Failing Hearts	Central High School Galeet Cohen
A0203	Lydia Hu	Small Molecule Inhibition of PD-L1 Immune Checkpoint Pathway	Central Bucks High School-West Mark Hayden
A0204	Reese Caldwell	Optical Control of Protein Assembly and Activity in Synthetic Cell-like Compartments	Conestoga High School Scott Best
A0206	Hamzah Shaikh	Effect of Various Chemicals on Planaria Regeneration: Insight on Cancer Cell Proliferation	Holmdel High School Josephine Blaha/Sanu Daf
A0207	Nadira Walker	Denaturation of Proteins through the Process of Heat	Carver High School for Engineering and Science Lisa Franchetti
A0208	Taylor Laing	The Effect of Hyper Salinity on Freshwater Daphnia Magna's Heart Rate/Lifespan	Cheltenham High School Russel Wolff

**BOTANY**

A0301	Sabrina Green	Multi-Fruiting Plant from Graft of Tomato and Potato Plants	Council Rock High School-North Terese Grateful
A0302	Joyce Wang	Analyzing the Effects of a Novel Pine Needle Extract on the Growth of Bacterial Colonies and Planarians	Holmdel High School Josephine Blaha/Sanu Daf
A0303	Jeffrey Fishman	Developing a Machine-Learning Model to Predict SM Genes	Upper Dublin High School Megan Gallagher
A0304	Satvik Kakkar	Evaluation and Application of Abiotic Growth Inhibition in Horticulture	Methacton High School Robert Helm
A0305	Wallis Toscarelli	Analyzing the Antimicrobial Properties of Pine Bark Extract	Holmdel High School Josephine Blaha/Sanu Daf
A0306	Grace Cocanower	Macronutrient Concentrations in Leafy Greens When Grown in Soil vs. an Aquaponics System	Marine Academy of Technology & Environmental Science John Wnek



2018 12TH GRADE ENTRIES

PRESENTER	EXHIBIT	SCHOOL & SPONSOR
A0307 Sophia Swartz	Molecular-Based Genotypic Selection for Anthocyanin in <i>Lactuca sativa</i> , Year Three	Central Bucks High School-South Brian Testa
A0308 Megan Coolahan	Effects of Arbuscular Mycorrhizal Inoculation on Growth, Yield and Antioxidant Levels of Carrots and Chile Peppers	Council Rock High School-North Terese Grateful
A0309 Erin Quay	Investigating the Impact of Light Duration on the Metabolic Output of CO <sub>2</sub> in <i>G. Spirogyra</i>	Cherry Hill High School East Nicholas Wright
A0310 Yee Chan	Testing the Effect of Plant Hormones on <i>Chlorophytum Comosum</i>	Parkland High School Michael Post

## CHEMISTRY

A0401 Tori Robbins	Spherification of Vegetable Oil Using Agar and the Effect of Sodium Chloride Water	Robbins Homeschool Carole Robbins
A0402 David Li	Testing the Properties of Shear Thickening Fluids	Germantown Academy Sarah Kesten
A0403 Sophia Breslin	Biophysical Characterization of Protein-Zinc Interactions	Dock Mennonite Academy High School Kellena Smith
A0404 Jeffrey Zhao	Analyzing Thermal Regeneration of Ammonia-Based Battery	Council Rock High School-North Terese Grateful
A0405 Omar Cruz	Protein Stability in Ionic Liquid Solutions	Bridgeton High School Claudia Angle
A0406 Samantha Testa	An Analysis of Optical Brightening Agents	Marine Academy of Technology & Environmental Science John Wnek
A0407 Anjali Chakradhar	Design and Evaluation of Boron-based Anti-cancer Agents	High Technology High School Michael Roche

## COMPUTER

A0501 Ian Kuo	Natural Language Processing using Machine Learning	Central Bucks High School-West Mark Hayden
A0502 Megha Patel	Which C++ Program Gets an A++?	Cape Henlopen High School William Geppert
A0503 Anoop Bhat	An All-in-One Atmospheric Analyzer	North Penn High School Melody Leithold
A0504 Amir Shanehsazzadeh	DIHNOSIR: A Semiautonomous Density-Independent DBSCAN-based Clustering Algorithm	Upper Merion High School Peter Vreeland
A0505 Mark Muscara	Design of Virtual Reality Simulation for Exposure Therapy	Council Rock High School-North Terese Grateful
A0506 Jacob Guynee	Forecasting Stock Returns using Sentiments Expressed on Twitter	Council Rock High School-South Terese Grateful

## EARTH & SPACE SCIENCES

A0601 Kathryn Zic	Microplastic Analysis in Sand and Water of NJ Coast	The Marine Academy of Science and Technology Daniel Wieczorek
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## ENGINEERING

A0701 Sarah Johnson	The Implementations and Impact of a Geo-tracking System	Wise and Pure Senior High School Audrey Johnson
A0702 Pradyot Yadav	Development of a Smart LED Lighting System with Zero Standby Power	North Penn High School Melody Leithold

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
A0703 Holland Moriarty	Bioceramic/Polymer Composites Used as Synthetic Bone Grafts	Council Rock High School-North Terese Grateful
A0704 Avery Cunningham	Low-Cost Aerial Plant Health Analysis with Infrared Photography	Lacey Township High School John Kuzan
A0705 Samantha Kantner	Self-opening Solar Space Panels	Upper Darby High School Roseann Burns
A0706 Mark Aviel Gomba	Moving With the Winds (Hurricane- Proof Buildings)	Bishop Shanahan High School Melanie Gomba
A0707 Michelle Ampofo	Backyard Bullet Train	Cheltenham High School Russel Wolff
A0708 Nathan Wong	Testing the Energy Output of Different Electrodes in MFC	Germantown Academy Sarah Kesten
A0709 Shehbeel Arif	Cancer Diagnosis	Central High School Galeet Cohen
A0710 Omar Swidan	Optimizing an Artificial Pollination Using an RGB Sensor and a Convex Lens	Central High School Galeet Cohen
A0711 Britney McCauley	Which Mint's A Must?	Salem County Vocational Technical School District Carly Chaapal
A0712 Tommi Viola	Practical Aluminum-Air Battery	Council Rock High School-North Terese Grateful
A0713 Collin Schmidt	How Substrates Impact the Electromagnetic Properties of Metals	Central Bucks High School-West Mark Hayden
A0714 Yihan Wu	Generating Energy from Thermoelectric Roadways	High Technology High School Michael Roche

## ENVIRONMENTAL

A0801 William Chen	Evaluation of Two Methods for Remediating Antibiotic Water Pollutants	Methacton High School Robert Helm
A0802 Rory Hogan	The Role of Native Plants in the Uptake of Nitrates from Runoff	Toms River High School South Christine Girtain
A0803 Sweta Prasad	Alternative Herbicides to Glyphosate	Unionville High School Sandra Litvin
A0804 Emily Santana	Micro-Plastics: What is Secretly Hiding in Your Food?	Cherry Hill High School West Brian Grillo
A0805 Daniel Gordon	Determining Water Toxicity Using Daphnia magna	Upper Darby High School Roseann Burns
A0806 Sydney Iseminger	Concrete Facts	Bishop Shanahan High School Darlene Iseminger
A0807 Amanda Plichta	A Novel, Eco-Friendly Remediation of Lead Contaminated Water	Council Rock High School-South Matthew Ciaudelli

## MATHEMATICS

A0901 Jordan Murdock	Modeling Meteorological Conditions in a Dynamic Coastal Region	Marine Academy of Technology & Environmental Science John Wnek
A0902 Elizabeth Marlin	Developing and Testing an Integral Calculator	Our Lady of Mt. Carmel Homeschool John Marlin
A0903 Richard Ninness	Spectral Earth Arithmetic Geometry and Chromatic Heirarchy	Central High School Galeet Cohen

**PRESENTER**

A0904 Karthik Yegnesh

**EXHIBIT**

Braid Groups on Triangulated Surfaces and Singular Homology

**SCHOOL & SPONSOR**Methacton High School  
Robert Helm

A0905 Dario Cabal

Assessment of Local Drug Delivery into a Tumor Based on the Permeability of the Tissue

Central Bucks High School- West  
Mark Hayden**MEDICINE/HEALTH**

A1001 Jada Peters

A Modern Approach to Melanoma

Carver High School for Engineering and Science  
Liz Duperret

A1002 Emileigh Zane

The Effect of Caffeine on Regeneration In Planaria

Penns Grove-Carneys Point High School  
Shannon Tyson

A1003 Ishan Shah

Induction of HBV Hepatocellular Death Using Apoptotic Agents

Central Bucks High School- West  
Mark Hayden

A1004 Karna Nagalla

Creating a Clinically Scalable Gene Delivery Product Utilizing Exosomes and Affinity Based Purifications

Charter School of Wilmington  
Rose Lounsbury

A1005 Benjamin Antill

A Geographic Analysis of Cancer Nationwide

Souderton Area High School  
Karen Wolfe

A1006 Emily Tran

The Effects of Athletic Performance Enhancement Products

Cherry Hill High School East  
Nicholas Wright

A1007 Jonathan Ardit

Establishment of a Traumatic Brain Injury Model in Dugesia Dorotophala

Owen J Roberts High School  
Laura George

A1008 Jeremy Wang

A Novel Machine Learning and Group-Lasso Based Screening Method for Liver Cancer

Methacton High School  
Robert Helm**MICROBIOLOGY**

A1101 Erica Wu

Plastic Polymer Degradation by Waxworms (*Galleria mellonella*)Holmdel High School  
Josephine Blaha/Sanu Daf

A1102 Seth Edwards

A Comparative Study Between Bacterial Growth on Sheep and Non Sheep Acromyrmex Ants

Toms River High School South  
Christine Girtain

A1103 Molly Welby

Going Bananas for Resistance to Xanthomonas Wilt Disease

The Perkiomen School  
Melinda Irven

A1104 Elektra Benkrid

Effect of Extracellular pH on Genetic Transformation Frequency

The Perkiomen School  
Melinda Irven**PHYSICS**

A1201 Andrew Chen

Seeing the Unseeable: Cosmic Ray Detection Using Proportional Drift Tubes

Moorestown High School  
Sean Watson

A1202 Ryan Wu

Qubit Dynamics Modulated by a Harmonic Oscillator

High Technology High School  
Michael Roche

A1203 Benjamin Wilson

To What Extent Does Frequency Affect the Amplitude of Sound?

Emmaus High School  
Brent Landrum

A1204 Nicole Khusid

Mobility of Magnetic Nanoparticles in an Agarose Gel Medium

Council Rock High School-North  
Terese Grateful**ZOOLOGY**

A1301 Kiernan Bates

Maternal Transfer of Methyl Mercury in *Squalus Acanthias*The Marine Academy of Science and Technology  
Daniel Wiczorek

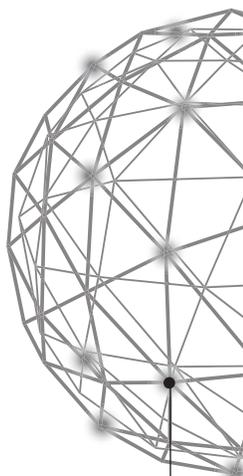
A1302 Alaina Perdon

Bacteria Presence in Wild vs. Captive Malaclemys Terrapin

Marine Academy of Technology & Environmental Science  
John Wnek

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

B0101	Alayna Hernandez	Using Neurotransmitter to Alter Time Perception	Charter School of Wilmington Michael Katz
B0102	Christine Hutchinson	Improving Academic Performance	Parkland High School Michael Post
B0103	Jacob Berkowitz	Do Changes in Perceived and Measured Stress Correlate in High School Students?	Cherry Hill High School East Nicholas Wright
B0104	Katelyn Fahr	The Effect of Training in Fish Behavior	Penns Grove-Carneys Point High School Shannon Tyson
B0105	Brigit Joseph	The Growth of Fear - Part IV	North Penn High School Melody Leithold
B0106	Nashita Ali	Implicit Bias, Experience, and Perception of Crime on Teens	Cherry Hill High School East Nicholas Wright
B0107	Larkin Dhillon-Richardson	Does the Way You Wake Up Affect How Much You Remember Your Dreams?	Springside Chestnut Hill Academy Ann Zalasky
B0108	Amelia Shaddinger	Effect of Extrinsic Motivation on Test-Taking	Upper Dublin High School Dawn Edelman
B0109	Matthew Liu	Effect on <i>Caenorhabditis elegans</i> Activity from Exposure to Various Colored Environments Measured by Body Bends	Biotechnology High School Ann MacLean
B0110	Vivek Adury	Studying the Effects of the Perception of Racism	Liberty High School Melissa Waldron
B0111	Brandon Sharkey	The Role of Immersivity in VR Therapy for Pain Management	Central High School Galeet Cohen
B0112	Hayden Stephan	Don't Sleep on Saliva	Springside Chestnut Hill Academy Ann Zalasky
B0113	Kyle Goldrick	Pareidolia Faces and Their Influence on Society	Central Bucks High School-West Mark Hayden
B0114	Ria Swaminathan	The Short and Long Effects of Deep Breathing	Charter School of Wilmington Jennifer Toner



2018 11TH GRADE ENTRIES

**BIOCHEMISTRY**

B0201	Seth Donnelley	Using the Protein Dsup From the Tardigrade <i>Ramazzottius varieornatus</i> to Mitigate the Effects of UVC Irradiation on Cultured Cells	Donnelley Homeschool Judith Donnelley
B0202	Sameer Erramilli	Analyzing Protein Sequences from Thermophilic Prokaryotes: Keys to Survival at Eighty Degrees Celsius	Holmdel High School Josephine Blaha/Sanu Daf
B0203	Willam Gatti	The Effects of Different Types of Natural Sweeteners on Blood Glucose Levels	Bishop Shanahan High School Jennifer Gatti
B0204	Priyanka Hanumaihgari	Novel Target for Drug Therapy in Post Traumatic Epilepsy	Parkland High School Michael Post
B0205	Sindhura Siddapureddy	The Democratization of Computational Chemistry	Central Bucks High School-West Mark Hayden
B0206	Mikayla Horvath	Antimicrobial Properties of Oregano Extracts	Central Bucks High School-East Robert Meletti

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
B0207 Arya Sharma	Effects of Calcium Chloride on the Ability of Physarum Polycephalum to Complete a Maze	Biotechnology High School Ann MacLean
B0208 Rebekah Varghese	The Synthesis of Aspirin with Natural Catalysts	Methacton High School Robert Helm
B0209 Melissa Hernandez Reyes	Novel Green Synthesis of Substituted Sulfonylthioureas and Sulfonylureas	Bridgeton High School Claudia Angle
B0210 Auciell Hicks	Surreptitious Sugars	Hicks Homeschool Anthony Hicks
B0211 Jordan Mitchell	How Do Fruit Flies Detect Their Food Without Their Sense of Smell?	Springside Chestnut Hill Academy Scott Stein
B0212 Hannah Xiao	A Human Mutagenic Assay Using Mammalian Cells and Adenovirus	Upper Dublin High School Joanne Lilliendahl
B0213 Divisha Singh	Using Cytokines To Speed Up hMSC Motility	Parkland High School Michael Post

## BOTANY

B0301 Claire Momjian	The Effect of Low Frequency Sound Waves on Banana Ripening	Springside Chestnut Hill Academy Scott Stein
B0302 Margaret Tran	Mung Bean Sprout Growth in Relation to Salinity of Water	Charter School of Wilmington Kris Anania
B0303 Samir Tandon	Resonance Agriculture: An Approach to Future Farming	Great Valley High School Rajat Tandon
B0304 Kevin Zhu	The Effect of Gibberellins on Plant Growth	Upper Dublin High School Joanne Lilliendahl
B0305 Preeti Krishnamani	Effects of Silicon Amendments on Concentration and Adsorption Properties of Iron-oxides in Paddy Soils	Charter School of Wilmington Rose Lounsbury
B0306 Benjamin Seing	Benefits of Hydroponics	Science Leadership Academy BJ Enzweiler
B0307 Ian Abrahams	Effect of Ammonium Nitrate and Fertilizer on Chlorophyll Production in L. Perenne	Wissahickon High School Christine Brandt
B0308 Nahla Turner	The Correlation Between Banana Ripeness, Color, and Sweetness	Springside Chestnut Hill Academy Scott Stein

## CHEMISTRY

B0401 Austin Mathew	Natural Antacids vs. Synthetic Antacids	George Washington High School Anita Abraham
B0402 Gabriel Wingert	Investigating the Electrical Conductivity of Varied Substrates with Fe Atomic Layering at Different Production Temperatures	Central Bucks High School-West Mark Hayden
B0403 Sai Mamidala	Electrochemical Oxidation of Formate on a Pd-Ni/C Nanoparticle Catalyst for Renewable Energy Conversion and Storage	Garnet Valley High School Hillary Lockard
B0404 Jialin Xin	Fermentation of Plants as Biofuels	Springside Chestnut Hill Academy Ann Zalasky
B0405 Christopher Chen	Cancer Detection Using DNA Based Logic Gates	Charter School of Wilmington David Stover
B0406 Sydney Breslin	Modifying pH Sensitive Polymeric Coatings by Ionization	Dock Mennonite Academy High School Kellena Smith
B0407 John Murnen	Accuracy of Reported Caffeine Quantities in Caffeinated Coca-Cola®	Central Bucks High School-West Mark Hayden

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
B0408 Angie Kuang	Which Polymorph of Acetaminophen is in Tylenol®?	Methacton High School Robert Helm
B0409 Elizabeth Sheets	Which Version of Blueberry Almond Milk Do Consumers Prefer?	Salem County Vocational Technical School District Carly Chaapal
B0410 Annabelle Laughlin	Isomerization Rate of Methyl Red	Upper Dublin High School David Price
B0411 Russel Volosov	The Effect of Molarity and Temperature on Electroplated Metals	George Washington High School Anita Abraham
B0412 Benjamin Dubner	Overexpression of a Cell Surface Protein, Stranded at Second (SAS), and its Genetic Interactions	Charter School of Wilmington Rick Schuder

