2022 TRI COUNTY SCIENCE & TECHNOLOGY VIRTUAL FAIR

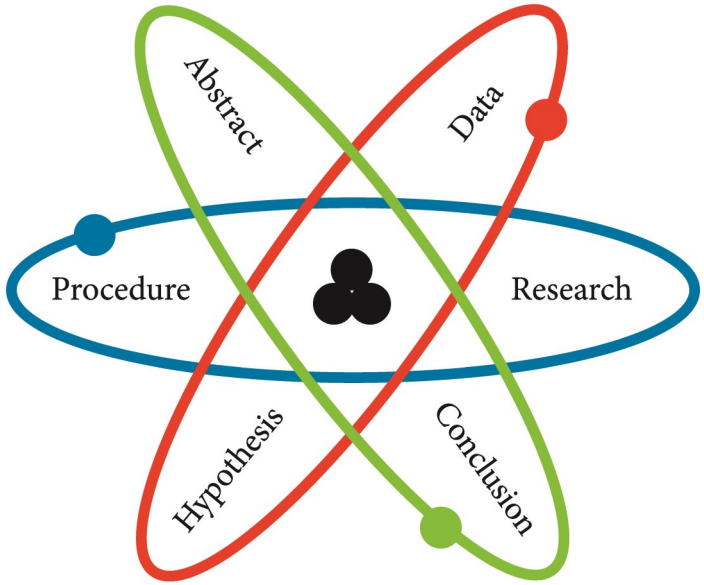
Exhibiters Grades K –12 From

Westchester <> Putnam <> Rockland with guests from Nassau & Suffolk Counties on the middle schools level
organized by

The Putnam Children's Discovery Center, Inc.

Science Teachers Association of NYS (Westchester Section)

www.DiscoveryCtr.org



Judge Edith Miller Excellence in Education

Susan Schaell Handelman Award for
Scholastic Excellence in Science & Technology

The Newman Family

Gem Level: Sponsorship: *Bronze*

GRAND SPONSOR

PepsiCo Global R&D

A few words Janice Newman

Research is based on facts as we know them, and those known facts may evolve and change over time. A hypothesis is the beginning of an educated guess and can be proven wrong. The world was flat until it wasn't, so follow your gut and be prepared to swim against the stream to seek another solution. Many scientists never learned how successful they were in their lifetimes. What seemed like failures turned into brilliant success. Now more than ever we need scientists, doctors, psychologists, nurses, lab techs, engineers and more.

Throughout the pandemic I traveled the country and different areas had quite different approaches. I was struck by how each area believed their approach was correct. I was also struck with some similarities. People were either afraid or unable to see a doctor to get early diagnosis of diseases. Young people were sequestered away from their friends and often what was near and dear to them. Graduations were canceled. Marriages were postponed. Students destined for college on a sports scholarship had no stats while others might. Businesses shuttered for good. It was especially hard on children whose escape is going to school, getting to an after-school activity and in some cases to their safer space outside the home. I was struck by how many children had difficulty learning because they literally could not read lips from a teacher, parent or caretaker. These along with other issues were unintended consequences of shelter in place. I hope our current and future scientists and medical professionals learn from this unfortunate experience and have a much better plan should something like this hit us again.

Why was this year's Fair virtual? Rather than scramble in the eleventh hour like we did in 2020, we decided to be proactive and hold this year's Fair as virtual. Also, some schools in Long Island were facing no regional fair to send their best and brightest. For the second time we opened the Fair up to previous winners and invited Long Island to be a part of our Fair. I am extremely impressed at the caliber of exhibits considering all the obstacles. I am also mindful that several schools still were unable to participate. I hope that changes for 2023. We need to reach as many young people interested in STEM as possible. It is entirely possible that we will not hold a live Fair in 2023 either. Before we have a collective UGH! I would like to tout the advantages of having a virtual event. We do not have to get 100 plus judges to one location. In a virtual setting. We are able to attract judges from all over the USA. We are able to allow many more eyeballs than just 3 judges per exhibit. We do not have to force students to choose between competing on a specific Saturday and another activity. And most importantly, it is impossible to get the volunteers necessary to handle 500 people (students, teachers, judges) or a physical site to hold 500 people across 4-5 large spaces. So, 2023 may mirror 2022.

I would like to thank the parents that often had their schedule changed on a dime, and the ones who were thrust into the role of principal, teacher, playground monitor, cafeteria aide and more. I would like to thank the teachers that quickly adopted to online or hybrid teaching. There were schools that worked with me on "how" to get their students selected to come to Tri County since they had not held their Fairs. In life, there are those that throw their hands up in defeat and those that look for solutions and, in an emergency, this is magnified. So, I applaud the schools that looked for solutions to choose students to come to us and to the many volunteers and judges who decided to be a part of the solution.

I am in awe of the scientists who were part of Operation Warp Speed and were able to quickly improve on and develop vaccines to combat this pandemic. We need you to continue your science endeavors and become the next group of scientists that rise to the occasion to solve the next infectious disease, pandemic or whatever life throws at us. Looking forward to seeing everyone in 2023.

Meet the Keynote Speaker

JUDY VIGAR

Vice President R & D
Global Beverage Platforms

Judy is a passionate and hands on Engineering leader in PepsiCo R & D, with 39 years experience in the food industry. In her current role, Judy is responsible for Global Beverages R & D Process Engineering, Water Technology, Equipment Development, and Operations. She has led R&D for the development and launch of many new beverage products around the world for Carbonated Soft Drinks, Gatorade, Tropicana, and other PepsiCo beverage brands. She has expertise in Engineering and Manufacturing of Carbonated and Non-Carbonated Beverages.

While at PepsiCo, Judy and her family spent close to 4 years in Europe, where she created and led a Beverages R&D satellite lab and was part of the acquisition team for two large Eastern European beverage companies. Judy joined PepsiCo in 2002, following almost 19 years with Procter and Gamble in Food and Beverage Manufacturing, Process Engineering and Product Development. She holds two patents in the area of chelating agent technology. She graduated magna cum laude from Brown University in 1983, with a Bachelor of Science degree in Electrical Engineering and is a member of Tau Beta Pi.

Judy is a certified Project Management Professional through PMI and is currently working towards her Masters in Food Science at Rutgers University. Judy sits on the Board of Trustees at Saint Elizabeth Community and is a member of the President's Board of Advisors and Parent Leadership Council at Roger Williams University. Judy is also a member of the vestry at St. Stephen's Episcopal Church. Judy has one son, James, who is in his third year at Roger Williams University, studying architecture. Judy enjoys music, water sports, puzzles, and walking.

WE STRONGLY SUGGEST WATCHING **JUDY VIGAR**

https://discoveryctr.org/tri-county-science-and-technology-fair/ Click on Awards Ceremony

She delivered a phenomenal Keynote Address

TO VIEW THE AWARDS CEREMONY & LEARN MORE ABOUT THE FAIR

WWW.DISCOVERYCTR.ORG

OUR MASTER OF CEREMONIES (Awards Video)

Matthew Newman

Matthew recently made SUNDAY COMPANY.

Alumni of the Sunday Company include: Lisa Kudrow, Will Ferrel, Kristen Wiig, Melissa McCarthy and many, many more! Matthew's work at the Groundlings theater can be found on his YouTube page by searching **"Matthew Newman Groundlings."** Only a select few have ever made it onto that stage and it takes many years to work your way up. We can only suggest the ones that are PG in nature, however there are many very funny ADULT sketches. Our PG Suggestions: "SURE", "Matthew Newman Writing Lab Monologue" and "Wicked - Writing Lab Sketch". We are so excited for him taking this next step on his journey.