## COMPUTER

B0501 Tiantian Fang	A Novel Lung Cancer Detection Method Based on Computer Deep Learning	The Hill School William Enos
B0502 Samuel Bushra	Analysis of Performance, Cost, and Efficiency Among Different CPU Cooling Devices	Bushra Homeschool Elizabeth Bushra
B0503 Frank D'Agostino	Creating an Objective Computer Program to Reduce Human Bias in Conjectures	Marine Academy of Technology & Environmental Science John Wnek
B0504 Aakash Pillai	Utilizing Machine Learning to Classify Cancerous and Noncancerous Cells	Moorestown High School Sean Watson
B0505 Mohammed Algburi	How Does the Effect of Clock Speed on the Performance of Processors	Northeast High School James Finely
B0506 Nathanael Costa	Creating an Effective and Accessible Math Scripting Application	Carriagebrooke Academy Roy Costa
B0507 Jason Qiu	Deep Learning based Predictive Modeling of Alzheimer's Disease Progression	Methacton High School Robert Helm
B0508 Mark Klinchin	Optimizing A Neural Network	Lower Moreland High School Richard Becker
B0509 Rowan Goudy	The Effect of the Frequency of Mutation on the Evolution of a Simulated Population	Springside Chestnut Hill Academy Scott Stein
B0510 Adithya Paramasivam	Investigating a Novel Immunotherapeutic Approach to Diffuse large B-cell Lymphoma through ANN-based NeoAG Prediction in MHC I Receptor Immune Escape	High Technology High School Michael Roche
B0511 Cyrus Majd	Developing a Novel Dynamic Intrusion Remediation System for Datacenter Storage DOS Attacks with Virtual Machine Migration and Traffic Engineering	Holmdel High School Josephine Blaha/Sanu Daf
B0512 MaryElizabeth Greeley	Access: Search Engine for the Visually Impaired	Central High School Galeet Cohen

## EARTH & SPACE SCIENCES

B0601 Kara Kniezewski	The Effects of Martian Soil Simulant on Radish Plant Growth	Springside Chestnut Hill Academy Scott Stein
B0602 Bern Popky	Aliens on Earth - Could Halobacterium Survive on Another Planet?	Springside Chestnut Hill Academy Scott Stein
B0603 Savannah Miller	Determining the Diameter of the Core of the Earth	Upper Darby High School Roseann Burns
B0604 John Rybnik	Comparing the Effect of Layered Substrates on PWave Transmission	Upper Darby High School Roseann Burns

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
B0605 Sanjit Shelukar	Natural Alternatives for Preservation of Perishable Foods	Wissahickon High School Terry Jarvis
B0606 Ashish D'Souza	Using Supervised Machine Learning Algorithms for Accurate and Efficient Ground-level Ozone Predictions	Polytech High School Mohammad Amir Khan
B0607 Prachi Soni	TransPHormation	Parkland High School Michael Post
B0608 Terence Devlin	How Does Nanosilver in Consumer Goods Affect Pond Life?	Central Bucks High School-West Mark Hayden
B0609 Ann Sinclair	Exploring the Moon Illusion	Gwynedd-Mercy Academy Kelly O'Neill
B0610 Ayomikun Gbadamosi	Investigation of the Correlation Between Coronal Mass Ejections and the Solar Sunspot Cycle	Marine Academy of Technology & Environmental Science John Wnek
B0611 Matt Nieves-Hoblin	Mars' Habitability	Central Bucks High School- West Mark Hayden
B0612 Dung Nguyen	Investigating the Role of Root Colonization of AM Fungi in Carbon Sequestration of Soils	Marine Academy of Technology & Environmental Science John Wnek
B0613 Hannah Lewis	Effect of CME Kinetic Energy on the Magnitude of Earth's Magnetic Field	Souderton Area High School Karen Wolfe

## ENGINEERING

B0701 Isha Mohapatra	Development of an Optimum Insulating Brick: Application of the Taguchi Method for Experimental Design	Moravian Academy Gabriella Dee
B0702 Ryan Luo	The Use of AI Algorithms to Automatically Identify Premature Atrial Contractions from Electrocardiogram Recordings	Biotechnology High School Ann MacLean
B0703 Sunil Narayan	The Effect of Membrane Pore Size of Hydrophobic Porous Membrane on the Rate of Water Vapor Flow Through the Membrane	Charter School of Wilmington Glenn Heffner
B0704 Aaron Liao	Triboelectric Nanogenerators and Kirigami	North Penn High School Melody Leithold
B0705 Murong Yao	The Strategies of Logistic Allocation and Distribution	Parkland High School Michael Post
B0706 Kailyn Seixas	Creating Water Using a Catalytic Converter	Liberty High School Melissa Waldron
B0707 Toni Baker	Which Version of Asian Pear Butter Do Consumers Prefer?	Salem County Vocational Technical School District Carly Chaapal
B0708 Harsha Santhanam	Sparse Reconstruction for the Location of Flaws in Tubular Structures	Methacton High School Robert Helm
B0709 Vince Tran	Determining the Optimal Trailer Tail Position and Size	Upper Darby High School Roseann Burns
B0710 Alexander Clapham	Improving the Heat Resistance of Cement	Upper Dublin High School Dawn Edelman

PRESENTER	EXHIBIT	SCHOOL & SPONSOR
<b>ENVIRONMENTAL</b>		
B0801 Kelly Orr	The Most Effective Method for Cleaning Oil from Feathers	Council Rock High School-North Terese Grateful
B0802 Aparna Dev	The Effect of Glass Tube Structure on Temperature	Council Rock High School-North Terese Grateful
B0803 Connie Liu	pH and Duckweed's Ability to Phytoremediate	Upper Dublin High School Joanne Lilliendahl
B0804 Marie Smith	Determining the Effect of Nanosilver on Aquatic Organisms	Upper Darby High School Roseann Burns
B0805 Robyn Banger	Building Beaches	Pennsville High School Robert Belding
B0806 Andrew Colbert	The Effect of Nitrogen Fertilizer Pollution on the Cardiac Frequency of Daphnia magna and Bioremediation of Nitrogen Fertilizer by Aquatic Plants	Biotechnology High School Ann MacLean
B0807 Anna Dewey	Utilizing Simple Absorption Methods and Continuous Flow Filtration Methods on Coffee Ground Bioclassiomiceric Foam Filters to Remove Metal Ions from Water	Academy of Notre Dame de Namur Daniel Cushing
B0808 Melanie Kaminsky	The Relationship Between the Width of a Water Source and its Dissolved Oxygen Concentration	George Washington High School Anita Abraham
B0809 Sharon Xu	Toxicity Assessment of Silver Nanoparticles Using Bacterial and Daphnia magna Bioassays	Marine Academy of Technology & Environmental Science John Wnek
B0810 Alexander Koscica	Algae Growth vs. Frequency of Light	Springside Chestnut Hill Academy Alexander Koscica
B0811 Elliott Cunningham	Comparing Carbon Dioxide Levels in Areas with Traffic Calming Against Those Without	Springside Chestnut Hill Academy Scott Stein
B0812 Elizabeth Stifel	Can Daphnia magna be Introduced to Highly Eutrophic Water?	Moravian Academy Gabriella Dee
B0813 Tulsi Patel	Novel Production of Bioethanol from Solid Waste Using Cellulase	Methacton High School Robert Helm
B0814 Amy Ouyang	Enhancing the Quality of Biodegradable Bioplastics	Methacton High School Robert Helm

## MATHEMATICS

B0901 Jason Chee	Numerical Integration with Monte Carlo and Riemann Sum Using SAS	Germantown Academy Sarah Kesten
B0902 Baiting Zhu	A Study of Alzheimer's Disease in U.S. Senior Population	Westtown School Leslie Barr
B0903 Zach Duthie	Understanding the Factors that Drive CO2 Emissions: A System Dynamics Approach	Upper Dublin High School Mike Morgan
B0904 Walker Anderson	Is Tapa NP-Complete?	Central Bucks High School-West Mark Hayden
B0905 Brianna Patnaude	Derivation of an Optimally Designed Depth Sampler to Effectively Measure Dissolved Oxygen	Marine Academy of Technology & Environmental Science John Wnek
B0906 Tony Tian	Mathematical Models for Forest-fire Prediction	George School Chris Odom
B0907 Fatima Rabihi	The Math of Snowflakes	Carver High School for Engineering and Science John Ciccarelli

**PRESENTER****EXHIBIT****SCHOOL & SPONSOR****MEDICINE/HEALTH**

B1001	Nehali Gupta	DKA Diagnosis: A Novel Method For The Detection Of Early Onset Diabetic Ketoacidosis	Parkland High School Michael Post
B1002	Shania Hall	The Effect of Signalling Compounds on Daphnia	Penns Grove-Carneys Point High School Shannon Tyson
B1003	Henna Purewal	Novel Cancer Treatment: The Effect of Alpha Lipoic Acid on <i>S. cerevisiae</i> Proliferation	Biotechnology High School Ann MacLean
B1004	Anna Szeto	The Effects of Caffeine on <i>Drosophila Melanogaster</i> Memory	Council Rock High School-North Terese Grateful
B1005	Praneel Rajkumar	The Effects of Intermittent Fasting on Growth Hormone Levels, Specifically IGF-1	Parkland High School Michael Post
B1006	Anoushka Gidh	Increased Cell Inflammation Observed in CD40 Mice with Multiple Sclerosis	The Baldwin School Margaret Epstein
B1007	Gaea Lawton	Toxicological Effects of Perfluoropentanoic Acid, and Perfluoro-2-propoxypropanoic Acid on Human Organ Cells	PA Leadership Charter School Sheila Romine
B1008	Kianah Watson	Which Acne Treatment Prevents the Growth of <i>S. epidermidis</i> ?	Springside Chestnut Hill Academy Scott Stein
B1009	Mehar Sharma	Sun Protectant Competence Involving Ultraviolet Light-Induced Mutations in <i>Serratia Marcescens</i>	Central Bucks High School-West Mark Hayden
B1010	Purab Kothari	Efficacy of Diacetyl as a Chemoattractant and Its Effects on the Lifespan of <i>C. elegans</i>	Biotechnology High School Ann MacLean
B1011	Aditya Pillai	Analyzing the Effectiveness of Flu Vaccines	Moorestown High School Sean Watson
B1012	Yecena Lopez-Cruz	The Effect of Alcohol on Regeneration in Blackworms	Penns Grove-Carneys Point High School Shannon Tyson
B1013	Peter Kapp	Does the Location of Defrosting Meat Affect Bacterial Growth?	Springside Chestnut Hill Academy Scott Stein
B1014	Julienne Chaqour	Design and Utilization of Macrophage and Endothelial Cell Co-Culture System as a Model of Vascular Regression	High Technology High School Michael Roche
B1015	Allison Yang	Determining G-Quadruplex Formation in the Androgen Promoter Region	North Penn High School Melody Leithold
B1016	Wade Poon	Analysis of Beta-Glucan Contents in Mushroom Commercial Species <i>Oral Stipe</i> and <i>Pileus</i> Section of <i>Pleurotus Ostreatus</i> by H <sub>2</sub> SO <sub>4</sub> Procedure	Charter School of Wilmington Chris Kramer

**MICROBIOLOGY**

B1101	Chinyere Anucha	Evaluating Anti Body Responses	J.R. Masterman School Kathleen Tait
B1102	Nichole Stettner	What is the Effect of Cleaning Products on <i>Escherichia coli</i> Grown In Different Temperatures?	Moravian Academy Gabriella Dee
B1103	Jason Chen	Development of a Specific HBV Detection Assay Suitable for Peripheral Detection of cccDNA	Central Bucks High School-West Mark Hayden
B1104	Shivanand Peri	Effectiveness of Plant Extracts as Bacterial Inhibitors	Council Rock High School-North Stacey Gould
B1105	Emma Yeatman	The Effect of <i>P. Fluorescens</i> on Pant Yield as Compared to a Commercial Inoculant	Springside Chestnut Hill Academy Scott Stein
B1106	Connor Laux	Varying Sugar Types on Cellular Respiration in <i>Saccharomyces cerevisiae</i>	Wissahickon High School Christine Brandt

PRESENTER		EXHIBIT	SCHOOL & SPONSOR
B1107	Ester Teper	An Experiment on the Efficacy of Using Probiotic and Antibiotics to Enhance <i>Drosophila melanogaster</i> Survival of Pathogen Exposure	Biotechnology High School Ann MacLean
B1108	Brenda Krishanwongso	CRISPR vs. Bacterial Transformation Success Rate	Central High School Galeet Cohen
B1109	Jenna Hunt	Assessment of Different Forms of Carvacrol on Parasitic Nematodes	Charter School of Wilmington Glenn Heffner
B1110	Frederick Rajasekaran	A Finite Element Model of Single Cell Traction Forces in PEG-DA Hydrogels	Unionville High School Sandra Litvin
B1111	Shichen Nie	Biological Screening of ChemDiv Smart Compound Library Against HBV Surface Antigen	Central Bucks High School-East Judy Elinow
B1112	Satyam Ghodasara	Finding a New Antimicrobial	Germantown Academy Sarah Kesten
B1113	Tara Balu	Viewing Biofilm Formation After <i>Azadirachta Indica</i> Application on Human Teeth	Charter School of Wilmington Conrad Rice
B1114	Judy Zhong	Lytic Induction of Phage phi3T by Genetically Modifying the Arbitrium System	Upper Dublin High School Joanne Lilliendahl

## PHYSICS

B1201	Miriam Shera	Fluid Dynamics of Diamagnetism	Shera Homeschool David Shera
B1202	Elizabeth Berzin	Modeling Lenses with Transformational Optics	Lower Moreland High School Richard Becker
B1203	John P. Garcia Del valle	Solar Ovens	Vineland High School Luzmila Badillo
B1204	Saman Verma	Testing the Existence of Chaotic Motion Over Time in a Double Pendulum	Charter School of Wilmington David Stover
B1205	Nathan Bovankovich	The Effect of Vortex Generators on the Critical Angle of Attack of a Wing	Charter School of Wilmington David Stover
B1206	Valmiki Kothare	On the Dynamic Control of Quadrotors	Parkland High School Michael Post
B1207	Matthew Billemeier	The Effect on the Magnetism of Substrates with Fe Deposited Atomic Layers	Central Bucks High School-West Mark Hayden
B1208	Anna McDonald	Measuring Sugar Content of a Liquid with a Laser Pointer	Villa Joseph Marie High School John Gentile
B1209	Joshua Jones	Artist of Re-entry	Carver High School for Engineering and Science Kevin Hailey
B1210	Amber Tousett	Domino Effect	Mariana Bracetti Academy Andrew Bioglioli
B1211	Sathya Edamadaka	RMPC: A Novel Cost-Effective Approach to Raising Photovoltaic Efficiency through Tunable Plasmonic Nanostructures	High Technology High School Michael Roche
B1212	Jonah Carver	Effect of Signal-Blocking Materials on RFID Signals	Upper Dublin High School Rick Schmidt
B1213	James Phillips	Quantum Levitation	Mariana Bracetti Academy Andrew Bioglioli
B1214	Yuxin He	Robot Gear Ratios	Cape Henlopen High School William Geppert

PRESENTER	EXHIBIT	SCHOOL & SPONSOR
<b>ZOOLOGY</b>		
B1301 Penny Demetriades	A Comparative Analysis of the Prevalence of Pleurogonius malaclemys Parasitic Infection of Ilyanassa obsoleta in Barnegat Bay, New Jersey	Marine Academy of Technology & Environmental Science John Wnek
B1302 Paige Aldred	Diving Into the Bioluminescence of Dinoflagellates	Owen J Roberts High School Terry Aldred
B1303 Brittany Ruiz	Is Memory Inherited?	Central High School Galeet Cohen
B1304 Sarah Edelson	The Effect of Ethanol and Caffeine on the Rate of Planaria Regeneration Stages	Springside Chestnut Hill Academy Scott Stein
B1305 Johanna Joy McCabe	The Effect of Rosewater on the Lifespan of Drosophila melanogaster	Upper Darby High School Roseann Burns
B1306 Saket Gokhale	The Effect of Natural Supplements on Glucose Levels of Drosophila Melanogaster	Methacton High School Robert Helm
B1307 Jenna Burrow	Reproduction Between Casper Fish and Zebra Fish	Penns Grove-Carneys Point High School Shannon Tyson
B1308 Sriyaa Suresh	The Effect of Various Doses of Caryophyllene as a Drug on the Induction of Apoptosis in 4T1 Mouse Mammary Carcinoma Cells and Immunoblotting Procedure for Detection of Apoptotic Pathway	Parkland High School Michael Post
B1309 Allison Chang	The Effect of UV Light Protection on Artemia Salina	Upper Dublin High School Joanne Lilliendahl
B1310 Sena Houessou-Adin	What Natural Substances Best Repel Fruit Flies?	Springside Chestnut Hill Academy Scott Stein
B1311 Ava Sulkowski	Can Dogs be Trained with Colors?	Bishop Shanahan High School Steve Sulkowski

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## INTERNATIONAL GUESTS

B1601 Ruijia Ge	Predicting Breast Cancer Using Artificial Neural Network and Logistic Regression	Wang International Exchange Program Betty Wang
B1602 Shuhan Zhang	Effects of Ultrasonic Sanitizing Agents and Interfacial Roughness on Welding Strength and Efficiency of Polypropylene	Wang International Exchange Program Betty Wang
B1603 Yiran Fan	Predicting Drop Out from High School Using Artificial Neural Network and Logistic Regression	Wang International Exchange Program Betty Wang
B1604 Mingze Yan	Genetic Alteration of BRCA1/2 and Their Interactive Partners in Breast Cancer	Wang International Exchange Program Betty Wang
B1605 Wenjing Shan	Casual Bike Rental Volume Prediction via Artificial Neural Network	Wang International Exchange Program Betty Wang
B1606 Lechen Dong	Systematic Analysis of Air Pollution	Wang International Exchange Program Betty Wang

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

C0101	Brielle Roll	Perceptions on Cheating Within Different Ages	Woodstown-Pilesgrove High School Chris Rickard
C0102	Ryann Piperno	A Study of Cell Phones on Reaction Time	Perkiomen Valley High School Julie Mest
C0103	Maeve Nangle	Gender and the Perception of Humor	Upper Darby High School Sue Beck
C0104	Emily Jiang	Utilingualism and Pattern Recognition in Adolescents	High Technology High School Michael Roche
C0105	Spencer Davis	The Effects of a Checklist on Postoperative Incisional Infection Rates in Gastrointestinal Foreign Body Surgery in 303 Dogs	Holmdel High School Josephine Blaha/Sanu Daf
C0106	Sunny Liang	Measuring the Effect of Social Media on Self-Esteem in High Schoolers Using the Rosenberg Self-Esteem Test	High Technology High School Michael Roche
C0107	Panagiotis Moisiadis	How Do Demographics Affect the Bullying Experience?	Unionville High School Vishal Shah
C0108	Nina Hoback	The Effects of Cell Phones on Concentration	Upper Darby High School Sue Beck
C0109	Jessica Wang	Male vs. Female: Multitasking with Phones; A Continuation in an Older Generation	Council Rock High School-South Matthew Ciaudelli
C0110	Rujia Zhang	Can Planaria Be Rescued from Drug Induced Depression?	Central High School Galeet Cohen
C0111	Ella Champigny	Are Males And Females Attracted to Lighter or Darker Shades of Color?	Woodstown-Pilesgrove High School Carol Althouse
C0112	Zoe Frantz	Pen vs. Keyboard	Avon Grove High School Marylynn Frantz
C0113	Barbara Yurchishin	The Influence of Temporary Physical Traits on Attraction	Liberty High School Melissa Waldron

**BIOCHEMISTRY**

C0201	Blanche Jiang	Biological Screening of Drug-Like Compound Against Hepatitis B Surface Antigen	The Baldwin School Margaret Epstein
C0202	Ashmitha Sivakumar	Use of Carbon Dots as Photocatalysts for Efficient CO <sub>2</sub> Conversion to Hydrocarbons	Methacton High School Robert Helm
C0203	Jhanvi Dasaka	The Effect of Temperature on Denaturing Different Types of Proteins	Council Rock High School-South Matthew Ciaudelli
C0204	Tiffany Fang	The Effects of UV Radiation on the Growth of <i>Saccharomyces Cerevisiae</i> (Yeast) Colonies	High Technology High School Michael Roche
C0205	Tara Czekner	Effects of 5-Methylcytosine on Plant Growth and Development	Villa Joseph Marie High School Ellen Leaper
C0206	Hasit Patel	Effects of Natural Remedies on Gamma Globulin	Germantown Academy Sarah Kesten
C0207	Nia Mallangada	The Effect of Racemic Mixtures, Dextrorotatory Enantiomers, and Levorotatory Enantiomers on Their Rate of Change of Concentration Over Time	High Technology High School Michael Roche

2018 10TH GRADE ENTRIES

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
C0208 Dru McIver-Jenkins	The Effect of Complex Carbohydrates Diets on Endurance in Mice During Exercise	Central High School Galeet Cohen
C0209 Rhea Malhotra	Biochemical Interactions of Cardiac Ion-Blocking Agents and Channelrhodopsin - 2 in Optogenetic Pacing in Vivo Cardiovascular Diseases	Moravian Academy Gabriella Dee
C0210 Talia Priore	The Sugars in Your Stomach	Woodstown-Pilesgrove High School Carol Althouse
C0211 Andrew Yang	Factors Affecting Hydrolysis Rate of Starch with Salivary $\alpha$ -Amylase	Central Bucks High School-East Judy Elinow
C0212 Annemarie Abbott	Protein Denaturation	Woodstown-Pilesgrove High School Chris Rickard

## BOTANY

C0301 Isabella Swartz	Analysis of Phenotypic Characteristics of Lactuca sativa Leaves via Image Analysis	Central Bucks High School- South Charles Cathers
C0302 Chris Panik	Phun With Plants	Coatesville 9-10 Center Denny Panik
C0303 Carrie Spexarth	The Effectiveness and Biological Impact of Various Duckweed Controls	Marine Academy of Technology & Environmental Science John Wnek
C0304 Hannah Priller	The Effect of Electricity on Soil	Souderton Area High School Karen Wolfe
C0305 Irene Hong	Effect of Caffeine on Plant Growth	Upper Dublin High School Leanne Jones
C0306 Rehan Devaravar	Water pH's Effect on Seed Germination	Central Bucks High School-West Mark Hayden
C0307 Janice Chen	Alternative Agriculture: Year Two of an Ongoing Study	Central Bucks High School-East Judy Elinow
C0308 Jose Caraballo Jr.	Where is the Light At?	Mariana Bracetti Academy Andrew Bioglioli
C0309 Nallely Haj	Got Milk?	Mariana Bracetti Academy Andrew Bioglioli
C0310 Claudia Zhang	Examining Duckweed's Potential as a Source of Biofuel	Holmdel High School Josephine Blaha/Sanu Daf

## CHEMISTRY

C0401 Isabella Villegas	Acidity of Household Items	Woodstown-Pilesgrove High School Chris Rickard
C0402 Neha Pamidi	Determining the Most Efficient Antacid In Reducing Acid Reflux	Parkland High School Michael Post
C0403 Meshach Anderson	Fuel for the Future	Carver High School for Engineering and Science Paul Wagenhoffer
C0404 Ashley Waples	The Effects of Acid on Biodegradable Plastic	Upper Darby High School Roseann Burns
C0405 Sophie Zhang	The Effect of Plastic Type on the Water Permeability of Food Packaging	High Technology High School Michael Roche
C0406 Justin Ma	Properties of Alum and Metal	Delran High School Kimberly Brewster

<b>PRESENTER</b>		<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
C0407	Alexis Nappa	Styrofoam	Vineland HS AMSA Vicki Yeager
C0408	Sourish Jasti	Wastewater Purification: Removal of Heavy Metal Ion Pollutants in Wastewater Using Waste Tea as Biosorbents	Holmdel High School Josephine Blaha/Sanu Daf
C0409	Annika Hantho	What Food Makes the Best Dye?	Woodstown-Pilesgrove High School Carol Althouse
C0410	Paige Willard	How Much Moisture Does Lotion Keep In?	Woodstown-Pilesgrove High School Chris Rickard
C0411	Krishna Annambhotla	The Photoelectric Effect For Everyone	Southern Lehigh High School Rachel Saber
C0412	Sharvil Misra	How Frequency Affects the Forming of Copper Chloride Crystals	Council Rock High School- North Stacey Gould
C0413	Krishna Dihora	Encapsulating Paint Using Sodium Alginate	Southern Lehigh High School Rachel Saber
C0414	Erin Murphey	Comparison of the Efficiency of Biodiesel and Petroleum Diesel Fuel	Marine Academy of Technology & Environmental Science John Wnek
C0415	Eric Sohn	Should You Refrigerate Your Batteries?	Council Rock High School-North Terese Grateful
C0416	Jessica Melo	Extinction Oils	Vineland HS AMSA Vicki Yeager
C0417	Yana Mordvintseva	Controlling Crystal Growth Dynamics	Northeast High School James Finely

## COMPUTER

C0501	Will Knipe	Genetic Algorithm to Solve the N-Queens Problem	Unionville High School Sandra Litvin
C0502	Anthony Hu	Using Data Mining to Analyze the Evolution of English	Germantown Academy Sarah Kesten
C0503	Amari Howard	The Stroop Effect: Reading Colors	Salem County Vocational Technical School District Kristen Redkoles Polk
C0504	Sofiya Lysenko	Intelligent NN Nanorobotic Systems for Neurodegenerative Disease Treatment	Abington High School William Anderson
C0505	Aakhil Kassim	What Computers Can Learn from Computer Games	Council Rock High School-North Terese Grateful
C0506	Aviel Resnick	Diagnosing Breast Cancer through Machine Learning	Lower Moreland High School Richard Becker
C0507	Neil Deshmukh	The Development of a Medical Diagnostic Recurrent Neural Network Utilizing Cheap Low Power Computation	Moravian Academy Gabiella Dee
C0508	Ryan Young	How Would You Make a Neural Network to Verify Signatures?	Council Rock High School-North Stacey Gould

PRESENTER	EXHIBIT	SCHOOL & SPONSOR	
<b>EARTH/SPACE SCIENCES</b>			
C0601	Miti Patel	Implications of Ocean Acidification	Methacton High School Robert Helm
C0602	Jerry Arroyo	Space Pictures	Mariana Bracetti Academy Heather Olson
C0603	Owen Regehly	The Efficiency of Replenished and Natural Dunes with the Effects of Wind Speed in Dune Height and Accretion	Marine Academy of Technology & Environmental Science John Wnek
C0604	Gillian DiPatri	Now You See It, Now You Don't! How Rainwater Makes Rocks Disappear	Salem County Vocational Technical School District Kristen Redkoles Polk
C0605	Ethan Israel	Water Vapor and Solar Radiation	Central High School Galeet Cohen
C0606	Jonah Hoey	Climate Change at Valley Forge	Bishop Shanahan High School Leslee Hoey
C0607	Matthew Curry	Vacuum-Induced Freezing of Water Due to Latent Heat Loss	Central Bucks High School-East Judy Elinow
C0608	Lea Burton	Comparison of American Beachgrass on Barrier Islands, and Growth in Varying Soil Composition	Marine Academy of Technology & Environmental Science John Wnek
C0609	Ishaan Lal	Quantifying the Impact of Moon Phase on Skyglow Using Digital Camera	Emmaus High School Brent Landrum
C0610	Jay Patel	Comparison of Different Food Sources Via Plants for Use on Mars	Youth Achievers Committee Sherita Singleton
C0611	Nathan Nazareth	Minimizing Earthquake Casualties	Central Bucks High School-West Mark Hayden
C0612	Isabella Onofrietti	The Use of Soapstone to Naturally Maintain Various Temperatures of Beverages	Toms River High School North Christine Girtain
C0613	Tiffany Zhong	Harvesting Fog using Kirigami Structures	Germantown Academy Sarah Kesten
C0614	Annie Cheng	Modeling the Relationship of Solar Flux, Sunspots, and CMEs	Upper Dublin High School Dawn Edelman

## ENGINEERING

C0701	Ryan Hannah	Effects of Octanes on Mpg	Woodstown-Piles Grove High School Chris Rickard
C0702	Cassidy Poon	Pigmentless Colors: Transferring Nanostructures to Recreate Hydrophobic and Iridescent Surfaces	Charter School of Wilmington Gerald Poirier
C0703	Kevin London	A Zincing Feeling	Vineland HS AMSA Vicki Yeager
C0704	Kelly Qiang	Modeling the Motion of a Caterpillar Segment Using Soft Robotics	High Technology High School Michael Roche
C0705	Elizabeth Velez	Compound Microscope vs. Cell Phone Microscope	Mariana Bracetti Academy Andrew Bioglioli
C0706	Rajan Patel	Adventure Knees	Council Rock High School-North Stacey Gould
C0707	Alexandra Worrall	How Much Thermoelectric Energy Can be Recovered from a Thermoelectric Generator?	Central Bucks High School-West Mark Hayden
C0708	Aidan Connolly	Building a Homemade Longboard	Emmaus High School Brent Landrum

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
C0709	Punya Bhasin Using Origami Engineering to Develop a More Efficient Angioplasty Stent	Parkland High School Michael Post
C0710	Cecilia Quirk The Efficacy of Different Water Turbines in Harnessing Energy from Rainfall	Academy of Notre Dame de Namur Deborah Gleeson
C0711	Sage Scarlett Lightning Fast	Souderton Area High School Karen Wolfe
C0712	Harper Chisari Asic Rapiu Prototyping Machine	Parkland High School Michael Post
C0713	Jose Luis Castro Insulation: Heat or Miss	Vineland HS AMSA Vicki Yeager
C0714	Marius Vava Human Motion Analysis Using Reality Virtualization	Germantown Academy Sarah Kesten
C0715	Alina Seing The Propeller cars	Science Leadership Academy Tim Best
C0716	Marc Lubman The Effects of Fin Shape on Model Rocket Flights	Council Rock High School-North Stacey Gould
C0717	Cira Diop Devices for Heat Retention	Carver High School for Engineering and Science Scott Koehler
C0718	Samuel Clemente The Efficiency of Linear Accelerators	Woodstown-Pilesgrove High School Carol Althouse

## ENVIRONMENTAL

C0801	Elissa Bulkin Using Insects to Determine Time of Death	Council Rock High School-South Matthew Ciaudelli
C0802	Noah Makowicz Is Climate Change Evident in Our Local Community?	Bishop Shanahan High School David Makowicz
C0803	Ryan Makowski Ph Level on Grass Seeds	Philadelphia Academy Charter High School Joyce Zeka
C0804	Annalisa Quinn Flush or Bust	Central High School Galeet Cohen
C0805	Daniel Tobengauz Testing the Absorption Rate of Heavy Metal Ions in Ceratophyllum demersum (Hornwort)	Holmdel High School Josephine Blaha/Sanu Daf
C0806	Saikrishna Manojkumar How Arbuscular Mycorrhizal Fungi Affects Phytoremediation in Lead Contaminated Soil	Central Bucks High School-West Mark Hayden
C0807	Diamond Hassler Do Hurricanes Cool the Ocean?	Pennsville High School Jennifer Paul
C0808	Karley Hulitt Will Plants Grow Upside Down?	Bridgeton High School Claudia Angle
C0809	Taja Mazaj The Effect of Sunscreen on Coral Symbiont Zooxanthellae	Perkiomen Valley High School Julie Mest
C0810	Skylr Kelly Biomass to Biogas	Coatesville 9-10 Center Stephanie Wyatt
C0811	Shreya Patil Protein & Starch-Based Bioplastics: Characterizing Durability & Biodegradability	Methacton High School Robert Helm
C0812	Ryan Lim Effectiveness of Natural Filters and Fabrics to Clean Water	Upper Dublin High School Dawn Edelman
C0813	Steven Holmberg Copper Levels in Groundwater Sources	Marine Academy of Technology & Environmental Science John Wnek
C0814	Habibata Sylla Ants for Plants	Carver High School for Engineering and Science Lisa Franchetti

**PRESENTER****EXHIBIT****SCHOOL & SPONSOR****MATHEMATICS**

C0901	Alexis Faulhaber	Is It Easier to Remember Numbers in a Clump or Strand of Numbers?	Salem County Vocational Technical School District Kristen Redkoles Polk
C0902	Madison Friant	The Effect Exact Measurements of Sodium Bicarbonate Have on Baked Goods	Salem County Vocational Technical School District Kristen Redkoles Polk
C0903	Stephanie Sipics	Exploring Alternative Apportionment Techniques in the House of Representatives	Emmaus High School Brent Landrum
C0904	Stefania Schoen	Objective and Subjective Probabilities: Use By Game Theory to Infer Subjective Probability Assessment	Emmaus High School Brent Landrum
C0905	Pranav Garimidi	Exploring Dynamics of Real Matrices	Conestoga High School Amanda Katherine Serenevy

**MEDICINE/HEALTH**

C1001	Ariel Baiano	How Does Poor Posture Affect the Human Body?	Marine Academy of Technology & Environmental Science John Wnek
C1002	Paul Ringenbach	Effectiveness of Concussion Headbands	Bishop Shanahan High School Daniel Ringenbach
C1003	Allison Rossi	Does Changing the Size of Arteries Effect the Blood Flood?	Philadelphia Academy Charter High School Joyce Zeka
C1004	Hailee Maiden	Clawing Their Way to the Top	Philadelphia Academy Charter High School Joyce Zeka
C1005	Kavish Senthilkumar	Feature Selection-based Expression Analysis and Accurate Classification Across Multiple Cancers	Conestoga High School Scott Best
C1006	Omarly Cruz-Lovera	Hive Detector Sun Protector	Vineland HS AMSA Vicki Yeager
C1007	Arushi Tiwari	Studying the Role of GABA Type A Receptors in Alzheimer's Disease	Methacton High School Robert Helm
C1008	Arianna Sanchez	Cowculating Minerals	Vineland HS AMSA Vicki Yeager
C1009	Brianna Smith	Home Remedies and Acne Medicines: Which Combination Works Best?	Cheltenham High School Russel Wolff
C1010	Annika Agarwal	The Gut-Skin Axis: Probiotics on Staphylococcus Epidermidis	Biotechnology High School Ann MacLean
C1011	Martha Victoria	The X Bugs: Exploring the Developing of Antibiotic Resistance Bacterial Mutant	Carver High School for Engineering and Science Ebony Gary
C1012	Lauren Widergren	Compared Durability of Sutures	Bishop Shanahan High School Victoria Widergren
C1013	Claire Tse	Silk Fabricated Low-Cost Paper Device for Rapid Detection of Disease Biomarkers	Methacton High School Robert Helm
C1014	Emily Farrell	Purely Efficient: Producing Drinkable Water in Emergency Storm Conditions	Woodstown-Pilesgrove High School Carol Althouse
C1015	Claire Cao	Reconstituting a Cell Death Pathway in Cancer Cells	Central Bucks High School- West Mark Hayden