Matthew Newman is an actor, writer, comedian and a graduate of Emerson College class of 2015 Screenwriting/Media Production. Starting in May he will be performing sketch comedy every Sunday at the Groundlings Theater in Los Angeles, California as a member of their Sunday Company. In college, he won an EVVY award for Outstanding Writing in Television, and hosted the 33rd Annual EVVY Awards — which took home the **College EMMY for Outstanding Variety Show**. In College he was part of Jimmy's Traveling All Stars (2011-2015) aka JTA Comedy. Pole-Ice Man is a great adult sketch to watch on JTA Comedy, found on YouTube. While in college, 2012-2013 he was one of the anchors on Breaking News, Emerson College's satirical news parody show similar to SNL news. Matthew worked for a time at the Colbert Report and FX Network.

In addition to the Groundlings Theater, Matthew is also featured in commercials for Super 8 Motels, Yahoo Fantasy Sports, and has done voiceover for a commercial with over 5 million views on YouTube for SeatGeek. Matthew is also a founding member of comedy troupe Flambè Comedy, a group that garnered 250,000 views on Funny or Die's Facebook Live page. Although their comedy is mostly intended for adults, and we encourage that ADULTS only view his material, there are a few titles that are more PG in nature on the Flambe Comedy YouTube channel: "This Mission is Actually Impossible," "Dave," and "Gun Knife Fight." Please follow him and like him on social media if you feel so inclined, every extra fan counts!

YouTube picture

Other credits include Writer's Asst. -- Gayme Show!, Quibi and Improv: Groundlings Theatre & Upright Citizen's Brigade. He is a founder, writer and actor on Flambé Comedy,

Matthew has volunteered for the fair since he was 5 years old (maybe even younger). He is the son of Tri-County Fair director Janice Newman and the grandson of Judge Edith Miller, with whom an award in our fair is named after. Matthew got his start performing in plays through the Putnam Children's Discovery Center and we wish him nothing but the best as he continues to pursue his dreams!

Matthew can be found on: **Tik Tok**, **IG**, and **Twitter @mattsnewmans. Flambe Comedy on YouTube, Matthew Newman Groundlings on YouTube**, Please follow him and like him on social media if you feel so inclined, every extra fan counts!

A FEW WORDS ABOUT THE ORGANIZERS

The Tri County Science Technology Fair was founded in 1990 by The Putnam Children's Discovery Center, a volunteer organization. The original Fair was a countywide competition for Putnam County. In 1993 the Fair expanded to a regional Fair to include Westchester and Rockland Counties. The Fair's primary purpose is to reward children who have an interest in science, math and technology. Public, private and home schooled students from the three counties are welcome to participate in the Fair, A STEM Activity. Only children in the same school can participate as a team.

Elementary and middle school students gain entry to our Fair by placing in a Science & Technology Fair organized by their school. Home schooled students are entered based on their parent or the person in charge of their home schooling. The local organizers in the public or private schools determine who will continue on to our Fair. It is recommended that they encourage their first or second place winners. They can send up to twelve exhibits in the elementary and middle school divisions. There are nine categories for K-8 *Biology, Chemistry, Environment, Earth/Space, Engineering/Technology, Health & Medicine, Math/Computers, Physics. & Psychology On the High School level two categories have been dissected into two: Health & Medicine is now: Health & Nutrition; Medicine and Medical Science & Technology. Psychology is now: Clinical/Social Psychology; Physiological/Experimental Psychology.*

To view the rules visit **www. DiscoveryCtr.org**. For the purposes of our Fair the Divisions are: Division "E" grades K-4 / Division "M" grades 5-8 Division "H" grades 9-12. Schools that cross into two divisions can send 12 exhibits grades K-4 and 12 within grades 5-8 and 18 within grades 9-12. High School students are "direct" entered by either their principal or science department chairperson, or District STEM coordinator. The majority of high school students presenting at our Fair have opted for individual empirical or theoretical research projects as these projects meet the eligibility requirements for the NYS level. Three students and six alternates on the high school level will be selected to continue on to the NYS Science Congress. In the Middle School Division several students may be selected for further competition at the Broadcom Masters a National competition organized by Society for Science & the Public (SSP).

The Center wishes to thank our sponsors, the volunteers, committee leaders, and the endless hours of dedication by the presenting students and their families, without whose support there would be no Fair.

Beware of the words "settled science" as there is no such thing as "settled science". Science is always evolving. So if you believe something is "different" explore it, try to defy it and see where that road takes you. Maybe it takes you back to "accepted science." But we will only learn when scientists aim to prove or disprove theories. Please continue to explore our future depends on it.

Winners from the 2022 Tri County Virtual Fair available **www.DiscoveryCtr.org** after May 1.

Your school can have a fun Hands on Science Program complete with an educational magic show offered on Saturdays or Sundays for Jewish Day Schools. For complete details visit online at www.DiscoveryCtr.org or call 845 621-1260

DONATIONS

First and foremost thank you to our Grand Sponsor

PepsiCo R & D Global

Grand Sponsor Level

Janice Newman

Lightening Rod—Aluminum Level

Science Teachers Association

Westchester Section

Judge Edith Miller Excellence in Education

Friends Of Science- Heart Level

Matthew Newman & Mark Newman

Friends Of Science– Leg Up Level

Michael & Larisa Mulroney

Friends Of Science– Shot in the Arm Level

Paula Cancro Karina A Fabbie

Marc Goodman Daniel Kreiner

David Mawdsley

Friends Of Science– Boost to the Fair Level

Nikki Barker Olive Bohdanowycz Ariella Blackman

DONATIONS WELCOME

Donations are tax deductible per 501 (c) 3

Please select a **QR** code and make a donation.
Thank you in advance

Putnam Children's Discovery Center Inc.
General Fund

Tri County Science & Technology Fair

OLD SCHOOL MAIL A CHECK

PCDC
PO Box 222
Carmel, NY 10512

Or PayPal
JNewman@DiscoveryCtr.org

Marilyn Reiner
Science in Education Fund

Judge Edith Miller
Excellence in Education Fund

Susan Schaell Handelman
Award for Scholastic Excellence
in Science & Technology

Frank Iacopelli

Judges Team led by Frank Iacopelli with support from Mark Kramer.

The judges team is tasked with recruiting judges, assigning exhibits and monitoring that all is going according to plan. This is difficult because we do not know which categories will need the most judges. Due to the nature of the type of judge recruited, it is entirely possible that two months ago they had the time but when we need them, they have a conference or surgery and need to be replaced. Over the years, this has changed so much that we divided the exhibits into more targeted categories. While this division helps, it doesn't eliminate the need for an incredible number of judges, and it is important that they be well qualified in their category. As a Fair we have always found the best judges to evaluate the projects they look at.

Mark Kramer

THANK YOU TO ALL THE JUDGES FOR YOUR TIME & DEVOTION

Dr. Nadine Agosta
Mr. Armaan Ahmed
Dr. Faraz Alizadeh
Prof. Barbara Allen-Lyall PhD
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Dr. Andrew Alto
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Dr. Steven R Carlough
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Dr. Tamara Noelle Chambers
Ms. Payton Charlton
Mr. Chi Yang Lee Chen
Mr. Jack Yuanwei Cheng
Dr. Ali Chettih
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Mr. Timothy Connelly
Mr. Mitch Cooke
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Dr. Victor H Cornejo
Ms. Nicole Couturier
Dr. Sam Cowart
Dr. Donna Crawley

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Ms. Lauren DeMarco
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Mr. Rachmadian Wulandana
Prof. Beizhan Yan
Mr. Michael M Yeosock

JUDGES

JUDGES COMPANIES

Where our judges come from

Adelphi University
Albert Einstein College of Medicine
Amazon Web Services
American Museum of Natural History
Arcus Biosciences
Binghamton University
Black Talon Security, LLC
Borough of Manhattan Community College
Boston Children's Hospital
Brandeis University
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Johns Hopkins University
LAC+USC Medical Center
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Lamont-Doherty Earth Observatory
Lehman College, CUNY
Lewis University
Long Island University
Manhattan College
Manhattanville College
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Montclair State University
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Sarah Lawrence College
St Francis College
St. John's University
St. Thomas Aquinas College
Stevens Institute of Technology
SUNY New Paltz
SUNY Old Westbury
The College of Westchester
The Cooper Union
The School for Young Performers
TJMAXX
Touro College
Town Center Pharmacy
UC Berkeley
Uniformed Services University of the Health Sciences
United States Military Academy
University at Buffalo
University of Connecticut
University of Maryland
University of Miami
University of New Haven
University of South Florida
Vassar College
WeatherMARK Pro
Westchester Community College
Willis Towers Watson
Yale New Haven Health
Yeshiva University
Yorktown High School

ELEMENTARY SCHOOL

For purposes of the Fair Elementary is grades K-4 Two or three on a project we use alpha system with the student closest to "A" being first in the sort.