**PRESENTER****EXHIBIT****SCHOOL & SPONSOR****MICROBIOLOGY**

C1101	Sophi Schneider	Optimizing Microbial Fuel Cells	Upper Dublin High School Joanne Lilliendahl
C1102	Kevin Guo	A Cell Penetrating Peptide Promotes Target Delivery of Anti-HER2 Antibody into Breast Cancer Cells and Increases the Efficiency of Radiation Treatment	Great Valley High School Bonnie Wu
C1103	Lauren Gao	The Sunlight and Bacterial Growth In Aquatic Environments	Woodstown-Pilesgrove High School Carol Althouse
C1104	Megha Varghese	Antimicrobial Properties of Mouthwashes	Methacton High School Robert Helm
C1105	Ariana Trabachino	Hyperthermia Therapy	Central Bucks High School- East Judy Elinow
C1106	Karen Li	The Effects of Acne Medications on Bacteria	Methacton High School Robert Helm
C1107	Charlie Dang	What's in Your Wallet?	Philadelphia Academy Charter High School Joyce Zeka
C1108	Jace Mary	Vegan Leather	Liberty High School Melissa Waldron
C1109	Gowtham Pichaiyan	The Effect of Sand Filtration on E. Coli K12	Council Rock High School-North Terese Grateful
C1110	Kush Chaudhari	Assessing the Role of the Methyl Group in Quorum Sensing Inhibition and Comparing the Effectiveness of Various QSIs	Biotechnology High School Ann MacLean
C1111	Furkan Cakir	The Effect of Sugar and Caffeine on Lactobacillus Growth	Penns Grove-Carneys Point High School Shannon Tyson
C1112	David Yi	The Effects of Various Allium spp. on the Inhibition of Escherichia coli and Bacillus subtilis	Biotechnology High School Ann MacLean

**PHYSICS**

C1201	Teresa Klugewicz	Shutter Speeds and Human Perception of Motion	CCTEC Tyler Davenport
C1202	Arielle Touitou	The Overall Efficiency of Recycled Materials as Insulation	Marine Academy of Technology & Environmental Science John Wnek
C1203	Haley Korwan	How Certain Nanomaterials Cause Vibrations in Field Hockey Sticks	Marine Academy of Technology & Environmental Science John Wnek
C1204	Anya Pant	The Efficiency of Transformer Cores vs. Frequency	Parkland High School Michael Post
C1205	Michael Wertz	Feel the Vibration	Philadelphia Academy Charter High School Joyce Zeka
C1206	Christopher Dwyer	Wireless Power Transfer	Upper Darby High School Roseann Burns
C1207	Ashrit Verma	Using Polarized Filters for More Efficient Display Mechanisms	Moorestown High School Sean Watson
C1208	Ethan Baker	Accuracy of Kinematic Predictions of Classical and Quantum Mechanics	North Penn High School Melody Leithold
C1209	Avi Singh	Phone Phobia: Do Cell Phones Emit Electromagnetic Radiation?	Moravian Academy Gabriella Dee

**PRESENTER****EXHIBIT****SCHOOL & SPONSOR**

C1210	Molly Tyler	Threateningly Cold: An Analysis on the Importance of a Warm Coat	Woodstown-Piles Grove High School Carol Althouse
C1211	Phillip Grabovsky	Simulating Large Scale Movement with Individual Point Masses	Lower Moreland High School Richard Becker
C1212	Anthony Sandone	Get Something For Nothing: Free Power From The Sun!	Woodstown-Piles Grove High School Carol Althouse
C1213	Sabrina Wang	The Electronic Viola: How Does the Design and Materials Used to Make a Viola Affect the Sound it Produces	Springside Chestnut Hill Academy Scott Stein
C1214	Alyssa Smith	Join the Dark Side	Mariana Bracetti Academy Andrew Bioglioli

**ZOOLOGY**

C1301	Kanishk Nazareth	Effect of Magnetic Fields on the Regeneration Rate of Planarians	Central Bucks High School-West Mark Hayden
C1302	Andrea Sorbello	Does Breed Determine Dog Intelligence	Woodstown-Piles Grove High School Chris Rickard
C1303	Matthew Sandifer	A Planarian Model of the Effects of E-Cigarettes	Germantown Academy Sarah Kesten
C1304	Aditya Gunturi	Effects of Select Antioxidants on Alcohol-Induced Heart Rate Decrease in Daphnia Magna	Central Bucks High School-East Judy Elinow
C1305	Elizabeth Piatkowski	Determining the Extent of Permeation of Sublimated Oxalic Acid within an Apis mellifera Hive	Marine Academy of Technology & Environmental Science John Wnek



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

D0101	Ishani Hirata-Chandran	Determining Relationships Amongst Social Loneliness, Media Use, and Social Activity in Adults	Cherry Hill High School East Nicholas Wright
D0102	Allison Reed	From No Way to Someday	Methacton High School Robert Helm
D0103	Ummayh Siddiqua	The Effect of Smell on Memory	Upper Darby High School Sue Beck
D0104	Sophia Briseno	Effect a Difficult Task has on Moderately Easy Tasks	Woodstown-Pilesgrove High School Amelia Adams
D0105	Katelyn Lunny	How Does Color Affect Taste?	Holicong Middle School Robert Meletti
D0106	Snehal Gupta	Does Stress Affect Body Temperature?	Parkland High School Michael Post
D0107	Alexis Ocampo	Bilingual Speaking Patterns: The Role of Language in Memory Retention	Bishop Shanahan High School Theresa Ocampo
D0108	Alan Zheng	Effects of Different Methods of Persuasion on GMO Perception	Cherry Hill High School East Nicholas Wright
D0109	Sanjana Samudrala	How Does Your Social Status Affect Your Academics?	Holicong Middle School Carrie Bannon
D0110	Alejandro Vega	Which Handed Person is More Ambidextrous?	Vineland HS AMSA Marie Donato
D0111	Brendan Lewis	Emotion Recognition API's: An Examination of Their Effectiveness	Stonegate Academy Kim Lewis
D0112	Stacy Liang	Can Peppermint Improve Reaction Time?	Pennbrook Middle School Carol Ward

**BIOCHEMISTRY**

D0201	Zara Elahi	Providing a Solution for Pollination: Using Algae as an Alternative Biofuel	Vineland HS AMSA Marie Donato
D0202	Annabel Coplan	The Effect of Temperature on the Denaturation of Proteins	Upper Dublin High School Judy Winship
D0203	Tanya Mehta	Targeting Apoptotic Pathways by Regulating Caspase 3 with Chemopreventative Agents for Cancer Therapeutics	Parkland High School Michael Post
D0204	Sarah Young	Detergent and DNA	Methacton High School Robert Helm
D0205	Lana Van Note	The Bioremediation of Bisphenol A and the Effects on Artemia sp	Marine Academy of Technology & Environmental Science John Wnek
D0206	Alexa Balogh	Shedding Light on How pH Affects Diatom Photosynthesis	Parkland High School Michael Post
D0207	John Porter	Healing Hertz: Evaluation of the Effects of Sound Frequencies on Human DNA	Bishop Shanahan High School John Porter
D0208	Alexander Thai	Effect of Sodium Nitrate Intensity During Culturing on Lipid-Biomass Ratio in Microalgae	Cherry Hill High School West Brian Grillo
D0209	Sharif Salim	5 Seconds or Doom	Academy at Palumbo Melissa Soffer

2018 9TH GRADE ENTRIES

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D0210 Ganesh Selvakumar	A Therapeutic Perspective to Prevent Beta Amyloid Plaques in Alzheimer's Disease	Marple Newtown High School Dr. Ashakumary Lakshmikuttyamma
D0211 Grace Brown	Tasting the Environmental Adaptability of Lactase Pills	Northeast High School James Finely
D0212 Anna Zhou	Catalysis with Catalase: The Magic in Our Food	Upper Dublin High School Leanne Jones
D0213 Lily Pedrick	The Difference Between an Athletes Heart Rate and a Non-Athletes Heart Rate	Salem County Vocational Technical School District Kristen Redkoles Polk

## BOTANY

D0301 Caitlin Sia	Microphytobenthic Response to Changes in Salinity	Marine Academy of Technology & Environmental Science John Wnek
D0302 Jonathan Finney	How Does the Type of Water That a Plant is Treated With Affect It's Growth?	Salem County Vocational Technical School District Kristen Redkoles Polk
D0303 Angelina Lewis	The Effect of Non-ionizing Radiation on the Growth of Pea Plants	Vineland HS AMSA Marie Donato
D0304 Laney Jones	The Effect of Acid Rain on Seedling Germination	Woodstown-Pilesgrove High School Amelia Adams
D0305 Elizabeth Alarcon Contreras	The Effect of Magnesium Chloride in Radish Sprouts	Vineland HS AMSA Marie Donato
D0306 Manav Singh	Effect of Auditory Stimuli on Plant Growth	Lower Moreland High School Richard Becker
D0307 Luke Wilson	What Amount of Liquid Fertilizer Yields the Most Growth and Reproduction of Duckweed Within a Four Week Period	Emmaus High School Brent Landrum
D0308 Ivan Moore	Effects of Drugs on Plants and the Environment	Salem County Vocational Technical School District Kristen Redkoles Polk
D0309 Michelle Zheng	Which is Better: Hydroponics (water) or Soil on the Growth of Pisum Sativum?	Vineland HS AMSA Marie Donato
D0310 Kevin Cui	Epicuticular Waxes of Aquatic Plants Analyses	Germantown Academy Sarah Kesten
D0311 Wilson Wu	Back to the Roots: Comparing Mycorrhizae to Fertilizer	Cherry Hill High School West Brian Grillo
D0312 Amelie Hernandez	Starch as Fuel	Carver High School for Engineering and Science Paul Wagenhoffer
D0313 Magen Swartley	The Effect of Sunlight on the Surface Area of Radish Leaves	Souderton Area High School Karen Wolfe

## CHEMISTRY

D0401 Margaret Smith	Hydrogel Diffusion	Upper Darby High School Roseann Burns
D0402 Prem Modi	The Production of Hydrogen by the Electrolysis of Water	Central High School Galeet Cohen
D0403 Arti Dhareshwar	The Study Of Chirality	Parkland High School Michael Post
D0404 Eileen Xiao	Which Chemical Removes Aflatoxin the Most Effectively?	Upper Dublin High School Joanne Lilliendahl
D0405 Ronak Singh	Does Colloidal Silver Have Antimicrobial Properties?	Parkland High School Michael Post

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D0406 Hyunjin Lee	Theoretical Investigation of the Wittig Reaction Mechanism	Conestoga High School Choongkeun Lee
D0407 Katie Doherty	Which Antacids Are Most Effective For Providing Both Short and Long Term Relief?	Holicong Middle School Carrie Bannon
D0408 Joshua Charles	The Effect of Temperature on Hydrogen Production	Upper Darby High School Roseann Burns
D0409 Lilian Wang	Effect of NaHCO <sub>3</sub> on Time Solution Neutralizes	Wissahickon High School Mary Jo Burgoyne
D0410 Akshatha Manjunatha	Microfluidics: A pH Gradient Cell Sorter	Parkland High School Michael Post

## COMPUTER

D0501 Michael Rybalkin	Object Recognition and Classification Using Deep Neural Networks with Inference Running on the Nvidia Jetson Embedded Platform	Holicong Middle School Carrie Bannon
D0502 Hasan Hoque	Bass Notes: Your All-in-One App for Musicians	Upper Darby High School Roseann Burns
D0503 Jason Yan	Finding and Testing the Efficiency of a Optimized Swype-Oriented Keyboard Layout	High Technology High School Michael Roche
D0504 Isabella Field	How Does Background Music Affect the Audience?	Salem County Vocational Technical School District Kristen Redkoles Polk
D0505 Dharshan Tharumia	Seeking a Solution for the Barrier Between the Hearing-Impaired and Society	Parkland High School Michael Post
D0506 Tyler Edwards	Can You Hear Me Now? Comparing a Low Cost Self-Made Hearing Aid Device with Less Affordable Alternatives	Cherry Hill High School West Brian Grillo
D0507 Udit Garg	BACDrive: A Smart And Effective Approach to Preventing Drunk Driving	Parkland High School Michael Post
D0508 Rohan Mehra	Ideal Model for Autonomous Driving	Souderton Area High School Karen Wolfe
D0509 Amanda Heil	Battle of the Code: Does Bootstrap Improve Website Performance?	Bishop Shanahan High School Marcie Heil
D0510 Yasmin Yaghi	Development of a Home Inspection App	The Baldwin School Margaret Epstein
D0511 Joseph D'Ambrosio	Web Service Innovation	Avon Grove High School Michelle D'Ambrosio

## EARTH/SPACE SCIENCES

D0601 Taran Anantasagar	Exploring Graphene: the Next Wonder Material	Parkland High School Michael Post
D0602 Erin Gavin	The Effect of a Simulated Mars Environment on Tardigrades	Souderton Area High School Karen Wolfe
D0603 Lauren Young	Soda Bottle Magnetometer	Bishop Shanahan High School Michael Dvorchak
D0604 Rachel Treffeisen	Which Weather Source is the Least Wrong?	Philadelphia Academy Charter High School Joyce Zeka
D0605 Kashish Patel	How Can the Sky Predict the Weather?	Penndale Middle School Matthew Wendell

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D0606 Partha Debnath	A Comparison of the Size and Age of Martian Craters	Upper Darby High School Roseann Burns
D0607 Kent Young	Taming Tsunamis	Young Homeschool Robin Young

## ENGINEERING

D0701 Amanda Cao	Effects of Different Sandstone Mixtures on Growth of Algae on 3D Printed Corals	Vineland HS AMSA Marie Donato
D0702 Ashraf Essa	Creation of R-Value Efficient Insulation From Recyclable Materials	Cherry Hill High School West Brian Grillo
D0703 Daniel Abraham	Maximizing Efficiency in Organic Photovoltaic Cells	Methacton High School Robert Helm
D0704 Jonathon Chiver	Robo CPR	Foxman Torah Institute Martin Weiss
D0705 Vedavyas Jampanaboyana	Developing An Unconventional Adaptive Wind Turbine Blade Design Predominantly Focused to Increase Efficiency at Various Speeds	Parkland High School Michael Post
D0706 Anam Ali	Wind Power: Creating the Most Efficient Blade	Parkland High School Michael Post
D0707 Carter Gassler	One-Wheeled Self-Balancing Motorcycle	Avon Grove Charter School Paul Gassler
D0708 Olivia Austin	I Got the Power	Dover High School Jason Bowen
D0709 Matthew Selwood	Phase Change Materials in Concrete	Upper Darby High School Roseann Burns
D0710 Brandon Decker	Exploration of Photo Stacking Methods with Depth of Field Limitations for Light Microscopy	Springfield High School Mary Barry
D0711 Jake Donnini	Charging Your Phone Through the Power of Running	Woodstown-Piles Grove High School Amelia Adams
D0712 Priya Ramprabhu	Efficiency of Derived Airfoil Modeled Devices on Wind Velocity	Parkland High School Michael Post
D0713 Katrina Florendo	Maximizing the Power Output of Electricity-Generating Footwear by Modifying Piezoelectric Transducer Placement	High Technology High School Michael Roche
D0714 Addison Liu	Creating New Transformable Surfaces Using Multi-Stable Origami Tessellations	Unionville High School Cynthia Sung
D0715 Jillian Jankowski	Comparing the Physical Properties of Three Formulations of Bioplastics and a Petroleum Plastic	Marine Academy of Technology & Environmental Science John Wnek

## ENVIRONMENTAL

D0801 Sanjiv Parthasarathy	Effect of Various Wavelengths of Light on the Output of A Dye-Sensitized Photovoltaic Cell	Parkland High School Michael Post
D0802 Rhea Sharma	Using the Byproducts of Recycled Rubber to Synthesize Thermal Insulating Paint	Cherry Hill High School East Nicholas Wright
D0803 Aashika Shah	It's A Win-Win	Parkland High School Michael Post
D0804 Brianna Freeman	It's Urgent: What's in Your Dish Detergent?	Cheltenham High School Russel Wolff
D0805 Adam Dalkilic	Investigating Fertilizer Runoff Pollution with Nitrifying Bacteria-Enriched Soil	Cherry Hill High School East Nicholas Wright

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D0806 Mose Skolnick	Sustainable Cooling Systems: Water Pipes or Greenroof?	Upper Dublin High School Brian Palme
D0807 Angie De La O	How Does Acid Rain Effect the Germination of Seeds?	Salem County Vocational Technical School District Kristen Redkoles Polk
D0808 Abby Padlo	Which Fertilizer Has the Most Nitrate Leaching When Mixed With Soil?	Woodstown-Pilesgrove High School Amelia Adams
D0809 Alyssa Costello	Analysis of Nitrates, pH, Chlorine, and Copper in First Draw vs. Late Day Samples in Public and Well Water	Marine Academy of Technology & Environmental Science John Wnek
D0810 Madison Karlin	Got Silt? The Impact of Turbidity on Rates of Photosynthesis	Abington Junior High School Ed Steinhardt
D0811 Gianna Fiduccia	Does Toxicity Affect Plant Seeds?	Villa Joseph Marie High School Ellen Leaper
D0901 Neha Skandan	Patterns in The Problem of Apollonius	Moravian Academy Gabiella Dee

## MATHEMATICS

D0902 Jeffrey Gong	Quantum Mechanical Modeling of Zeta Functions and L-Series	Methacton High School Robert Helm
D0903 Pandora Schoen	Evolutionary Dynamics: Can We Use Game Theory To Find Conditions Leading To The Best Equilibrium?	Emmaus High School Brent Landrum
D0904 Annie Wang	Clinometers and Trigonometry, New and Improved	Holicong Middle School Robert Meletti
D0905 Michael Wang	The Effect of Cell Phone Usage Adjusted by Age and Gender on Car Accidents	Methacton High School Robert Helm
D0906 Amin Muhammad	What's The Fastest Method?	Mariana Bracetti Academy Andrew Bioglioli
D0907 Suchir Agarwal	The Riemann Hypothesis	Parkland High School Michael Post
D0908 Kush Soni	The Effects of Card Counting on a Simple Card Game	Youth Achievers Committee Ketan Soni
D0909 Olivia Conforti	Void Ratio: What is the Most Accurate and Precise Way to Calculate the Amount of Jelly Beans in a Jar?	The Pilgrim Academy Ruth Blouch