We are especially impressed that these projects came to us. This year was not easy to say the least and the fact that these students chose to rise to the challenge was particularly heartwarming.

BIOLOGY

Erin Kilian	*Putnam Valley Elementary*	The Taste of Sight	**Excellent**

CHEMISTRY

Leah Craane	*Putnam Valley Elementary*	Can You Blow Up a Balloon with a Banana?	**Excellent**
Alyssa Nask and Yuneeb Uzun	*Daniel Webster Elementary*	Red Cabbage Natural pH indicator	**Excellent**

EARTH / SPACE

Adrian Abreu	*Trinity Elementary*	What was the Spinosaurus's Lifestyle?	**Excellent**
Elijah Cruz	*Putnam Valley Elementary*	Minecraft Mining: Similar or Different to Real Mining?	**Excellent**
Suwaida Lawal	*Trinity Elementary*	Why do we have Leap Years?	**Excellent**
Anthony Mondelli	*Putnam Valley Elementary*	Gravitational Pull	**Excellent**
Shpend Paloka	*Putnam Valley Elementary*	Layers of Earth	**Excellent**

ENGINEERING / TECHNOLOGY

Rawan Abdelqader	*Jefferson Elementary*	The Great Things About Wind Turbines	**Outstanding**
Tomoya Asami, Kian Fonss, and Nathaniel Strand	*FE Bellows*	Electricity From Wind	**Excellent**
Cam Casimir	*Putnam Valley Elementary*	Pneumatic Motors	**Excellent**
Samar Vakil	*Greenville*	The Website Project & Fundamentals of the Internet	**Excellent**

ELEMENTARY SCHOOL

ENVIRONMENT

Rory Degnan & Evangeline Maldari	*FE Bellows*	What Liquid Makes Plants Grow Best?	**Excellent**
Marc Langus	*FE Bellows*	What substance melts ice the fastest?	**Excellent**

HEALTH & MEDICINE

Theo Atherton & Matteo Ferrante	*FE Bellows*	Repeat After Me!	**Outstanding**
Adriana Ciullo & Rhyan Zubradt	*Putnam Valley Elementary*	The Effects of Age on the Knowledge of Smoking	**Excellent**

PHYSICS

Zachary Gherardi and Robert Leisengang	*Putnam Valley Elementary*	PVC Catapult	**Excellent**
Delroy Mcwilliams	*Putnam Valley Elementary*	Friction experiment	**Excellent**

PSYCHOLOGY

Enrique Guedez & Mason Long	*FE Bellows*	How Does Peer Pressure Affect Kids?	**Excellent**

Janice Miller Newman
Education Award for Excellence in Developing Future Scientists

First Award Goes To

F.E. BELLOWS ELEMENTARY

SPECIAL AWARDS FOR MIDDLE SCHOOL (grades 5-8)

Susan Schaell Handelman Award for Scholastic Excellence in Science & Technology

The best Middle School with the highest overall average among all other Middle Schools.

Susan Schaell Handelman has been an educator in private and public schools in CT and NY, and a volunteer for many organizations including the PCDC. Being an R.N. and teacher, Family Science Nights included Susan with the 3D human body puzzles and eye & ear models, sharing anatomy and physiology facts with curious children and their chaperones. She arranged the initiation of the Hands On Science classes at the Kent Schools in Carmel, NY to provide day and evening enrichment workshops, which attracted participants from other districts as well.

Originating from a small, rural community in Illinois, Susan graduated from Northwestern University, having received a full academic scholarship to study childhood development and education. A Master of Science degree from NY Medical College and Pace led to Nursing Board Certifications as a Family Nurse Practitioner and also Women's Health Care Nurse Practitioner ("pioneer" positions). She was also a Certified Electrologist.

Though now retired these ongoing educational, science, and health interests inspired a special appreciation and support for the quality programs PCDC brings to communities. She has recruited funding, teachers, judges, shared PCDC judging protocols, and obbied for science fair publicity resulting in increased participation.

Her late husband James, and sons Zach and Jed participated in PCDC endeavors also. Grandson Asher is expected to continue the tradition.

To make a donation, please make checks payable to PCDC and memo SSH or *Susan Schaell Handelman Award for Scholastic Excellence in Science & Technology.*
Mail to PCDC PO Box 222 Carmel, NY 10512.

Or use PayPal: JNewman@DiscoveryCtr.org

Judge Edith Miller Excellence in Education

Award for top overall MS score

Edith Lorraine Meyer was born into poverty on December 3, 1929. Her parents Earl &Florence Meyer were considered the working poor. She lived with her sister Yvonne in a one bedroom apartment with a bath tub in the kitchen. It was one of the few flats to have a toilet inside the apartment. She brought herself from a place of poverty to a place of prominence by committing to school and education. She realized the only way out of the cycle of poverty was college so she walked to school with cardboard in her shoes to save the nickel bus fare. These savings enabled her to attend Hunter College. She went on to St John's Law School and graduated as the only woman in her class. After passing the bar exam, she decided to focus on having a family. With a law degree under her belt she knew she would never be poor again. Five years later she started a job at The New York City Legal Aid Society where she could assist people who were less fortunate. She quickly rose to the head of the office. She went on and was appointed by Mayor Lindsay to the Family Court of NY, where she became the administrative judge. During her time in family court, she was the presiding Judge on the famous Willie Bosket case which became instrumental in helping to change NYS law. The ramifications of this case resulted in children under age 16 committing heinous crimes could be tried as adults. The moment that made her proudest was becoming the FIRST woman to be appointed to the Appellate Term of the NYS Supreme Court. Judge Edith Miller passed on to her children, Brian and Janice the importance of education, Janice, her daughter, founder of The Putnam Children's Discovery Center and the founder of the Tri County Science & Technology Fair created a fund in her honor. The Discovery Center annually hosts the Tri County Science & Technology Fair. The first recipient of this award was in 2005. The middle school exhibit with the highest score receives The Judge Edith Miller Excellence in Education Award. Judge Miller is survived by her two children Janice & Brian and three grandchildren, Michael, Mark & Matthew and great grandchildren, Jasmine and Jace.

To contribute use PayPal JNewman@DiscoveryCtr.org
or checks payable to PCDC memo: JEM
PO Box 222 Carmel, NY 10512

MIDDLE SCHOOL

For purposes of the Fair Middle School Division is for Grades 5-8 Two or three on a project we use alpha system with the student closest to "A" being first in the sort.

Students grades 6,7,8 are eligible for selection for further competition at BROADCOM MASTERS for top 10% expressing interest by April 30th at noon & Alternates are **the** top 11-18% in grades 6,7 and 8. The alternates may take a slot after the Nominees have made their intentions known. All top 18% receive a Broadcom Nominees medal since at the time of tally we do not have our actual list.