## MEDICINE/HEALTH

D1001 Sadie Furguele	What is the Correlation Between Stride Length and Physiological Factors?	Lenape Middle School Jennifer Yeager
D1002 Anjali Talluru	Dealing with Diabetes: The Road to Developing an Artificial Pancreas	Pennbrook Middle School Carol Ward
D1003 Leah Walter	The Effectiveness of Cinnamon from Cinnamomum on Reducing Streptococcus mutans	Unionville High School Susan Walter
D1004 Prathysha Kothare	Unfolding the Mysteries of VWF Year 2: Computational Validation of A2 Domain Unfolding	Parkland High School Michael Post
D1005 Aishani Ramoju	ALS: The Muscle Vandal	Parkland High School Michael Post
D1006 Sanjana Harihar	How will an Artificially Built Pancreas Function?	Council Rock High School- North Stacey Gould
D1007 Hayley Jankowski	Reproduction Rate Affect on Escherichia coli While Differentiating pH Levels	Marine Academy of Technology & Environmental Science John Wnek

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D1008 Samudrika Mohanta	Genetics and Differential Drug Responses	Downingtown West Campus High School Promad Mohanta
D1009 Lisa Lam	Planarians vs. Alcohol Addiction and Withdrawal	Cheltenham High School Russel Wolff
D1010 Madeline Nase	The Anti-Anemic Effects of Spirulina on Hemoglobin Levels Before, During and After Menstruation	Souderton Area High School Karen Wolfe
D1011 Gokul Perugu	Identifying Inhibitors of Protein Tyrosine Phosphate 1B (PTP1B)	Parkland High School Michael Post
D1012 Ramya Kalyan	Effect of Gender on Acne-Induced Depression	Cherry Hill High School East Nicholas Wright
D1013 MaKayla Richman	Pearly Whites	Salem County Vocational Technical School District Kristen Redkoles Polk
D1014 Bella Kurpis	Overweight Backpacks In High School	Woodstown-Piles Grove High School Amelia Adams

## MICROBIOLOGY

D1101 Alanis Andrulonis	Effects of Milk Fat Content on Mold Growth in Cheese	Upper Dublin High School Joanne Lilliendahl
D1102 Vani Kamra	The Effect of Antibiotics on Bacteria	Parkland High School Michael Post
D1103 Purva Gupta	Inducing Apoptosis In <i>S. cerevisiae</i> Cells	Parkland High School Michael Post
D1104 Ansh Abbaraju	Aeromonas Prevalence in Chester County Water Supply	Unionville High School Sandra Litvin
D1105 Swathi Murali	Smoking Kills: How Does Nicotine Affect Heart Rate?	Cheltenham High School Russel Wolff
D1106 Giovana Onofrietti	Inhibitory Effects of Green Tea Extract & Extra Virgin Coconut Oil on the Growth of <i>Streptococcus Mutans</i>	Toms River High School North Christine Girtain
D1107 Raj Kansara	How does Sucrose Affect the Power Output of Microbial Fuel Cells?	Council Rock High School-North Terese Grateful
D1108 Pranav Balabhadra	The Effectiveness of Dandelions on Inhibiting the Growth of Bacteria	Parkland High School Michael Post
D1109 Luis Santiago	Are You Afraid of the Dark: How <i>Daphnia Magna</i> React to Light and Dark	Cherry Hill High School West Brian Grillo
D1110 Amelia Wilauer	New Cure For Deadly Diseases	Coatesville 9-10 Center K. Wildauer
D1111 Emily Downs	Bacterial Residence Time in Sand and Water	Marine Academy of Technology & Environmental Science John Wnek
D1112 Rylie Gantz	What Commonly Used Surface Contains the Most Bacteria?	Woodstown-Piles Grove High School Amelia Adams
D1113 Jane Cohen	Bearded Dragons: Avoiding the Spread of Salmonella Bacteria with America's New Favorite Pet	Moorestown High School Sean Watson

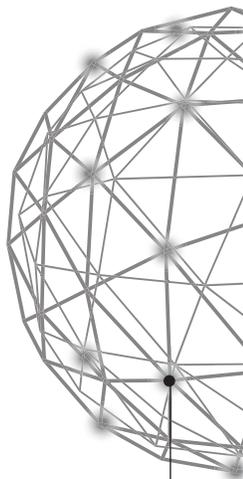
## PHYSICS

D1201 Ee-Ning Ooi	Non-Line-of-Sight Underwater Communication	Parkland High School Michael Post
D1202 Raviteja Kanthamneni	Airfoils and Winglets: Effect on Aerodynamic Efficiency	Parkland High School Michael Post
D1203 Mira Ahuja	Effect of Winglet Design on Aerodynamics	Upper Dublin High School Melanie Platchek

<b>PRESENTER</b>		<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
D1204	Dagmar Daniel	The Effect of G-Forces on Intraocular Pressure	Wissahickon High School Meredith Falatek
D1205	Bode Wildgrube	The Effect of the Shape of an Airfoil on the Efficiency of an Wind Turbine	Council Rock High School-North Terese Grateful
D1206	Michael Loughlin	Does the Size and Shape of the Sound Hole Enhance the Sound?	Bishop Shanahan High School Mary Loughlin
D1207	Shivam Singh	Secret Spying	Council Rock High School-North Terese Grateful
D1208	Stephen Padlo	Does the Salinity of Water in a Sandy Environment Affect the Performance Accuracy and Depth of a Metal Detector?	Woodstown-Piles Grove High School Amelia Adams
D1209	Sophia Capili	Comparing Solar Cell Electrical Output Using Varying Geodesic Dome Frequencies as the Base Framework vs. Regularly Mounted Solar Array	Marine Academy of Technology & Environmental Science John Wnek
D1210	Ankhitha Manjunatha	The Hofstadter Butterfly on a Ring Lattice	Parkland High School Michael Post
D1211	Dov Aryeh Presby	A Laser Light Show	Foxman Torah Institute Martin Weiss
D1212	Eric Zhong	Thermal Optimization of Piezoelectric Transducers	Upper Dublin High School Brian Palme

## ZOOLOGY

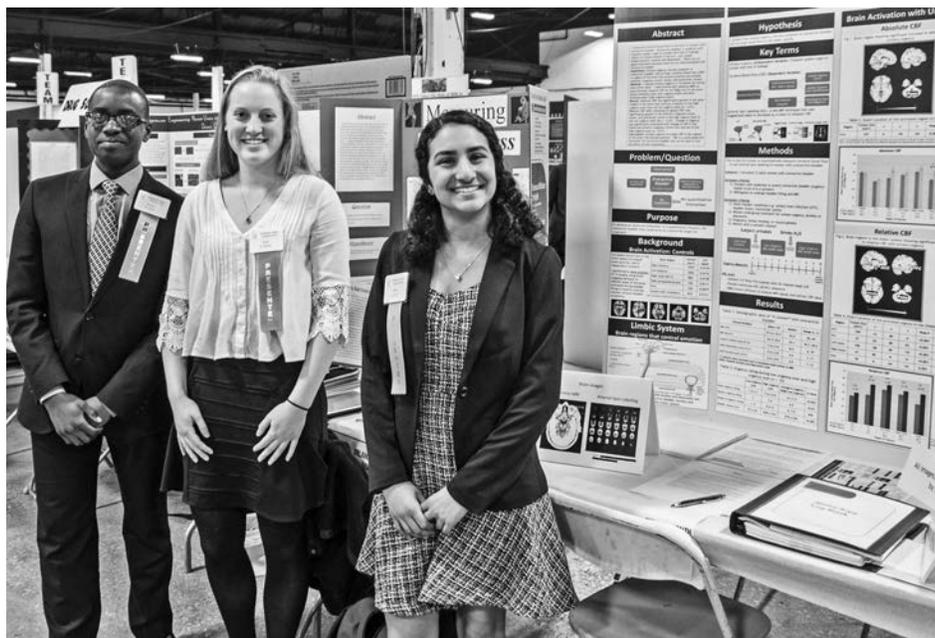
D1301	Samantha Glover	Examining Shifts in Seasonal Diversity of Species of Zooplankton in the Northern and Southern Barnegat Bay	Marine Academy of Technology & Environmental Science John Wnek
D1302	Jason LeCates	Does Gender Affect What Paw Cats Are Most Dominate With?	Woodstown-Piles Grove High School Amelia Adams
D1303	Raeann Caltabiano	Does the Season Affect Milk Production in Holstein Dairy Cows?	Woodstown-Piles Grove High School Amelia Adams
D1304	Emily Pivnichny	The Effect of Auditory Stimulants on the CO2 Production of Acheta domesticus	Souderton Area High School Karen Wolfe
D1305	Rahul Inaganti	Utilizing the Regenerative Abilities of Planaria to Determine the Effect of Air Pollution on Birth Defects	Parkland High School Michael Post
D1306	Carolyn Almonte	The Effect of Synthetic Musks Found in Personal Care Products On the Immune Defense & Development of Protophormia Terraenovae	Youth Achievers Committee Sherita Singleton
D1307	Anishka Kakade	Investigating the Effects of Water Pollution on Daphnia Magna	Parkland High School Michael Post
D1308	Olivia Steidle	Teeth Brushing Alternatives for Dogs	Souderton Area High School Karen Wolfe
D1309	Domenic Ottobre	The Effects of Colored Foods on the Motivation of Pimephales promelas To Eat	Cherry Hill High School East Nicholas Wright
D1310	Leigh Herbst	What Hay is Best for Guinea Pigs?	Holicong Middle School Carrie Bannon



**2018 TEAM PROJECTS  
9TH - 12TH GRADES**

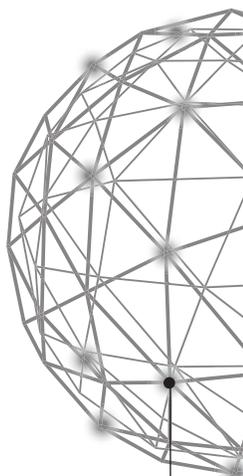
<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
T1401 Rishi Sharma Nikhil Kalyanraman Sungmin Hwang	The Effect of Changing the Duration of Heat Shock on the Transformation Efficiency of Escherichia coli HB101 using the pGreen plasmid	Biotechnology High School Ann MacLean
T1402 Arnav Goel Vijay Ramu	Isolation, Identification, and Characterization of Antibiotic Activities of Plant Sources from Camden and Burlington Counties	University of Pennsylvania Yajamana Ramu
T1403 Pushti Desai Shree Patel	The Cyclical Variation of Glycogen	North Penn High School Melody Leithold
T1404 Helen Li Yasmine Mezoury Kejsi Ruka	Are Humans the Only Living Things That Use Radiowaves to Communicate?	Central High School Galeet Cohen
T1405 Teresa Brostow Quinn Figueroa	Analysis of Marine Debris in a Local Estuary	Marine Academy of Technology & Environmental Science John Wnek
T1406 Shiker Nair Shuait Nair	A Thoracic Model for Predicting Pulmonary Function in Early-Onset Scoliosis	Upper Merion High School Peter Vreeland
T1407 Alex Ly Jeremy Ramos Jimmy Zeller	How Does Caffeine Affect Plant Growth?	Coatesville 9-10 Center Karen Ramos
T1408 Man Nguyen Stephen Tremple	Using Image-Based Processing to Discern Environmental Conditions	Liberty High School Melissa Waldron
T1409 Brian Ibarquen Darren Shank	Distraction Effects on Heart Rate Measured With a Fitbit	Bishop Shanahan High School Michele Ibarquen
T1410 Destiny LeFlore Olivia Little	Does Mint Actually Cool Things Down?	Salem High School Bruce Ferguson
T1411 Molly Eron Julia Wieggers	Using a Chitosan and Carbon Nanoparticle Based Sensor to Monitor Moisture of a Wound	Central Bucks High School- East Robert Meletti
T1412 Emily McGlamery Alyssa Sebell	Lord of the Slinkies	Pennsville High School Jennifer Paul
T1413 Cheito Cartagena Josh Burgos	Efficient Portable Generation/ Water Purification Unit	SCSSD (Daretown) Rick Hughes
T1414 Priyanka Hoskere Amber Wang	The Effect of Tipe-2 Protein Removal on Chemotaxis in 11-8 Stimulated DHL-60 Neutrophil-Like Cells	Charter School of Wilmington Glenn Heffner
T1415 Claire Brodish Alexa Horvath	The Effect of Fruit Peels on the Purification of Water	Holicong Middle School Carrie Bannon
T1416 Paras Chand Joseph DeLuca Morgan Philpot	Calorimetry of Carbohydrates: The Effect of Carbohydrate Potency on The Enthalpy of The Reaction Expressed Quantitatively in Kilocalories	Freedom High School Graceanne Ruggiero
T1417 Rachel Han Louis Spier	Plants and Oxygen Production	Moorestown High School Sean Watson
T1418 Marissa Marchese Krishna Patel	Sleep Tight, Safe Night	Vineland HS AMSA Vicki Yeager

PRESENTER	EXHIBIT	SCHOOL & SPONSOR
T1419 Autumn Barnard Jen Hummler Meredith Sweatlock	Does Caffeine Plant Problems in Plants	Coatesville 9-10 Center Veronica Cubit
T1420 Doreen Sampeur Yen Nguyen	Harvesting Energy Using Dye Sensitized Solar Cells	Upper Darby High School Roseann Burns
T1421 Brian Gerra Shivam Chand	The Effect of Structural Design on Bridge Performance	Freedom High School Graceanne Ruggiero
T1422 Samuel Ashley Maxwell Fennimore	The Effect of Freezing Temperatures on the Current of Various AA Batteries	Charter School of Wilmington Conrad Rice
T1423 Kaleb Sherrill Hammed Sylla	Effectiveness of Solar Chimneys as an Alternate Energy Source	Upper Darby High School Roseann Burns
T1424 Anne Jeanette Ardito Caroline Brandt	Radiation: The Deadly Cell Phone	Villa Joseph Marie High School John Gentile
T1425 Alan Benson Nicholas Digh Preet Patel	What's in your CuPb+2oard?	Vineland HS AMSA Vicki Yeager
T1426 Jonathan Cheng Adam Zhang	Urine as an Alternative to Blood for Cancer Liquid Biopsy and Precision Medicine	Methacton High School Robert Helm
T1427 Alex Day Noah Dusseau	Fire Power - An Amateur Rocket Experiment	Avon Grove High School Kenny Dusseau
T1428 Carolena Bellini Abigail Gray	How Does Soda Effect Egg Shells?	Holicong Middle School Robert Meletti
T1429 Achyut Reddy Ananth Dandibhotla	Structural Bioinformatics Using Neural Networks for Comparative Trajectory Analysis	Methacton High School Robert Helm



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

E0101	Jacquelyn Fekula	Men and Women See Things Differently - Literally	Orefield Middle School Amy Kakaley
E0102	Jackson Weber	They Won't Stick	Delran Middle School Jennifer Frisella
E0103	Alessia Astuto	Do People Have Better Visual Memory or Auditory Memory?	St. Dorothy School Dolores Astuto
E0104	Joanna Steinig	Interaction Between Brand Equity and Sensory Preference	Steinig Home School Rodi Steinig
E0105	Saachi Chakravarty	Artificial Intelligence - Who's Got the Smarts?	East Vincent Elementary School Sudipto Chakravarty
E0106	Cecily Downer	Does the Human Body Have a Dominant Side Which Coincides With Hand Dominance?	Pittsgrove Township Emily MacNeill
E0107	Georgia Defrank	Stress Much?	Haddonfield Friends School Earlene Sorrento
E0108	Johanna Schwachter	Doodle Head	Dawes Avenue Elementary School Nick Thompson
E0109	Tierney Ryan	How Many Numbers Can a Person Remember?	St. Aloysius Academy Kelly Ryan
E0110	John Turner	Does Music Boost a Person's Test Taking Abilities?	Alloway Township Debra Dilks
E0111	Madeline Markham	Afterimages: The Science of Color and Light	St. Francis Xavier School Theresa O'Brien
E0112	Oviyanna Umoh	Phantom Sensations	Campus Community Charter School Eric Morgan
E0113	Stephanie Boys	Loop, Whorl or Arch?	Newark Charter School Andrea Narvaez
E0114	Daniel Bernal	How Does Positive Reinforcement Affect Sports Performance?	Fernwood Avenue Middle School Jeff Warner
E0115	Clare Donnelly	How Color Affects Taste	Holicong Middle School Robert Meletti
E0116	Lily Wasserman	Hang Up! How Does a Phone Conversation Affect Reaction Time?	Cedarbrook Middle School Beth Kenna
E0117	Emma Celenza	Pretty Packaging Poll	Dock Mennonite Academy Middle School Lisa Reichley
E0118	Matthew Giordano	Does the Placebo Effect Make a Difference in the Outcome of Memory Test Scores?	St. Jude School Anita Marko
E0119	Adelle Leebel	Social Exclusion in Schools	Sussex Academy Chad Heers
E0120	Zaria Kimotho	Age vs. Time Perception	Campus Community Charter School Eric Morgan
E0121	Catrina Burgy	Rainbow Mind	Ursuline Academy Eileen Koenig
E0122	Prisha Srivastava	Does Music Make You Smarter?	Springhouse Middle School Daniel Christman
E0123	Brighton Risch	Placebos and Prestige: Does Price Affect Taste?	Great Valley Middle School Michael Risch