There are two Special Awards for Middle School:

Judge Edith Miller Excellence in Education for highest score

Susan Schaell Handelman Award for Scholastic Excellence in Science & Technology The best Middle School with the highest overall average among all the Middle Schools.

BIOLOGY

Harrison Arak and Luca Ferrante	*FE Bellows*	Music and Mutts	
Tristan Bissoondial	*Grand Ave MS*	Investigating the effects of ozone on the gametophytes of	
Avery Borman	*Louis M Klein MS*	Reading Vs. LED Lights	
Jordyn Dioguardi, Brigid Flanagan, and Emma Gallagher	*Grand Ave MS*	Does colloidal silver produce a big enough zone of inhibition around Escherichiacoli to be considered a fair substitute for antibiotics?	
Hallie Gillison and Temidire Oladeji	*Grand Ave MS*	The Effect of Hyaluronic Acid on the Regeneration Rate of	
Vivaan Gupta	*Greenville*	How Covid Affects Human Body	
Joya Ishak and Juliet Sayer	*Edgemont Jr/Sr HS - MS*	What's In Your Food? Are Non-GMO Food Labels Factual?	**Tied Second**
Salvatore Lobrutto	*Grand Ave MS*	The effect of nitrogen-fixing bacteria vs. fertilizer on the growth of pea plants.	**Third Place Broadcom Nominee**
Isadora Morello	*George Fischer MS*	Can we make our own Bioluminescence?	
Abigail Rooder	*Seely Pace*	Are Dogs Paws Dirtier than Hands?	
Ananya Shah	*Edgemont Jr/Sr HS - MS*	Red light, Blue light: The Effect of Different Lighting Conditions, pH, and Temperature on the Circadian Rhythm of Dinoflagellates (Pyrocystis fusiformis)	**Tied Second Place**
Lily Slizowski	*Mahopac MS*	How to Keep Flowers Alive Longer	
Emma Wert	*William B Ward*	DIfferent Dog Speeds	

MIDDLE SCHOOL

CHEMISTRY

Andrew Babu	*Albert Leonard MS*	Apples to Oranges	
Eileen Bergerson	*Mahopac MS*	The Goldilocks of Crystals	**First Place Broadcom Nominee**
Ella Biolchini	*Mahopac MS*	Dough What You "Knead" To Know	
Aoife Bronnimann	*Rye Neck MS*	What Makes Ice Melt Fastest?	
Anna Dowling & Erin Murphy	*George Fischer MS*	Popping Boba: How Does Acidity Affect Spherification?	
Bailey Eapen & Sophia Hull	*Rye Neck MS*	How to Make Ph Test Strips Out of Household Items	
Noah Feffer & Vivaan Shahani	*Seely Pace*	Gallium and it's surprises	
Lilia Hafid	*Albert Leonard MS*	Time to Dry Off (Water in Masks)	
Eliana Johnson	*Daniel Webster Elementary*	Does the Milk Matter: Milk type and fat content and cupcake moisture and density	**Third Place**
Siddanth Karthik, Arjun Rajdev, and Hillary Schuldenfrei	*Edgemont Jr/Sr HS - MS*	Electrolysis of Water	
Tyler Nask	*Albert Leonard MS*	Red Cabbage Natural pH indicator	
Lucas Palchik	*Albert Leonard MS*	An EGGcellent TOOTHsperiment	
Dylan Pirrello	*Albert Leonard MS*	The Power of pH	
Lia Seelenfreund	*Albert Leonard MS*	All Rise: A Comparison of Cupcake Heights Containing Combinations of Gluten-Free Flours	**Second Place Broadcom Alternate**

EARTH / SPACE

Jacob Abraham	*FE Bellows*	How Does COLOR affect Heat Absorption?	**Tied Second Place**
Briget Festo, Anders Follett, and Lila Shapiro	*George Fischer MS*	Mass Extinction	
Anika Shah	*Greenville*	The effect of stratospheric pressure, temperature fluctuation, and UV-C radiation on the viability and biological properties of the kombucha biofilm (SCOBY)	**Tied Second Place**

MIDDLE SCHOOL

ENGINEERING TECHNOLOGY

Benjamin Altavilla & Lorenzo Paniccio	*George Fischer MS*	Hydraulic Arm	**Second Place**
Dylan Arouh	*Rye MS*	Design of a Novel, Ferrofluid Based Vessel for the Recovery of Ocean Bound Micro plastics	
Lila Dowling	*George Fischer MS*	Infinity Mirror: A Tunnel to Nowhere	
Atharv Gandhi	*Louis M Klein MS*	Study Board	
Kyler Leung & Jasmine Wang	*Greenville*	The Great Egg-periment! A study of the Dissipation of Kinetic Forces	
Claryn Pierre	*George Fischer MS*	Store-Bought Aquifer vs. Homemade Aquifer	
Noah Rosencrantz	*Albert Leonard MS*	Aren't Chores Such A Drag? Well So Is Air.	**First Place Judge Edith Miller Award Broadcom Nominee**
Noah Sayer	*Seely Pace*	Will the Solar Cooker I Built Cook S'mores?	
Hank Sherwin	*Greenville*	Comparing Efficiencies of Computer Search Algorithms for Different Simulated Games	**Third Place**
Thomas Yan	*Louis M Klein MS*	Skyscraper Design and Wind	

ENVIRONMENT

Julia Cucinotta	*FE Bellows*	Meltdown	
Daniel Lin & Joseph Litman	*Grand Ave MS*	How Does the Integration of Multiple Variants of Non-Invasive Vegetation Into a Scaled Model of a Hill Compare to Man-Made Erosion Control Systems?	**Third Place**
Aarav Prasad	*George Fischer MS*	Is the Environment an Unlikely Beneficiary of the COVID-19 Pandemic?	**First Place**

HEALTH MEDICINE

Rylie Im & Amelia Kim	*Greenville*	pH of drinks of adult and children	
Juliette Moore	*Rye Country Day School*	How Do Different Cooking Methods Affect Ascorbic Acid Levels in Diospyros kaki and Momordica charantia?	**Tied First Broadcom Nominee**
Eric Myung	*Louis M Klein MS*	To Mask or Not to Mask	**Tied First Broadcom Nominee**
Aanika Roy	*Pelham MS*	In a Heartbeat: The Effects of Ethanol and Caffeine on the Heart Rate of Daphnia Magna	**Second Place Broadcom Alternate**
Jonah Weissman	*Seely Pace*	Germs Be Gone: Which Hand Cleanser Is Best?	

MIDDLE SCHOOL

MATH

COMPUTES

Arjun Gupta	*Greenville*	Artificial Intelligence and Facial Recognition	
Owen Lansford	*Robert E Bell*	Bloggy	
Cory Seelenfreund	*Albert Leonard MS*	B4 and After: Creating a Bingo Formula	**Second Place**
Tomas Tvaroska	*Pelham MS*	An AI Solution for Cyberbullying	

PHYSICS

Ava Advani & Mira Browning	*FE Bellows*	How Does Temperature Affect the Attractive Force of a Magnet?	**Second Place**
Max Fabbie & Evin Melendez	*Mahopac MS*	Magnetic Fields	**Third Place**

PSYCHOLOGY

Elle Barker & Valentina Ferrante	*Rye Neck MS*	Hypothe-zzz: A Sleep Study	
Scarlett Hartzman	*Albert Leonard MS*	Speed Reading Techniques	**First Place Broadcom Alternate**
Yuna Hong & Madelena Rubenstein	*Rye Neck MS*	Pets vs. Happiness Experiment	
Marissa Lusardi & Lily Tse	*Louis M Klein MS*	How does music affect how the brain processes information?	
Carolina Pappalardi	*Daniel Webster Elementary*	The Need for Green: Covid-19's Effect on Urban Green Space Planning	
Emily Rossi	*Albert Leonard MS*	Memory and Songs: The Effect of Music on Memorization	**Second Place**

Susan Schaell Handelman

Award for Scholastic Excellence in Science & Technology

Albert Leonard Middle School

SPECIAL AWARDS FOR HIGH SCHOOL (grades 5-9-12)

MARILYN REINER

SCIENCE IN EDUCATION FUND

Award for top overall HS score

In the fall of 2004 we lost a strong supporter within our science community. Marilyn Reiner, a retired high school science teacher from Pearl River HS, passed away unexpectedly. She elevated the standards for high school students by creating an additional competition for the top nine students at the Tri County Science & Technology Fair. She was the president of the Westchester Section of The Science Teachers Association of New York State and worked tirelessly on the Tri County Science & Technology Fair.