**2018 6TH-7TH-8TH  
GRADE ENTRIES**

PRESENTER	EXHIBIT	SCHOOL & SPONSOR
<b>BIOCHEMISTRY</b>		
E0201	Miranda Yanza Can Fingerprints be Inherited?	Haddonfield Friends School Earlene Sorrento
E0202	Riya Palkar Fruits vs. Veggies Nutrients Plenty	Germantown Academy Middle School Cory Eklund
E0203	Deeya Patel How Does the Type of Nut Affect the Amount of Calories it Contains?	Manalapan-Englishtown Middle School Kathleen Whitney
E0204	Samantha Spolsky The Affect of Temperatures Through Chemiluminescence	Holland Middle School Dave Curry
E0205	Amanda Khoury The Great Electrolyte Debate	Pennsville Middle School Cherie Burns/Melanie Polk
E0206	Klement Swartz Tannin Leaching From Leaves of Acer Rubrum and Quercus Palustris Exposed to Various Environmental Factors	Tamanend Middle School Erika Gamble
E0207	Dhivya Shepherd How Does the Amount of Oxygen Affect the Rate of Fermentation?	Springhouse Middle School Susan Stern
E0208	Becca Hardman What Liquid Makes the Apples Brown the Slowest?	Pittsgrove Township Emily MacNeill
E0209	Ellis Jack Totally Tubular	Jefferson School Jennifer Chowdhry
E0210	Olivia Fraticelli What Type of Drink Contains the Most Electrolytes?	Toms River Intermediate North Heather Klimak
E0211	Joshua Behanan Lets Go Bananas	C.C.A. Baldi Middle School Matthew Scanlan
E0212	Pheonah Cybulski What Were You Eggspecting?	Shawmont Elementary School Charlene Jablow
E0213	Parmesh Sivakumar Maximizing the Combustion Power of Ethanol	Arcola Intermediate School Cathy Stewart
E0214	Farishta Faruk Apple Browning	Springhouse Middle School Jennifer Karetsky
E0215	Sreevarshini Yedida Bitter But Better-Glucose Levels in Food	Patton Middle School Srinivas Yedida
E0216	Alexander Daoud Do Blackworms Get a Sugar High?	St. Elizabeth School Pamela Daoud
E0217	Saakhi Ray Bioluminescence of Algae	Delran Middle School Jennifer Frisella
<b>BOTANY</b>		
E0301	Alexandra McCulloch Greywater Gimmick? The Effect of Greywater on Seed Growth	Academy of Notre Dame de Namur Daniel Cushing
E0302	Alex Baxevanidis Watering Plants Effectively	Holicong Middle School Robert Meletti
E0303	Anthony Molchansky Different Concentration of Hydroponic Soutions	C.C.A. Baldi Middle School Matthew Scanlan
E0304	Alexander Autieri Zesty Peppers	St. Mary Interparochial School Judy Crossan
E0305	Sarah Gallo-Crelin Aquaponics vs. Soil	Oldmans Township Jason Winistorfer
E0306	Allison Malmquist Compost Chemistry on Plant Germination and Growth	Indian Crest Middle School Jennifer Odenwald

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E0307 Sonja Krajewski	Will Different Types of Sands Affect How Tall Beans Grow?	Toms River Intermediate South Cherri Worth
E0308 Brianna Reino	Does Music Affect the Growth of Plants	Villa Maria Academy Lower School Thomas Reino
E0309 Maddy Lewis	Hydroponic Hype	Dock Mennonite Academy Middle School Lisa Reichley
E0310 Kyle Wagner	How Aspirin Effects Plant Growth	William Henry Middle School Christine Barrett-Miller
E0311 Emily Walsh	Hydroponic Plant Growth vs. Soil Grown Plant Growth	Springhouse Middle School Jennifer Karetsky
E0312 Stella Barnett	The Effects of Aquaponics	Lenape Middle School Jennifer Yeager
E0313 Logan Podrasky	It's All in the Dirt	Sussex Academy Lauren Hvorecny
E0314 william dozier	Which Mixture of White Bean Plant Food Results in the Most Growth of the Sansevieria trifasciata Plant?	Forest Hill Homeschool Joy Dozier
E0315 Kloe Kurban	Best Decide: Organic or Pesticide	Fernwood Avenue Middle School Jeff Warner
E0316 Ben Girgis	To UV or Not To UV? (That is the Question)	Westfield Friends School Molly Cope
E0317 Natalie Perez	Flower Power	Buckshutem Road School Kristian Torchia
E0318 Lucy Schilling	The Effect of Microwave Radiation on Plant Growth	Springhouse Middle School Susan Stern
E0319 Savanna Wise	How Can You Speed Up the Ripening of Fruit?	William Henry Middle School Cheryl Tyrell
E0320 John Dolceamore	Plant Growth	St. Andrew School-Drexel Hill Amanda Hughes
E0321 Rachael Irizarry	Can Plants Generate Electricity?	Pittsgrove Township Kimberly Hetzell
E0322 Cooper Bryan	Which Antioxidant (Vitamin A, Vitamin C, Vitamin E) is Most Effective for Protecting Cells Against Free Radicals?	Owen J Roberts Middle School Jennifer Bryan

## CHEMISTRY

E0401 Molly Jespersen	How Do Different Household Items Affect the Weight of a Salt Crystal?	Pittsgrove Township Emily MacNeill
E0402 Reva Gandhi	What is the Impact of Changing pH on the Sphertification Process?	Springhouse Middle School Troy Minarovic
E0403 Brian Sponaugle	Thermal Stability of Plastics in a Microwave	Mariner Middle Kathleen Fisher
E0404 Deven Chakrabarti	Can You Desalinate Water by Using a Material That Dissolves or Absorbs Water But Not the Salt in Saltwater?	William Allen Middle School Lyndsay Pasi
E0405 Melissa Lucero	Rise Up	Cherry Street School Heather Engler
E0406 Olivia Hunter	Candle Burn Rate	Campus Community Charter School Eric Morgan

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E0407 Kendall Wetherall	Which Fruit will Light a LED? Lemon, Lime or Orange	William Henry Middle School Shawn Banks
E0408 Michael Osmolovskiy	The Truth About Juice	Newtown Middle School Mary Joy Troxel
E0409 Autumn Sherry	Shining a Light on Sugar!	St Teresa of Calcutta Elaine Loughnane
E0410 Mia Palacios-Perez	Melting Ice	ExCel Deena Osmer
E0411 Christen Radziewicz	Rusty Science	Campus Community Charter School Eric Morgan
E0412 Devan Patel	At What Level of pH is the Miracle Berry Most Effective?	Manalapan-Englishtown Middle School Kathleen Whitney
E0413 John Levy	Gas From Garbage	St. Dorothy School Suzanne Levy
E0414 Ranajoy Gupta	To (Vitamin) C or Not to C?	Alder Avenue Middle School Jeffrey Warner
E0415 Jonathan Zavialov	What Method of Cooking Food Preserves the Most Vitamin C?	Holicong Middle School Stephen Geneva
E0416 Dylan Kuang	Effect of Plasticizer on the Tensile Strength of Bioplastics	Arcola Intermediate School Cathy Stewart
E0417 Alyssa Eaton	Does Color of the Candle Affect How Much Energy is Put Off?	Campus Community Charter School Eric Morgan
E0418 Katie Beachy	Lights Out	William Henry Middle School Christine Barrett-Miller
E0419 Meghan Blanton	Fed Up with Makeup	Ursuline Academy Eileen Koenig
E0420 Maria Calderon	The Effects of Hurricanes	C.C.A. Baldi Middle School Matthew Scanlan
E0421 Luiza Sulea	Particle Size	J.R. Masterman School Kathleen Tait
E0422 Cole Greene	Iodine Deficiency	Campus Community Charter School Eric Morgan
E0423 David Yan	Affordable Zero-Emission Fuel Cell Cars	HB DuPont Middle School Gene Jones
E0424 Danny Greene	Conductivity of Electrolytes	Campus Community Charter School Eric Morgan
E0425 Jack Wiggins	Which Metal is Most Resistant to the Effects of Acid Rain?	Mariner Middle Jacob Kee
E0426 Kara Beardsley	Glow With The Flow (Does The Temperature Affect How Long A Glow Stick Glows?)	Lower Alloways Creek Township Stacy Sherman
E0427 Nora Keer	Hair Today, Gone Tomorrow	St. Mary Interparochial School Hannah Morgan
E0428 Aditi Maheshwari	The Effect of Temperature on Surface Tension	Springhouse Middle School Susan Stern
E0429 Sarah Deeney	Rust or Bust	Holy Child Academy Scott Hartsock
E0430 JD Fiore	Which Juice Will Win the Race of Primary Fermentation?	St. Elizabeth School Angela Fiore
E0431 Aurelia Harp	Will it Noodle?	Westfield Friends School Molly Cope

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>	
<b>COMPUTER</b>			
E0501	Conner Hiles	Which Computer Will Play Videos Better	Lower Alloways Creek Township Stacy Sherman
E0502	Simon Hershberger	Rock, Paper, Scissors, Shoot!	Dock Mennonite Academy Middle School Lisa Reichley
E0503	Harry Murphy	Which Apps Use the Most Cell Phone Battery Life?	St Peter's School Dirk Parker
E0504	Okezue Bell	IOT: How Can It Change Our Daily Lives?	Moravian Academy Middle School Joanne Daniels
E0505	Flavien Moise	What Makes a Good Password?	William Allen Middle School Lyndsay Pasi
E0506	Joseph Holahan	The Danger of Devices	St. Mary Interparochial School Judy Crossan
E0507	Jackson Perry	Does Electronic Ink Absorb and Reflect Heat Like Paint?	Pittsgrove Township Emily MacNeill
E0508	Eeshwar Krishnan	Using a Computer Algorithm to Determine Readmission for Diabetes	PA Leadership Charter School Sriram Krishnan
E0509	Nandini Dasaka	Breaking the Caesar Cypher	Holland Middle School Dave Curry
E0510	Ellie Kuhnle	Artificial Intelligence	Lenape Middle School Jennifer Yeager
E0511	Nathanael Gaw	And the Winner is... Terrific Tic Tac Toe Computer	Fernwood Avenue Middle School Jeff Warner
E0512	Alexander Brooks	What Percent of the Time Can a Computer Program Solve a Caesar Cipher?	Toms River Intermediate East Sylvia Piznik
E0513	Lalitha Loka	Predict Premature Heart Disease	Springhouse Middle School Daniel Christman
E0514	Joshua Zhang	What's Better- Small, Big or Varying Steps?	West Vincent Elementary School Wayne Zhang
E0515	Nicholas Valoret	At Which FPS Does the Eye Stop Seeing Choppy Motion?	Wyndcroft School David Johnson

## **EARTH/SPACE SCIENCES**

E0601	Elena Tawa	Craters and How They are Formed	Holicong Middle School Carrie Bannon
E0602	Abigayle Heathwaite	How Cool is the Total Solar Eclipse	Woodstown-Pilesgrove Middle School Don Dunner
E0603	Ishika Mukherjee	How Do Different Types of Seawalls Affect the Damage Brought by Tsunamis?	Manalapan-Englishtown Middle School Kathleen Whitney
E0604	Collin Gross	Wacky Waves	St. Dorothy School Kathleen Gross
E0605	Alana Strock	Geology, Hot or Not?	Orefield Middle School Christie Schlaner
E0606	Madelyn Bower	Shell Power: How Do Shells React to Acid?	Cedarbrook Middle School Beth Kenna
E0607	Lillian Heckler	Blinded by the Light?	Owen J Roberts Middle School Deborah Heckler
E0608	Holly Binkowski	Drink It Up	Holy Cross Regional Catholic School Jennifer Hitchner

<b>PRESENTER</b>		<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E0609	Angela Basha	Can Styrofoam Become Biodegradable	C.C.A. Baldi Middle School Matthew Scanlan
E0610	Shayne Ventura	Dangers of Our Homes(?)	Haddonfield Friends School Earlene Sorrento
E0611	Alexandria Marroquin	Reason for the Seasons	Quarter Mile Lane School Kathleen Sharp
E0612	Madeleine Cherry	Sunny Solution (What Materials Will Store Heat The Longest?)	Lower Alloways Creek Township Stacy Sherman
E0613	Alycea McBride	Increasing the Electricity of Microbial Fuel Cells' Electrodes	McBride Homeschool Carolyn McBride
E0614	Marissa Lux	The Great Quake	Patton Middle School Stephen Lux
E0615	Jason Liu	Dissolves Mineral Content of Philadelphia Area Surface Water	McCall School Scott Knoflicek
E0616	Melanie Loza	Determining Star Temperature Using Astrophotography	Holland Middle School Dave Curry
E0617	Vivianna Onofrietti	Does Exposure to Extreme Temperatures Create Increased Thermoluminescence Time For Different Types of Fluorescing Stones?	Toms River Intermediate North Katie Keller
E0618	Christopher Lewis	Hurricane Erosion Prevention	C.C.A. Baldi Middle School Matthew Scanlan

## ENGINEERING

E0701	Abhishek Hatkar	Measuring Cell Phone Electromagnetic Radiation	Campus Community Charter School Eric Morgan
E0702	Chloe Gilliard	Electric Charge	Ursuline Academy Eileen Koenig
E0703	Brett Spivack	A Sound Waves Journey to Complete Silence	Holicong Middle School Robert Meletti
E0704	Sangeetha Bhuyan	How Home Construction Materials Weaken Wireless Signals	Germantown Academy Middle School Cory Eklund
E0705	Piper Luke	Mag Lev	Galloway Township Middle School Debra Sommers
E0706	Alaina Gassler	Feel The Beat: A System That Communicates Heart Rate Through Vibrations	Avon Grove Charter School Paul Gassler
E0707	Lyna Ngo	Electromagnets	St. Dorothy School Huong Ngo
E0708	Marissa Bower	Which Shape of a Boat Hull Will Hold The Most Mass?	Mannington Township Nancy Anderson
E0709	Lila Mancebo	Cardboard Scissor Lift	Indian Avenue School Mark Raybould
E0710	Adrian Harder	Which Solar Oven Works Best?	Westfield Friends School Molly Cope
E0711	Vrishti Yadav	Smart Cane for the Visually Impaired	Pennbrook Middle School Carol Ward
E0712	Laila Johnson	Pain in the Knees	Penn Alexander School Stephanie Kearney
E0713	Jenry (Henry) Yoc Lopez	Why Fins?	Buckshutem Road School Kristian Torchia

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E0714	Joshua Lyzinski	Sky High: How to Increase Drone Propeller Lift Holicong Middle School Robert Meletti
E0715	Victor Cai	Designing a Sun Tracking Solar Panel to Maximize and Quantify Energy Harvest Efficiency Springhouse Middle School Scott Bauer
E0716	Aleksander Marku	Sound Proof Paint vs. Sound Proof Glue C.C.A. Baldi Middle School Matthew Scanlan
E0717	Landon Smith	How Far Can a Air Powered Car Go? Westfield Friends School Molly Cope
E0718	Ryan Mountz	Lighting Up With Food William Henry Middle School Cheryl Tyrell
E0719	Leo Wylonis	"Make Airplanes Great Again": Optimizing and Controlling Aircraft Wing Shape and Efficiency In-Flight Through Novel Polymer Artificial Muscle Actuators Tredyffrin-Easttown Middle School Edward Wylonis
E0720	Dean Siedlecki	Which Wood is the Strongest? Pittsgrove Township Emily MacNeill
E0721	Lawrence Ho	Two Tired: Making an Efficient Bicycle Generator Fernwood Avenue Middle School Jeff Warner
E0722	Kathryn Brooks	Which Spray Tan Can You Trust? Ursuline Academy Eileen Koenig
E0723	Molly Mishinkash	Building a Solar Oven St. Dorothy School Sara Becker
E0724	Varun Pandian	Can You Hear Your Favorite Color? Springhouse Middle School Troy Minarovic

## ENVIRONMENTAL

E0801	Lilian Raccuia	Can One Family Impact the Environment in a Positive Way by Reducing Their Garbage Output? Toms River Intermediate East Sylvia Piznik
E0802	Brendan Kenning	Does the Butler Twp Sewage Plant Discharge Degrade the Big Nescopeck Creek? Holy Cross Regional Catholic School Jennifer Hitchner
E0803	Gabriella Orsini	Rupturing Runoff's Rampage Sussex Academy Lauren Hvorecny
E0804	Dylan Thomas	Reduce, Reuse, Recharge? Jefferson School Jennifer Chowdhry
E0805	Jessie Jin	How Different Biodegradable Material Affects the Biogas Energy Generated Newtown Middle School Mary Joy Troxel
E0806	Siddhant Khandelwal	Ocean Acidification, A Global Problem Springhouse Middle School Jennifer Karetsky
E0807	Miracle Osabu	Can Mushrooms Save Earth? Youth Achievers Committee Sherita Singleton
E0808	Hana Yang	Nasal Filtration: Acquiring the Preeminent Filter Orefield Middle School Brian Holtzhafer
E0809	Charlotte Lignowski	Slip Slidin' Away: Do Plants Help Decrease Soil Erosion? Academy of Notre Dame de Namur Kathleen McTiernan
E0810	Emma McGuinn	Acid Rain, Such a Pain! How Acid Rain Affects Seedling Germination Academy of Notre Dame de Namur Kathleen McTiernan
E0811	Maya Butani	H2(KN)O(W): A Program and Sensor for Safer Water William Allen Middle School Lyndsay Pasi
E0812	Mikaiya Humphreys	Apocalypse Food Oldmans Township Jason Winistorfer

<b>PRESENTER</b>		<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E0813	Heaven Acevedo	Oil Spills	ExCel Deena Osmer
E0814	Jianwei Li	What Maker Ice Melt Fastest?	J.R. Masterman School Kathleen Tait
E0815	Andrew Perillo	Plants and Their Effects on Soil Erosion	Holicong Middle School Robert Meletti
E0816	Maddie Rohlfing	Growth of Duckweed in Freshwater Contaminated with Oil	Wyndcroft School David Johnson
E0817	Reilly Koitzsch	Which Design of a Six Plastic Ring Holder is the Most Efficient?	Owen J Roberts Middle School Heather Koitzsch
E0818	Jeremy Mukadiyil	The Effects of Water pH on Seed Germination on Plants Growth	Greenberg Elementary School Kristin Morris
E0819	Will Cano	Could Stratospheric Aerosols Prevent Major Hurricanes?	Owen J Roberts Middle School Mark Hofer
E0820	Kyle O'Connor	What an Oily Mess	The Pilgrim Academy Ruth Blouch
E0821	Ava Trexler	Which Brand Creates a Biodegradable Plate That has the Most Ability to Biodegrade?	Pittsgrove Township Emily MacNeill

## MATHEMATICS

E0901	Dwyer Barrett	A Roll of the Dice	St. Mary Interparochial School Judy Crossan
E0902	Arnab Sircar	Factors in the Usage of Electronic Vehicles (EVs): Analysis Derived from Fuzzy Inputs	Patton Middle School Saurabh Sircar
E0903	Riley Fulmer	Batter Up!	Alloway Township Debra Dilks
E0904	Balaji Marella	Eulerr's Number: Derivation and Application	Moravian Academy Middle School Joanne Daniels
E0905	Saptak Das	Surface Area to Volume Ratio and its Uses	Marsh Creek Sixth Grade Center Subhashis Das
E0906	Andrew Grossbauer	Statistics of Memory	Saint Mary's Catholic School Joe Grossbauer
E0907	Michael Quigley	Money Doesn't Grow on Trees	Holicong Middle School Robert Meletti
E0908	Michael Alchaer	The Fibonacci Sequence and Its Use in the Stock Market	Moravian Academy Middle School Joanne Daniels
E0909	Faheim Cooper	Probability of Cards	Tanner G. Duckrey School Lauren Martin
E0910	John Morrissey	Does the Rate of a Marble Change by Type of It?	Lower Alloways Creek Township Stacy Sherman
E0911	Isabella Cho	Looks and Math: Measuring Up to The Golden Ratio	Fernwood Avenue Middle School Jeff Warner
E0912	Abhinav Ramidi	What are the Effects of Carrying Capacities on Gray Wolf Population Stability?	Manalapan-Englishtown Middle School Kathleen Whitney

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
<b>MEDICINE/HEALTH</b>		
E1001	Saanvi Garg The Response of 3D Printed Breast Cancer Cells to Chemotherapy Drugs	Patton Middle School Alisa Clyne
E1002	Isaac (Zach) Schapiro Flu Season - To Vaccinate or Not to Vaccinate? That is the Question	Springside Chestnut Hill Academy Ann Zalasky
E1003	Marissa Almonte The Effect of Thirdhand Smoke Generated by Combustion & Electronic Smoking Devices on the Mortality and Behavior of Crickets	Youth Achievers Committee Sherita Singleton
E1004	Ismael Roblero Video Games - Fun or Dangerous?	Milford Central Academy Jacquelyn Powers
E1005	Kenneth Morris The Effect of Arsenic Treated Wood on Public Safety	Sussex Academy Lauren Hvorecny
E1006	Olivia Langley Does Different Tempos of Music Affect Heart Rate?	Pittsgrove Township Emily MacNeill
E1007	Samantha Barr Liquids & Dissolution Rates of Medicine	St. Dorothy School Robert Barr
E1008	Delaney Paterno How Does Stress Affect People with Stress-related Diseases/Disorders?	Holicong Middle School Carrie Bannon
E1009	Skylar McArdle This Song Gets My Heart Pumping	Shawmont Elementary School Charlene Jablow
E1010	Natalia Logan Pain, Pain, Go Away	Buckshutem Road School Kristian Torchia
E1011	Visruth Hanumaihgari The Effect of Antioxidants on Cancerous Tumor Growth	Springhouse Middle School Troy Minarovic
E1012	Maehul Bhandary Which Oil Produces the Least Soot?	Arcola Intermediate School Cathy Stewart
E1013	Zoe Peters Parkin Parkinsons	Jefferson School Jennifer Chowdhry
E1014	Colin Brown The Effect of Video Games on the Body	Wyndcroft School David Johnson
E1015	Julia Takla Which is More Effective In Reducing Cholesterol: Natural Homeopathic Remedies or Pharmaceutical Medication?	Toms River Intermediate North Katie Keller
E1016	Ben Rubinich 3 Strikes... You're Out! Testing the Effectiveness of Baseball Helmets in Reducing the Risk of Concussions	Holy Family School Melissa Rubinich
E1017	Brittany Newman How Can an Artificial Pancreas Be Modeled Using an Acid/Base Reaction?	Manalapan-Englishtown Middle School Kathleen Whitney
E1018	Shivani Kumar Water Decontamination Using the SODIS Method	Richboro Middle School Megan Mohl
E1019	Anya Kazemi Which Whitening Toothpaste Works Best?	Westfield Friends School Molly Cope
E1020	Michael Jarrell Caffeine and Athletic Performance	Mariner Middle Kathleen Fisher
E1021	Kylie Casper How Does Color Affect Heart Rate?	Pittsgrove Township Emily MacNeill
E1022	Sophia Fadem Do Pets Improve Your Health and Which Pet Is Best For You?	Arts Academy Charter Middle School Carole Ondrovic
E1023	Igor Avanesov The Effects of Human Growth Hormone on Planarian Regeneration	C.C.A. Baldi Middle School Matthew Scanlan

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E1024 Wilton Melendez	Blood Sugar Blast - Finding the Perfect Plate	Claymont Intermediate School Milton Melendez
E1025 Cameron Decker	Generic Brand vs. Name Brand: The Effectiveness of Sunscreen at Varying SPF Levels	E.T. Richardson Middle School Jim Conlin

## MICROBIOLOGY

E1101 Sarah Little	Which Antifungal Agent Kills Yeast Most Effectively?	Pittsgrove Township Emily MacNeill
E1102 Abby McFarland	Wrestling Is Funky: Finding the Most Effective Mat Cleaner To Prevent Wrestling Skin Diseases	Pennsville Middle School Cherie Burns/Melanie Polk
E1103 Lucy Wang	The Growth of Soil Bacteria in the Presence of the Used Engine Oil	Arcola Intermediate School Cathy Stewart
E1104 Romil Shah	Is Your Birthday Wish Full of Bacteria?	Wyndcroft School David Johnson
E1105 Aneeyah Wilmore	Oxygen Wars	Cherry Street School Heather Engler
E1106 Julietta Onofrietti	Can Plant Derived Oil Act as a Natural Way to Decrease Caries Causing Bacteria S.mutans in the Oral Cavity?	Toms River Intermediate North Katie Keller
E1107 Amelia Parson	Soap it Up	William Henry Middle School Christine Barrett-Miller
E1108 Anish Kodali	Alliums Antibacterial Allure	Great Valley Middle School Deb Tischler
E1109 Alessandra Fusaro	Microbial Filtration Using White Pine	St. Mary Interparochial School Dana Grossi
E1110 Chirag Choudhary	Using Bacteriophages to Destroy Antibiotic Resistant Bacteria	Patton Middle School Zhihan Zhuang
E1111 David Maturo	Least But Not Yeast: The Study if Yeast Can Ferment Polysaccharides Better Than Disaccharide	Haddonfield Friends School Earlene Sorrento
E1112 Allison Verani	Which Antibiotic is Most Efficient at Hindering the Growth of Escherichia Coli the Best?	St. Jude School Anita Marko
E1113 Silas Grasse	Is the Five Second Rule a Real Thing?	St Peter's School Dirk Parker
E1114 Saanvi Mehta	Is the Five Second Rule True?	Belhaven Avenue School Raquel Law
E1115 John Steitz	Sugars and Caffeine are Bad for Me!	Holicong Middle School Robert Meletti

## PHYSICS

E1201 Skye Scarlett	Blow Your Ears Away	Indian Crest Middle School Jennifer Odenwald
E1202 Katherine Garcia	Boing, Boing	Buckshutem Road School Kristian Torchia
E1203 Alexis Wachter	What Surface Makes a Basketball Bounce Higher?	Delran Middle School Kathleen Conroy
E1204 Dysen Neill	Battle of the Bats	French Creek Elementary School Rick Neill
E1205 Xander Marshall	What is the Effect of Color on Water Heating by Absorption of Light?	Pittsgrove Township Emily MacNeill

<b>PRESENTER</b>		<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E1206	Brady DeGrands	Dynamics of Vacuum Chamber	Penn Alexander School Stephanie Kearney
E1207	Abigail Byers	Which Volleyball Serving Technique is the Most Accurate?	Towle Institute Donna Chandler
E1208	Varsha Borkar	What Amount of Blades on a Wind Turbine is Most Efficient For Generating Electricity?	Springhouse Middle School Noel Mahmood
E1209	Miranda Sweeney	Whoosh!	St. Mary Interparochial School Judy Crossan
E1210	Nathaniel Schwenker	How Does the Shape of an Object Affect It's Speed?	Newtown Middle School Mary Joy Troxel
E1211	Natalie Lewis	Which Type of Light Bulb Most Closely Resembles the Spectrum of Sunlight Through a Cell Phone Spectrometer?	Stonegate Academy Kim Lewis
E1212	Cody McBride	Revolutionizing Dryer Technology with Ultrasonic Transducers	McBride Homeschool Carolyn McBride
E1213	Tommy Flynn	Where Does a Bouncing Ball's Energy Go?	St. Aloysius Academy Lisa Flynn
E1214	Rishika Rohatgi	Skidding To Safety	Springhouse Middle School Susan Stern
E1215	Bavanan Bramillan	Which Material of Rope Will Act as the Best Energy Storage Mechanism in a Torsion-Type Spring?	Lenape Middle School Jennifer Yeager
E1216	Ashley Ciampitti	What is the Most Effective Friction-Reducing Substance?	St. Dorothy School Denise Ciampitti
E1217	Ethan Hankin	Produce Power!	Pennsville Middle School Cherie Burns/Melanie Polk
E1218	Addison Mood	Whatever Floats Your Boat	Newark Charter School Andrea Narvaez
E1219	Daniel Dmello	Does Adding Salt to Water and Increasing its Temperature Affect the Surface Tension of Water?	Manalapan-Englishtown Middle School Kathleen Whitney
E1220	Natalie Doebley	Scattered Spatters: How Does the Surface Affect the Spatter?	Cedarbrook Middle School Beth Kenna
E1221	Jackson Caldwell	Electromagnetic Propulsion	Milford Central Academy Jacquelyn Powers
E1222	Adam Malyshev	How Does the Airfoil Shape Affect a Propeller's Thrust?	Manalapan-Englishtown Middle School Kathleen Whitney
E1223	Brendan Esterly	The COLD Truth: Magnetic Attraction	East Coventry Elementary School Erin Esterly
E1224	Anya Baker	Where's the Heat?	Cherry Street School Heather Engler

## ZOOLOGY

E1301	Sofia Trone	Can Daphnia Live in Polluted Streams?	Engle Middle School Richard Trone
E1302	Grace Barnish	How Do Color Bird Feeders Effect A Birds Diet?	Pittsgrove Township Emily MacNeill
E1303	Gillian Spragg	Coffee Squirm	Academy of Notre Dame de Namur Michelle Alvarez
E1304	Ryan Ferdock	Food for Our Feathered Friends	Saint Mary's Catholic School Joe Grossbauer

<b>PRESENTER</b>	<b>EXHIBIT</b>	<b>SCHOOL &amp; SPONSOR</b>
E1305 Sarah Vonderahe	The Cat's Meow: Is X-Inactivation in Female Tortoiseshell Cats Predetermined or Random?	Vonderahe Homeschool Elisabeth Vonderahe
E1306 Ilene Stark	Determining Paw Preference in Cats and Dogs	Holicong Middle School Robert Meletti
E1307 Justin Didden	Do Fish Go to School?	William Henry Middle School Christine Barrett-Miller
E1308 Emma Philbin	Gut Buster	Philbin Homeschool Emma Philbin
E1309 Andy Hill	Worm's Eye View	Orefield Middle School Thomas Bryant
E1310 Aruna Balasubramanian	The Grammar of Birdsong: Information in Acoustical Patterns	French International School of Philadelphia Valerie Denny
E1311 Namira Nera	The Effect the Human Growth Hormones on the Regeneration Rate of Planaria	C.C.A. Baldi Middle School Matthew Scanlan
E1312 Vaishnavi Joshi	A Novel Approach to Reversing the Effects of Fertilizer Runoff on Aquatic Life	Springhouse Middle School Scott Bauer
E1313 Emma Rielly	How Does pH Concentration Affect the Lifespan of a Sea Monkey?	Toms River Intermediate North Katie Keller
E1314 Evan Wayman	Bird's Eye View	West Fallowfield Christian School Christen Wayman
E1315 Maddox Pace	Ants Eating Plants	Oldmans Township Jason Winistorfer
E1316 Lucas Badger	How Does Caffeine Effect the Heart Rate of Lumbriculus Worms?	Holicong Middle School Carrie Bannon
E1317 Sunny Liu	Could Wookies Cuddle to Keep Warm?	McCall School Scott Knoflicek
E1318 Corbin Menz-Gentzow	Carnivores, Herbivores, and Omnivores	Crest Memorial School Matthew Fritz
E1319 Cole Hoffman	Color Preferences in Dogs	Campus Community Charter School Eric Morgan

## TEAM PROJECTS

E1401 Cate DeGraw Ava Reedman	Double Your Bubble	St. Andrew School-Newtown Tracy Boedewig
E1402 Anya Patel Chloe Spinoza	Rethink Your Drink	William Henry Middle School Cheryl Tyrell
E1403 Kyle Cousens John Harjes	How Does Chewing Affect Cognition?	Toms River Intermediate South Cherri Worth
E1404 Vrindavani Cannavino Madeline Ashby	Flour Power	Arts Academy Charter Middle School Jennifer Cole
E1405 Marisa Bencivengo Ava Selzer	The Physics of Dance	St. Andrew School-Newtown Tracy Boedewig
E1406 Juliane Parks Ali Bowman Emily Gratz	In the Fast Lane	Pennsville Middle School Cherie Burns/Melanie Polk
E1407 Shrish Bayyapu Dhanush Panjarla Viraj Pentapalli	Which Acid Based Cleaner Erodes Tile the Most?	William Allen Middle School Lyndsay Pasi
E1408 Diana Morales Jhesica Ramirez Ana Ruiz	It's a Bird, It's a Plane, It's a Windmill!	ExCel Deena Osmer

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E1409 Abigail Reichley Keturah Landis	Lunar Labor	Dock Mennonite Academy Middle School Lisa Reichley
E1410 James McAllister Myles Rodgers	What Fruit Has the Most Juice?	Elsinboro Township Joe Sarbello
E1411 Naysa Douglas Sean Hargrow Lahaina Lorenzo	Radiation Disaster	Youth Achievers Committee Sherita Singleton
E1412 Monty Pinckney Rishi Yarlagadda	Electric Charge in a Jar	Newark Charter School Andrea Narvaez
E1413 Suhani Mathur Nithya Mooli	River Pollution	Great Valley Middle School Priyanka Mathur
E1414 Alexandra Aviles Ashley Rehrig	Tesla Coils: What Can They Power?	Arts Academy Charter Middle School Carole Ondrovic
E1415 Jose Martinez Richard Pacheco	Yeasty Beasty	Quarter Mile Lane School Kathleen Sharp
E1416 Cameron Scott Theo Winter	Effect of the SMK1 Gene in Pathogenic Yeast	J.R. Masterman School Kathleen Tait
E1417 Ishan Shah Rutva Shah	Does the Type of Material Affect the Amount of Corrosion Caused by Acid Rain?	Toms River Intermediate North Katie Keller
E1418 Brooke Greene Emerson DuVilla	That's a Wrap! How Do You Keep Apple Slices Fresh?	Newark Charter School Andrea Narvaez

## CONSUMER SCIENCE

E1501 Caleb Rocco	Greasy Chips	Elsinboro Township Joe Sarbello
E1502 Nandini Bhatt	Produce Paper: A Solution to Prolong Life of Fruits and Vegetables	Great Valley Middle School Neha Bhatt
E1503 Therese Trainer	Amount of Coverage of Different Brands of Sunscreen	Academy of Notre Dame de Namur Daniel Cushing
E1504 Nickai Gladden	Where There's Smoke, There's Fire: Properly Testing Smoke Detectors	Jenks Academy of Arts and Sciences Margaret Conway
E1505 Tamyra Turner	Battery Life	Jenks Academy of Arts and Sciences Margaret Conway
E1506 Teagan Rudderow	Crystal Clear	Oldmans Township Jason Winistorfer
E1507 Krisha Patel	Can You TASTE, the LacTASE?	Alder Avenue Middle School Jeffrey Warner
E1508 Nemecio Jiminez	Operation Observation	Cherry Street School Heather Engler
E1509 Noah Salaam	What's the Backup for Backup Cameras?	Haddonfield Friends School Earlene Sorrento
E1510 Ani'ah Ames	Oozing Chocolate Factory	ExCel Deena Osmer
E1511 Gianna Aregnano	Electrolye Effectiveness	Nazareth Academy School Susan Hujber
E1512 Qinny Irwin	Brainwashed?	St. Elizabeth School Angela Colasanti
E1513 Sreekara Dandibhotla	Electrolytes: Why We Need Them and Which Drink Has the Most	Arcola Intermediate School Cathy Stewart

**PRESENTER**

E1514 Emilia Ostrikov

E1515 John Galloway

E1516 Margo Matlusky

E1517 Lexie Kisseberth

E1518 Sarah Saville

E1519 Charles Pascual

E1520 Veronica Swartz

**EXHIBIT**

Which Household Cleaner is Most Acidic?