In January 2005, The Putnam Children's Discovery Center started a fund in her honor, and the monies raised are utilized solely for science activities for children. The Discovery Center reaches children in Putnam, Rockland, Westchester, Dutchess and Orange counties in New York State. The programs that currently will benefit are: Family Science, a program that helps to take the mystery out of science; encourages parents not to be afraid of participating in their local science fairs. The program also offers science fair project suggestions and support when "you get stuck" during the project process. **Hands On Science,** a program (grades K-8) that takes place in school for students interested in science. The program offers several hands on activities where questioning is encouraged and the children work with a teacher in small, informal groups. Tri County Science & Technology Fair, an annual event for grades K-12. The best and the brightest students exhibit their projects, competing on a regional level. Three of the best researchers on the high school level go on to the NYS competitions.

To make a donation, please make checks payable to PCDC and memo MRSE or Marilyn Reiner Science in Education. Mail to PCDC PO Box 222 Carmel, NY 10512. Or use PayPal: JNewman@DiscoveryCtr.org

The Frank Iacopelli Award for Academic Excellence in Science, Technology, Engineering & Mathematics

for Top High School with the highest overall score among all other high schools that have a minimum of three exhibits entered in the competition

This new High School award is named after one of the hardest working people involved with the Fair. Please watch his remarks online:

https://discoveryctr.org/tri-county-science-and-technology-fair/ Click on Awards Ceremony

Joseph Sciame is a Fellow, Westchester section of the Science Teachers Association of New York State. He also serves as liaison of Bronx-Westchester STANYS to the Tri-County Science Fair, helping the top students at this competition

WE STRONGLY SUGGEST WATCHING **JOSEPH SCIAME** during our AWARDS CEREMONY ONLINE

https://discoveryctr.org/tri-county-science-and-technology-fair/ Click on Awards Ceremony and go about an hour in to listen to him

The Tri County Science & Technology Fair has been in a fantastic partnership with The Science Teachers Association of NY (Westchester Section) since 1990 when the first idea of a regional Fair was born. It was then President Joanne Quinn and Executive Director Janice Newman who forged a friendship that would grow into the birth of the Discovery Center's Hands On Science program and the Tri County Science Technology Fair . Both are fantastic opportunities for the student looking for a successful career in science. When Joanne retired and moved to Florida she passed the torch to Marilyn Reiner . Through the years the alliance with STANYS has remained firm and we are pleased to have Joe Sciame, speak at our awards ceremony. Always delightful , funny and reminding students to keep science in their daily lives. It is with great pleasure that we recognize this alliance of 30 years in 2020. We encourage science teachers to join STANYS

30 PLUS YEARS STANYS & PCDC

HIGH SCHOOL

For purposes of the Fair High School Division is for Grades 9-12 Two on a project we use alpha system with the student closest to "A" being first in the sort

The top 5 students will be selected to continue to NYS Science Congress. *There will be 4 alternates in the event that any of the 5 cannot go.*

There is one Special Awards for High School:

Marilyn Reiner Science in Education for highest score

BIOLOGY

Aadi Bhattacharya	*Rye Country Day School*	Identifying Unique Characteristics of Cancer-Reactive Germinal Centers Using Multiplexed Immunohistochemistry	
Alicia Chang	*Ardsley HS*	Interactions Between PTEN and Moesin in Regulating Cellular Morphology	**Tied Third Place**
Sydney Charron	*Byram Hills HS*	Exploring signaling-dependent inflammatory gene expression responses in IL-33-treated human skin mast cells through IgE receptor cross-linking stimulation.	**Tied Third Place**
Jerry Chen	*White Plains HS*	An Analytic Comparison of Detection Methods for Avian Influenza Virus	
Marcus Chung	*White Plains HS*	The Immune Stimulatory Effect of Bacterial Oligoribonucleotides	
Kayla Cohen	*Hendrick Hudson HS*	Analyzing Treatment Methods for Canine Behavioral Disorders	
Gabriella Colabello	*Byram Hills HS*	Investigating the unexplored genome: Evaluating the role of the long non-coding RNA (lncRNA) Morrbid in the development of Inflammatory Bowel Disease (IBD)	
Emily Collura	*North Salem HS*	The Study of Wolf Behavior	
Alma Corona	*Westlake HS*	Testing Reissner's Membrane Specific Promoters in Explant Cultures	
Cindy Dedianous	*Scarsdale HS*	Motion encoding in ON alpha and PixON retinal ganglion cells	
Jenny Deng	*White Plains HS*	Measuring Epigenetic effects on Arabidopsis in response to salt stress	
Lea Duesterwald	*Horace Greely HS*	Using Machine Learning to Predict Ct Values as a Proxy for Viral Load from SARS-CoV-2 Genomes	
Siena Edwards & Anastasia Tchernikov	*Westlake HS*	Mission to Mars: Investigating the Use of Low-Dose Radiation Pre-Treatments as a Countermeasure to High-Dose Ionizing Galactic Cosmic Radiation	

Biology continued on the next page

HIGH SCHOOL

BIOLOGY

Zaynab Faisal	*Harrison HS*	The Effect of Rising Water Temperatures on the Righting Response of Pagurus longicarpus: A Study of the Effect of Climate Change on the Intertidal Zone	
Danielle Freedman	*Byram Hills HS*	Identification of antibiotic-producing bacteria isolated from the epidermal mucus of great white sharks as a potential antimicrobial therapeutic	
Kiera Goff	*Somers HS*	Determining ideal level of arousal and balance between sensitivity and specificity to create the most efficient working dog	
Christina Kelly	*Westlake HS*	A Novel Investigation of the Effects of EphA4 on Axon Regeneration in the Spinal Cord	
Nora Lowe	*Byram Hills HS*	Making sense of disorder: Investigating intrinsically disordered proteins in the tardigrade proteome via a computational approach	**Tied Second Place**
Rohan Malik	*Rye Country Day School*	Promoter Capture Hi-C Modeling Elucidates Regulatory Lanscape in Immune Cells	**First Place Science Congress Nominee**
Colin Mccann	*Yorktown HS*	Developing Small Molecule Blockers for the CD47-SIRPα Interaction	
Elena Mccann	*Harrison HS*	Effects of Ethanol on the Regeneration of Lumbriculus variegatus in Relation to Fetal Alcohol Syndrome	
Lindsay Mosberg	*Irvington HS*	Loci in the Genome Associated with CAD (What the Coronary Artery Disease Genetic Layout Looks Like)	
Jacob Nahmias	*Fox Lane HS*	Measuring the Effects of a Heated Breathing Circuit at Maintaining the Body Temperature of Cats During Complete Oral Assessment and Treatment of Stage Three Periodontal Dental Disease	
Anika Pattabhiraman	*Edgemont Jr/Sr HS - HS*	Evaluation of the Amyloid Beta Protein	
Joanna Paul	*Irvington HS*	Natural Variation Shaping Epigenome Dynamics With an Emphasis on Transcription Factor Binding Sites: An Extreme Temperature Response in Arabidopsis thaliana	
Lara Rancic	*Irvington HS*	Observing Tobacco Plant Responses to Stimuli Through Bioluminescence	
Andrew Rittenberg	*New Rochelle HS*	Validity of Simulated Microgravity Data on Zebrafish Embryos to Human Data Using Transcriptomics and Data Analysis	