What iPhone Case Works Best?

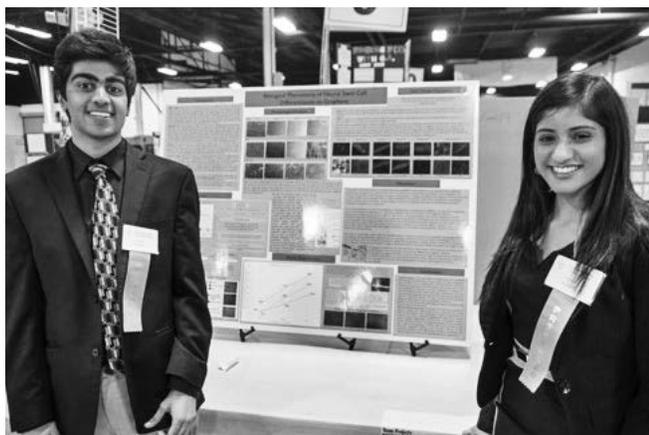
Un-Poppable

Which Skin Moisturizer Works Best to Keep Skin Moist?

How Does Your Cookie Crumble?

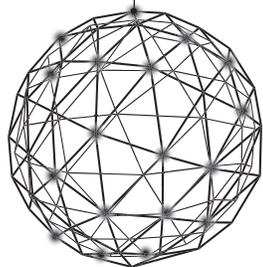
Popping for the Title: A Consumer's Guide to the Best Popcorn on the Market

Determination of Tannin Levels in Fruit with a Simple Biding Assay

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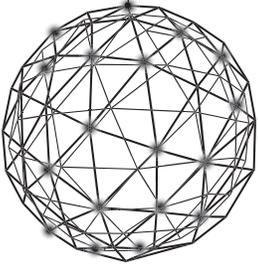
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 Bridgeton High School  
 St. Dorothy School  
 Vineland High School  
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 Holicong Middle School  
 St. Dorothy School  
 Westtown School  
 William Henry Middle School  
 Springfield High School  
 Springhouse Middle School  
 Upper Darby High School  
 Lower Moreland High School  
 St. Dorothy School  
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 Towle Institute  
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 Central High School  
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Marylynn Frantz  
 Jennifer Frisella  
 Matthew Fritz

**SCHOOL**

Moravian Academy Middle School  
 St. Elizabeth School  
 Marsh Creek Sixth Grade Center  
 CCTEC  
 Moravian Academy  
 French International School  
 of Philadelphia  
 Alloway Township  
 Vineland HS AMSA  
 Donnelley Homeschool  
 Forest Hill Homeschool  
 Woodstown-Pilesgrove Middle School  
 Carver High School for  
 Engineering and Science  
 Avon Grove High School  
 Bishop Shanahan High School  
 Upper Dublin High School  
 Germantown Academy Middle School  
 Central Bucks High School- East  
 Cherry Street School  
 The Hill School  
 Science Leadership Academy  
 The Baldwin School  
 East Coventry Elementary School  
 Wissahickon High School  
 Salem High School  
 Northeast High School  
 St. Elizabeth School  
 Mariner Middle  
 St. Aloysius Academy  
 Carver High School for  
 Engineering and Science  
 Avon Grove High School  
 Delran Middle School  
 Crest Memorial School

**TEACHER**

Megan Gallagher  
 Erika Gamble  
 Ebony Gary

Paul Gassler  
 Jennifer Gatti  
 Stephen Geneva  
 John Gentile  
 Laura George  
 William Geppert  
 Christine Girtain  
 Christine Girtain  
 Deborah Gleeson  
 Melanie Gomba  
 Matthew Good  
 Stacey Gould  
 Terese Grateful  
 Terese Grateful  
 Brian Grillo  
 Kathleen Gross  
 Joe Grossbauer  
 Dana Grossi  
 Kevin Hailey

Scott Hartsock  
 Mark Hayden  
 Deborah Heckler  
 Chad Heers  
 Glenn Heffner  
 Marcie Heil  
 Robert Helm  
 Kimberly Hetzell  
 Anthony Hicks  
 Jennifer Hitchner  
 Leslee Hoey

**SCHOOL**

Upper Dublin High School  
 Tamanend Middle School  
 Carver High School for  
 Engineering and Science  
 Avon Grove Charter School  
 Bishop Shanahan High School  
 Holicong Middle School  
 Villa Joseph Marie High School  
 Owen J Roberts High School  
 Cape Henlopen High School  
 Toms River High School North  
 Toms River High School South  
 Academy of Notre Dame de Namur  
 Bishop Shanahan High School  
 Conestoga High School  
 Council Rock High School-North  
 Council Rock High School-North  
 Council Rock High School-South  
 Cherry Hill High School West  
 St. Dorothy School  
 Saint Mary's Catholic School  
 St. Mary Interparochial School  
 Carver High School for  
 Engineering and Science  
 Holy Child Academy  
 Central Bucks High School- West  
 Owen J Roberts Middle School  
 Sussex Academy  
 Charter School of Wilmington  
 Bishop Shanahan High School  
 Methacton High School  
 Pittsgrove Township  
 Hicks Homeschool  
 Holy Cross Regional Catholic School  
 Bishop Shanahan High School



**TEACHER**

Mark Hofer  
 Brian Holtzhafer  
 Rick Hughes  
 Amanda Hughes  
 Susan Hujber  
 Lauren Hvorecny  
 Michele Ibarquen  
 Melinda Irven  
 Darlene Iseminger  
 Charlene Jablow  
 Terry Jarvis  
 Audrey Johnson  
 David Johnson  
 Leanne Jones  
 Gene Jones  
 Amy Kakaley  
 Jennifer Karetsky  
 Michael Katz  
 Stephanie Kearney  
 Jacob Kee  
 Katie Keller  
 Beth Kenna  
 Sarah Kesten  
 Mohammad Amir Khan  
 Heather Klimak  
 Scott Knoflicek  
 Scott Koehler

Eileen Koenig  
 Heather Koitzsch  
 Alexander Koscica  
 Chris Kramer  
 Sriram Krishnan  
 John Kuzan  
 Dr. Ashakumary  
 Lakshmikuttyamma

**SCHOOL**

Owen J Roberts Middle School  
 Orefield Middle School  
 SCSSD (Daretown)  
 St. Andrew School-Drexel Hill  
 Nazareth Academy School  
 Sussex Academy  
 Bishop Shanahan High School  
 The Perkiomen School  
 Bishop Shanahan High School  
 Shawmont Elementary School  
 Wissahickon High School  
 Wise and Pure Senior High School  
 Wyndcroft School  
 Upper Dublin High School  
 HB DuPont Middle School  
 Orefield Middle School  
 Springhouse Middle School  
 Charter School of Wilmington  
 Penn Alexander School  
 Mariner Middle  
 Toms River Intermediate North  
 Cedarbrook Middle School  
 Germantown Academy  
 Polytech High School  
 Toms River Intermediate North  
 McCall School  
 Carver High School for  
 Engineering and Science  
 Ursuline Academy  
 Owen J Roberts Middle School  
 Springside Chestnut Hill Academy  
 Charter School of Wilmington  
 PA Leadership Charter School  
 Lacey Township High School

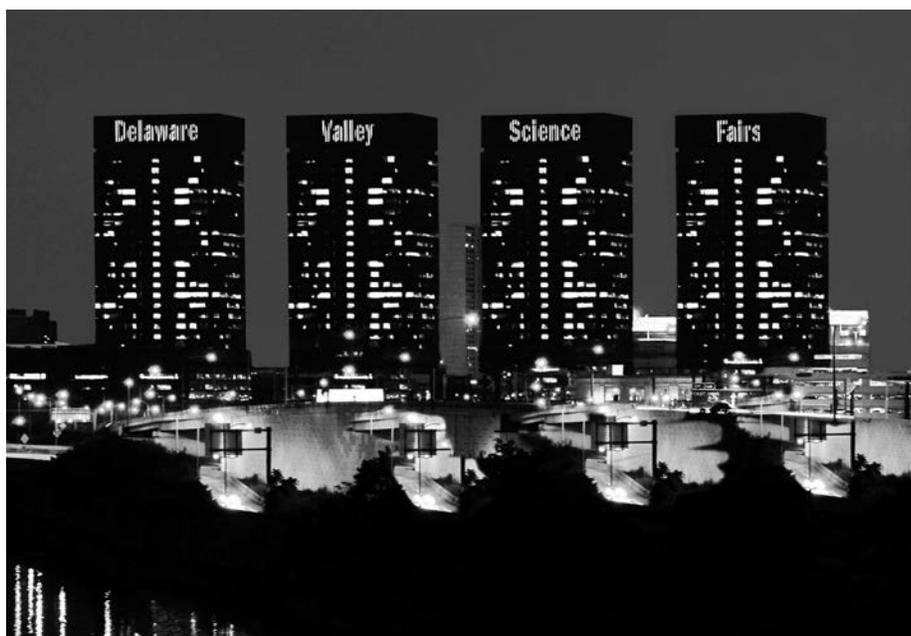
Marple Newtown High School

**TEACHER**

Brent Landrum  
 Raquel Law  
 Ellen Leaper  
 Choongkeun Lee  
 Melody Leithold  
 Suzanne Levy  
 Kim Lewis  
 Joanne Lilliendahl  
 Sandra Litvin  
 Hillary Lockard  
 Mary Loughlin  
 Elaine Loughnane  
 Rose Lounsbury  
 Stephen Lux  
 Ann MacLean  
 Emily MacNeill  
 Noel Mahmood  
 David Makowicz  
 Anita Marko  
 John Marlin  
 Lauren Martin  
 Priyanka Mathur  
 Carolyn McBride  
 Kathleen McTiernan  
 Milton Melendez  
 Robert Meletti  
 Robert Meletti  
 Julie Mest  
 Troy Minarovic  
 Promad Mohanta  
 Megan Mohl  
 Eric Morgan  
 Hannah Morgan  
 Mike Morgan  
 Kristin Morris  
 Andrea Narvaez

**SCHOOL**

Emmaus High School  
 Belhaven Avenue School  
 Villa Joseph Marie High School  
 Conestoga High School  
 North Penn High School  
 St. Dorothy School  
 Stonegate Academy  
 Upper Dublin High School  
 Unionville High School  
 Garnet Valley High School  
 Bishop Shanahan High School  
 St. Teresa of Calcutta  
 Charter School of Wilmington  
 Patton Middle School  
 Biotechnology High School  
 Pittsgrove Township  
 Springhouse Middle School  
 Bishop Shanahan High School  
 St. Jude School  
 Our Lady of Mt. Carmel Homeschool  
 Tanner G. Duckrey School  
 Great Valley Middle School  
 McBride Homeschool  
 Academy of Notre Dame de Namur  
 Claymont Intermediate School  
 Central Bucks High School- East  
 Holicong Middle School  
 Perkiomen Valley High School  
 Springhouse Middle School  
 Downingtown West Campus High School  
 Richboro Middle School  
 Campus Community Charter School  
 St. Mary Interparochial School  
 Upper Dublin High School  
 Greenberg Elementary School  
 Newark Charter School



**TEACHER**

Rick Neill  
 Huong Ngo  
 Theresa O'Brien  
 Theresaa Ocampo  
 Jennifer Odenwald  
 Chris Odom  
 Heather Olson  
 Carole Ondrovic  
 Kelly O'Neill  
 Deena Osmer  
 Brian Palme  
 Denny Panik  
 Dirk Parker  
 Lyndsay Pasi  
 Jennifer Paul  
 Emma Philbin  
 Sylvia Piznik  
 Melanie Platchek  
 Gerald Poirier  
 Cherie Burns/Melanie Polk  
 Kristen Redkoles Polk

John Porter  
 Michael Post  
 Jacquelyn Powers  
 David Price  
 Karen Ramos  
 Yajamana Ramu  
 Mark Raybould  
 Lisa Reichley  
 Thomas Reino  
 Conrad Rice  
 Chris Rickard  
 Daniel Ringenbach  
 Michael Risch  
 Carole Robbins

**SCHOOL**

French Creek Elementary School  
 St. Dorothy School  
 St. Francis Xavier School  
 Bishop Shanahan High School  
 Indian Crest Middle School  
 George School  
 Mariana Bracetti Academy  
 Arts Academy Charter Middle School  
 Gwynedd-Mercy Academy  
 ExCel  
 Upper Dublin High School  
 Coatesville 9-10 Center  
 St Peter's School  
 William Allen Middle School  
 Pennsville High School  
 Philbin Homeschool  
 Toms River Intermediate East  
 Upper Dublin High School  
 Charter School of Wilmington  
 Pennsville Middle School  
 Salem County Vocational Technical  
 School District  
 Bishop Shanahan High School  
 Parkland High School  
 Milford Central Academy  
 Upper Dublin High School  
 Coatesville 9-10 Center  
 University of Pennsylvania  
 Indian Avenue School  
 Dock Mennonite Academy Middle School  
 Villa Maria Academy Lower School  
 Charter School of Wilmington  
 Woodstown-Piles Grove High School  
 Bishop Shanahan High School  
 Great Valley Middle School  
 Robbins Homeschool

**TEACHER**

Michael Roche  
 Sheila Romine  
 Melissa Rubinich  
 Graceanne Ruggiero  
 Kelly Ryan  
 Rachel Saber  
 Joe Sarbello  
 Matthew Scanlan  
 Christie Schlaner  
 Rick Schmidt  
 Rick Schuder  
 Amanda Katherine Serenevy  
 Vishal Shah  
 Kathleen Sharp  
 David Shera  
 Stacy Sherman  
 Sherita Singleton  
 Saurabh Sircar  
 Kellena Smith  
 Melissa Soffer  
 Debra Sommers  
 Ketan Soni  
 Earlene Sorrento  
 Scott Stein  
 Ed Steinhardt  
 Rodi Steinig  
 Susan Stern  
 Cathy Stewart  
 David Stover  
 Steve Sulkowski  
 Cynthia Sung  
 Kathleen Tait  
 Rajat Tandon  
 Brian Testa  
 Nick Thompson  
 Deb Tischler

**SCHOOL**

High Technology High School  
 PA Leadership Charter School  
 Holy Family School  
 Freedom High School  
 St. Aloysius Academy  
 Southern Lehigh High School  
 Elsinboro Township  
 C.C.A. Baldi Middle School  
 Orefield Middle School  
 Upper Dublin High School  
 Charter School of Wilmington  
 Conestoga High School  
 Unionville High School  
 Quarter Mile Lane School  
 Shera Homeschool  
 Lower Alloways Creek Township  
 Youth Achievers Committee  
 Patton Middle School  
 Dock Mennonite Academy High School  
 Academy at Palumbo  
 Galloway Township Middle School  
 Youth Achievers Committee  
 Haddonfield Friends School  
 Springside Chestnut Hill Academy  
 Abington Junior High School  
 Steinig Home School  
 Springhouse Middle School  
 Arcola Intermediate School  
 Charter School of Wilmington  
 Bishop Shanahan High School  
 Unionville High School  
 J.R. Masterman School  
 Great Valley High School  
 Central Bucks High School- South  
 Dawes Avenue Elementary School  
 Great Valley Middle School



2017 ISEF participants and teachers



ISEF

**TEACHER**

Jennifer Toner  
 Kristian Torchia  
 Richard Trone  
 Mary Joy Troxel  
 Cheryl Tyrell  
 Shannon Tyson  
 Elisabeth Vonderahe  
 Peter Vreeland  
 Paul Wagenhoffer

Rolland Wakeman  
 Melissa Waldron  
 Susan Walter  
 Betty Wang  
 Carol Ward  
 Jeff Warner  
 Jeffrey Warner  
 Sean Watson  
 Christen Wayman  
 Martin Weiss  
 Matthew Wendell  
 Kathleen Whitney  
 Victoria Widergren  
 Daniel Wiczorek

**SCHOOL**

Charter School of Wilmington  
 Buckshutem Road School  
 Engle Middle School  
 Newtown Middle School  
 William Henry Middle School  
 Penns Grove-Carneys Point High School  
 Vonderahe Homeschool  
 Upper Merion High School  
 Carver High School for  
 Engineering and Science  
 Germantown Academy Middle School  
 Liberty High School  
 Unionville High School  
 Wang International Exchange Program  
 Pennbrook Middle School  
 Fernwood Avenue Middle School  
 Alder Avenue Middle School  
 Moorestown High School  
 West Fallowfield Christian School  
 Foxman Torah Institute  
 Penndale Middle School  
 Manalapan-Englishtown Middle School  
 Bishop Shanahan High School  
 The Marine Academy of  
 Science and Technology

**TEACHER**

K Wildauer  
 Jason Winistorfer  
 Judy Winship  
 John Wnek

Karen Wolfe  
 Russel Wolff  
 Cherri Worth  
 Nicholas Wright  
 Bonnie Wu  
 Stephanie Wyatt  
 Edward Wylonis  
 Vicki Yeager  
 Jennifer Yeager  
 Srinivas Yedida  
 Robin Young  
 Ann Zalasky  
 Joyce Zeka

Wayne Zhang  
 Zhihan Zhuang

**SCHOOL**

Coatesville 9-10 Center  
 Oldmans Township  
 Upper Dublin High School  
 Marine Academy of Technology  
 & Environmental Science  
 Souderton Area High School  
 Cheltenham High School  
 Toms River Intermediate South  
 Cherry Hill High School East  
 Great Valley High School  
 Coatesville 9-10 Center  
 Tredyffrin-Easttown Middle School  
 Vineland HS AMSA  
 Lenape Middle School  
 Patton Middle School  
 Young Homeschool  
 Springside Chestnut Hill Academy  
 Philadelphia Academy  
 Charter High School  
 West Vincent Elementary School  
 Patton Middle School



*Fun at ISEF*



*Judges at work*



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