Biology continued on the next page

HIGH SCHOOL

BIOLOGY

Jiya Singh	*Edgemont Jr/Sr HS - HS*	The Effect of Parental PTEN Mutations on the Mortality Rate of Mice	
Gautam Soni	*Edgemont Jr/Sr HS - HS*	Analysis of Phf6 Dependent Alternative Splicing in Hematopoietic Stem Cells	
Arianna Tabankin	*Byram Hills HS*	Dengue virus nonstructural protein 1 activates p38 mitogen-activated protein kinase in human endothelial cells via toll-like receptor 4	**Tied Second Place Science Congress Alternate**
Brett Waldman	*Fox Lane HS*	Investigating binding capabilities and thermodynamic properties of a computationally-designed binder protein on monomeric CTLA-4	
Wave Waldman	*Sleepy Hollow HS*	Association of cholesterol on neurodegeneration in multi-ethnic cohort from the HABS-HD	
Vivien Wong	*Edgemont Jr/Sr HS - HS*	The Efficacy of Novel Fungicides Gatten® and Parade20SC® in the Control of Idared Apple Powdery Mildew (Podosphaera leucotricha)	
Jennifer Zhinin	*White Plains HS*	Individual Problem Solving in Captive Coyotes	

CHEMISTRY

Matteo Perillo	*Mahopac HS*	Improved Pretrial Method to Predict the Ability of New Additives to Increase Stability of Sn/Pb Perovskite Precursor Solutions	
Daniel Sheinin	*Yorktown HS*	A Novel Approach to Metal Recycling via Machine Learning-powered Solubility Prediction	**Third Place**

CLINICAL SOCIAL PSYCHOLOGY

Spencer Ahn and Modi Goldstein-Rosenfeld	*Ardsley HS*	The Psychographic Impact of COVID-19 on Educators
Sophia Alexandrou	*White Plains HS*	The Differences in Volumes of Grey Matter in Areas of the Brain Associated with Self-Monitoring Between Partisans and Non-Partisans
Hafsah Ba-Yunus	*Putnam Valley HS*	Perceptions of Leadership in Adolescents: Understanding the Formation of Bias in Leadership
Anna Barlis	*New Rochelle HS*	Incidence of Trauma Across a Pediatric and Adolescent Population Served at Level-One Trauma Hospital
Alexis Benedito	*Putnam Valley HS*	Contraceptive Choices in a Changing Political Environment

HIGH SCHOOL

CLINICAL/ SOCIAL PSYCHOLOGY

Rachel Berdecia	*Putnam Valley HS*	The Effect of Animal Assisted Interventions on High School Students Stress and Self Efficacy	
Sophia Berland	*Byram Hills HS*	Coping with caregiving: Implications of caregivers' relationship- vs. self-oriented goals on positive outcomes for their spouses living with dementia	
Olive Bohdanowycz	*Irvington HS*	Regression between communal narcissism and family history of psychopathology	
Cynthia Cai	*Sleepy Hollow HS*	The relationship between high school students and stress, sleep, and caffeine intake.	
Rabia Chaudhry	*Yorktown HS*	The Impact of COVID-19 Vaccines on the Mental Health of Healthcare Workers in New York	
Alana Curley	*Byram Hills HS*	"Are you listening dear?": Investigating communication strategies mothers and daughters use when coping with a breast cancer diagnosis	
Christian Dilapi	*Putnam Valley HS*	Determining the Effects of An Educational Intervention on the Opinion and Knowledge of Vaping's Effect on Cosmetic Changes	
Anna Fitzpatrick	*Harrison HS*	The effect of sculptural arts therapies on sensory memory retainment and visuospatial functioning.	
Rebecca Frieden	*Byram Hills HS*	Does music make children better helpers and sharers? An examination of age, onset of musical interest, home experiences, and prosociality in preschool musicians	
Simone Gabriel	*Putnam Valley HS*	The Determination Of Factors That Affect Prepartum Care Choices In African American Pregnant Women	
Joseph Garofalo	*Yorktown HS*	Impact of COVID-19 pandemic on High School Students' Mental Health and Grades	
Sophie Ginsberg	*White Plains HS*	The Effect of Daily Autobiographical Memories on Subjective Well-Being	
John Ginty	*Somers HS*	Determining the Prevalence of Sleep Aid Usage such as Melatonin, Among Teenagers	
Julia Gold	*Sleepy Hollow HS*	Evaluating the Use and Perception of Laughter Among High School Students with and without Social Anxiety	**First Place Science Congress Alternate**

Clinical/Social Psychology continued on the next page

HIGH SCHOOL

CLINICAL/ SOCIAL PSYCHOLOGY

Jake Goldman	*Byram Hills HS*	Investigating Teens' e-cigarette usage and perceptions of peers who vape, prior to and during the COVID-19 pandemic
Maddie Hymowitz	*Harrison HS*	The Relationship Between an Inflammatory Bowel Disease patient's disease knowledge and how they feel about their disease regarding fear.
Alexxandra Hoffmann	*Fox Lane HS*	Assessing the impact of the activity-based anorexia (ABA) model on social interaction behavior in adolescent female rats
Andrew Kao	*Fox Lane HS*	A Direct and Indirect Measure of How Children of Different Age Groups Experience Grief
Lily Liflander	*Sleepy Hollow HS*	The Effect of Active and Passive Music Listening in High School Students
James Madden	*Yorktown HS*	Data Visualization of Gun Violence in NYC
Sydney Mascoll	*Mahopac HS*	Examining the Differences in the Traits/Behaviors of Individuals with Autism Spectrum Disorder (ASD)
Aaryanna Matos	*Peekskill HS*	The Influence of Media on the General Knowledge of Gluten Free Diets Amongst Teens
Natalia Mcmorris	*New Rochelle HS*	Gene Expression: Analyzing Coregulated Genes and their Correlation with Post-Traumatic Stress Disorder Using DEAR Analysis
Isabella Mehmel	*Westlake HS*	Perspectives on Sleep Monitoring in Patients Who Have Sustained a Brain Injury Admitted to an Acute Rehabilita-tion Hospital
Ricardo Mejia	*White Plains HS*	Association between e-cigarette access and smoking behaviors in adolescents
Maya Minnitti	*New Rochelle HS*	Assessing The Effects of COVID-19 on Children Diagnosed With ADHD
Adam Reig	*Fox Lane HS*	Using the Heider-Simmel geometric model animation to measure the association between mental and emotional wellbeing and narrative building, perception of intentionality, and emotional projection

Clinical/Social Psychology continued on the next page

HIGH SCHOOL

CLINICAL/ SOCIAL PSYCHOLOGY

Linus Ringstad	*Rye Neck HS*	The Impact of Various Forms of Media on Political Opinions	
Julie Rios	*Somers HS*	The Effects of Shift Work and Length of Employment on Sleep Disturbances Among Firefighters in the Tri-State Area	
Wilmer Roldan	*White Plains HS*	The Levels of Self-Esteem and Quality of Life of Young Peoplewith Chronic Juvenile Arthritis.	
Dylan Sadow	*New Rochelle HS*	The Effect of the Number of Virtual Modules on Abstinence from Substances	**Second Place**
Sarah Sagner	*White Plains HS*	Convenience, Location, and Perceptions of School Quality: Examining the Role that Transportation Plays in School Choice Decisions	
Katerina Schmidt	*Byram Hills HS*	“Who doesn't love pets?”: Determining the relationship between the big five personality traits and attachment to pets	
Cairenn Sergi	*White Plains HS*	The Effect of Music as a Stress Reducer	
Alisa Shargorodsky	*White Plains HS*	The general publics and Rh-negative women’s awareness of Rh alloimmunization in the New York Area.	
Dayana Soza Soto	*Mahopac HS*	Preventing nightmares: Effects of lucid dream induction techniques on dream bizarreness and degree of individual metacognition on LD frequency	**Tied Third Place**
Patrick Stanton	*White Plains HS*	Effect of Access to Public Charging Infrastructure on the Purchasing of Electric Vehicles	
Katherine Uyaguari	*Peekskill HS*	Parental Concerns of Children with Diagnosed Special Needs	
Nicole Vaughn	*Sleepy Hollow HS*	Assessing Transgender Acceptance in Westchester County High Schools	
Leah Vinodh	*Edgemont Jr/Sr HS - HS*	Bats Balls and Substitution Bias: Cognitive Misers are No Happy Fools	
Nayyab Waleed	*Edgemont Jr/Sr HS - HS*	The Role of Anticipation and Feedback on Curiosity-Related Memory Benefits	
Grace Wu	*Somers HS*	Evaluating the Efficiency of Universities’ COVID-19 Protocols	
Olivia Yin	*Irvington HS*	Anxiety and Aspirations of High School Students During Year 2 of the COVID-19 Pandemic	**Tied Third Place**

HIGH SCHOOL

EARTH / SPACE

Isabel Braun	*Fox Lane HS*	Developing an Algorithm-Prototype in Order to Locate Exo-Moons Orbiting Hot Jupiters Given Geometric Albedo and Wavelength	
Tara Dolack	*Putnam Valley HS*	Testing Soil and Alaskan Shasta Daisy Growth Using a High Altitude Balloon	
Isabella Levine	*Sleepy Hollow HS*	Detecting potential sources of neutrinos using 2010-2014 IceCube data	
Stephanie Long	*Fox Lane HS*	Determining the Causes of Centaur Activation Through Analysis of Centaur 2014 HY123's Orbital Evolution and Photometric Color	**Second place**
Talia Ruoff	*Irvington HS*	Correlations Between Solar Parameters and Auroral Activity During Solar Flares	**Third Place**

ENGINEERING TECHNOLOGY

Anthony D'Amato	*New Rochelle HS*	Impact of Thermoelectric Effects on Shunt-Based Current Measurements	
Sophia Goncalves	*Putnam Valley HS*	Utilizing Realistic Muscle and Bone Anatomy as a Model to Lower the Uncanny Valley Effect in Animatronic Iguana Tail Whip	
Alexandra Griffin	*Fox Lane HS*	The Home Application of the Freeform Reversible Embedding of Suspended Hydrogels Form of 3D Bioprinting	**Second Place**
Nathan Gutierrez	*Yorktown HS*	Autonomous Landing for Micro Air Vehicles on a Wireless Charging Ground Station	
Dylan Hohwald	*Yorktown HS*	The Effectiveness of Blade Angle and Amount of Blades on Speed of Electrical Planes	
Miriam Kim	*Edgemont Jr/Sr HS - HS*	Quantum Sensing Using Tunable Quantum Circuits	
Pratap Krish	*Yorktown HS*	A Novel Approach to Prevent Freeze-ups in Hydronic Baseboard Heating Systems	
Jasmine Li	*Horace Greely HS*	Investigating Pores of Collagen Sponges for Skeletal Muscle Regeneration	
Francesca Mangione	*Yorktown HS*	Electrochemical Characterization, Implementation, and Testing of Graphene-Noble Metal Aerogel Solutions in Batteries as Lightweight Energy Storage Devices for Military and Consumer Applications	**Third Place**

Engineering / Technology continued on the next page

HIGH SCHOOL

ENGINEERING TECHNOLOGY

Jessica Park	*Rye Neck HS*	The Effect of Different Organic Dye Sources on the Electrical Output of a Dye Sensitized Solar Cell	
Emma Rooney	*Mahopac HS*	Testing The Hardness Of Resins: The First Step To 3D Printed Mouthguards To Prevent Mild Traumatic Brain Injuries	
Richard Tardio	*Mahopac HS*	The Effect of Solar Panels on Flight Duration of a Drone	
Cooper Taylor	*Sleepy Hollow HS*	The Design Of Labyrinth Path Emitters for a Turbulent Flow Drip Irrigation System	
Josef Zyngier	*Rye Neck HS*	How can I alter an Electric Vehicle so the range stays the same or positively increases as conditions unrelated to driving the vehicle are deployed.	

ENVIRONMENT

Rachel Akinla	*Fox Lane HS*	Comparing the End of Life Scenarios of Three Common Takeout Containers	
Naomi Banner	*Yorktown HS*	Community Solar and Renewable Energy Awareness Among Suburban Residents	
Ayan Barnwal	*Edgemont Jr/Sr HS - HS*	The Role of Metal Pollution and Metal Toxicity in Alzheimer's Disease Incidence	
Jobin Binu Daniel	*New Rochelle HS*	The Effect of Concrete Bricks on Climate Change	
Jacqueline Ceja	*New Rochelle HS*	Analyzing Tree Growth and Carbon: The Effect of Tree Growth on Carbon Sequestration	
Amelia Chung	*Byram Hills HS*	Evidence of resistance to environmental stressors: Transcriptomic description of the symbiont Breviolum in Pseudodiploria strigosa corals	**Second Place Science Congress Nominee**
Michael Clarke	*Westlake HS*	Evaluating the Efficacy of Organic Management Methods on Japanese Stiltgrass (Microstegium vimineum)	
Olivia Denardo	*Irvington HS*	The Prosperity of Coral Reef Rehabilitation Through Out-Plantation in the Florida Keys	
Aleksia Doncov	*Irvington HS*	Calculating the Fire Weather Index (FWI) of Northern California Before and After Ecological Forestry	

Environment continued on the next page

HIGH SCHOOL

ENVIRONMENT

Leonah Esteves & Leyysha Esteves	*Peekskill HS*	Cyclonic Induced Phytoplankton Blooms in the Arabian Sea
Yansi Foong	*Edgemont Jr/Sr HS - HS*	Comparing Indoor Air Emissions from Cookstoves Using Plastic Derived Fuel Oil with Traditional Fuels
Olivia Goncalves	*Putnam Valley HS*	The Effect of Thermal Exhaust on Ambient Water Temperature in Relation to Green Sea Turtle Migration
Sasha Grose	*Sleepy Hollow HS*	Quantifying Microplastic Release from Neoprene Wetsuits
Zoe Gutherman	*Somers HS*	Assessing summer heat and its relationship with land cover across New York State using satellite data
Riley Hester	*Fox Lane HS*	Spatial and Temporal Variability in Live Cover on Coral Reefs in Bocas del Toro, Panama
Andre Joubert	*Harrison HS*	The Evaluation of the Knowledge of Youth about the Interconnectedness of Humans & the Natural World in the US and South Africa as a Baseline Metric for Future Policy Decisions.
Haris Karim	*Edgemont Jr/Sr HS - HS*	Using MODIS Satellite Data to Determine the Effects of Climate Change on Global Cloud Cover
Katelyn Keefe	*Hendrick Hudson HS*	Implementation of Dynamic Tick Population Models in New York
Alexander Kylander-Kreiner	*Pleasantville HS*	Tufted Titmouse as a Habitat Indicator
Theodore Levin	*Irvington HS*	The Usage of Citizen Science Data in Analyzing the Spatio-Temporal Distributions of Seasonal Jellyfish Blooms
Lyla Loria	*Fox Lane HS*	Measuring Locomotion of Caenorhabditis elegans in the Presence of Triclosan
Ronik Malik	*Edgemont Jr/Sr HS - HS*	Comparing and Analyzing the Performances of Green vs Brown Stocks
Christopher Morris	*Mahopac HS*	Small Increments of Oil in Lakes Effects on Organism and Algae Population Density
Jacob Nachamie	*Putnam Valley HS*	The Effects of Abiotic and Biotic Factors on the Hatching Success of the Common Loon (Gavia immer) in New York's Adirondack Park Using Frequency Data
Vinn Nguyen	*White Plains HS*	Multi-dimensional Analysis of The Efficiency of Renewable Energy Devices in Westchester County using Pre-set Parameters

Environment continued on the next page

HIGH SCHOOL

ENVIRONMENT

Stephanie Otavalo & Gariela Velasquez	*Peekskill HS*	The Importance of Biomonitoring via Family Level Identification of Macroinvertebrates to Ascertain Seasonal Differences in Freshwater Pollution	
Anika Puri	*Horace Greely HS*	ElSa: A Novel Real-time Wildlife Poacher Detection Solution Leveraging Machine Learning Driven Spatio-temporal Analysis of Nighttime UAV Thermal Infrared Videos	**First Place Science Congress Nominee**
Clio Salles-Spar	*Irvington HS*	Effectiveness of Beczak Sill in Attenuating Water Energy in Various Weather Conditions	
Canaan Salles-Spar	*Irvington HS*	Impacts of Sea-level Rise on Cultural Resources in Orkney, UK	
Aviva Segal	*New Rochelle HS*	Impact of Manganese Exposure on the Development of the Atlantic Horseshoe Crab (Limulus polyphemus)	
Jana Shrestha	*Edgemont Jr/Sr HS - HS*	Assessing Biodiversity in the Mianus River Gorge Pre-	
Anushka Sundar	*Pleasantville HS*	The Comparative Analysis of Carbon Sequestration in Different Municipalities in Response to Forest Land Cover Loss	
Alan Tirado	*White Plains HS*	Wind Turbine Generators	
Jaewon Yeo	*Somers HS*	Investigating the Quality of Urban Green Spaces Between Neighborhoods of Different Poverty Rates in New York City	**Third Place**

HEALTH/ NUTRITION

Jamely Curipoma	*Peekskill HS*	The Knowledge, Attitude, and Behavior of Young Adults Towards Salt Consumption	
Eliza Goldman	*Byram Hills HS*	An exploration of how prenatal malnutrition influences offspring neurodevelopment and behavior	**Tied Second Place**
Leandra Quick	*Hendrick Hudson HS*	Linkage between Allergies and Anxieties	
Melissa Soto	*White Plains HS*	Touch Sensitivity During The First Year of Life in Human Infants: Effects of Sex, Sleep State, and NICU experience	
Meika Tomita	*Irvington HS*	The Impact of the T/T Haplotype on the BCMO1 Gene to Identify a Correlation Between Vitamin A Deficiency and Different Ethnic/ Racial Groups	**Tied Second Place**
John Weynand	*Horace Greely HS*	Radiation Levels in Positron Emission Tomography Scans on Image Clarity and Standard Uptake Value Accuracy	
Isaac Williamson	*Irvington HS*	Using Heart Rate Variability Data to Predict Heart Rate Zones for Fitness Training	

HIGH SCHOOL

MATH / COMPUTERS

Alana Foreman	*Byram Hills HS*	Machine learning for classification of COVID-19 vaccine misinformation on Twitter	**Second Place**
Maddox Gambetta	*Yorktown HS*	Encoding colors in a quantum computer	
Ryan Gosset	*Sleepy Hollow HS*	Evaluating the effect of Home Field Advantage on Fast-Paced and Slow-Paced sports	
Johnny In	*White Plains HS*	Comparing efficiency between path planning algorithms	
Matthew Kahn	*Somers HS*	The Integration of Technical Indicators into a Deep Q-Learning System to Increase Profitability in Simulated Stock Market Trading	
Daniel Kauber	*Pleasantville HS*	An Analysis of Which Factors Affect the Outcome of Soccer Matches at the UEFA Euros (2012-2021)	
Grant Keegan	*Yorktown HS*	Novel Analysis of Encryption on IoT Device Networks	
Spencer Kitts	*Yorktown HS*	Objection Detection on Breast Cancer Mammograms	
Krishna Kumanan	*Yorktown HS*	Transfer Learning Approach to Skin Lesion Identification Using Images Captured on Mobile Devices	**Third Place**
Elvin Lo	*Horace Greely HS*	A Deep Learning Approach to Social Media Spam Identification and Analysis of Data Features for Spam Classification Models	
Luke Marinelli	*Putnam Valley HS*	Determining the Efficiency of Programming Languages on a Modern Computer	
Nikhil Mukraj	*New Rochelle HS*	The Use of Machine Learning Algorithms in Particle Classification	
Derek Ryan	*Rye Neck HS*	Gender-specific crucial functions for AD patients identified with Machine Learning process	
Nadav Wigodsky	*White Plains HS*	Music Classification Using Machine Learning: A Combined Approach Using Lyrical and Musical Features	
Andrew Zhou	*Irvington HS*	The Effects of Dropout and Weakly Supervised Clustering on Convolutional Neural Networks with Applications in Bioimage Analysis	

HIGH SCHOOL

MEDICINE and MEDICAL SCIENCE & TECHNOLOGY

Michael Aquilino	*Somers HS*	The Effect of Physical Exercise on Post-Concussion Symptoms in Adults and Adolelescents	
Raka Bose	*Yorktown HS*	Using AI for Early Detection of Long-COVID	
Sidney Burak	*Edgemont Jr/Sr HS - HS*	Assessment of optimal promoter in treating cardiac cells	
Natalie Cariello	*Mahopac HS*	The Correlation Between Axillary Lymph Node Removal and Breast Cancer Recurrence.	
Hailee Carter	*Yorktown HS*	Investigating the Structure and Character of Epidermal Growth Factor Receptor Models with Molecular Dynamics	
Fiona Chen	*Putnam Valley HS*	Elucidating Biomarkers in Non-small Cell Lung Cancer Subtypes through Enrichment Analyses	
Charlotte Constantine	*Yorktown HS*	Management of Status Epilepticus During Pregnancy: A Survey of Clinician Practice Trends	
Elizabeth Corelli	*Byram Hills HS*	Identification of Biomarkers for Human Cardiomyocyte Proliferation	Second Place Science Congress Nominee
Emily Dodd	*Somers HS*	Altered mGluR1/5 and Homer1b/c Colocalization and Volumes in Parkinson's Disease-Linked LRRK2 G2019S Mice	First Place Marilyn Award Science Congress Nominee
Julia Ecker	*New Rochelle HS*	Utilizing Large-Scale Hospital Data to Understand Clinical Outcomes in Dementia Patients Seeking Urgent and Emergent Care	
Emma Eckert	*Fox Lane HS*	A Survey of the Differential Expression in Poly-Aneuploid Cancer Cells (PACCs) vs. non-PACCs: Feeding the Inference of Evolvability and Colonization	
Ella Fleischer	*Byram Hills HS*	Steering Seniors to Safety: Determining the relationship between Alzheimer's disease biomarkers, sleep habits, and driving behaviors	
Mirian Garcia	*Rye Neck HS*	Which Biochemicals and Possible Genetic Mutations Within Biomarkers in the Brain Contribute to Anxiety Disorders?	

Medicine and Medical Science & Technology continued on the next page

HIGH SCHOOL

MEDICINE AND MEDICAL SCIENCE & TECHNOLOGY

Devisi Goel	*Horace Greely HS*	COD-FISH : Contrastive Oligonucleotide Design for smFISH Probes to Detect Single RNA Molecules with High Specificity	**Third Place Science Congress Alternate**
Samantha Grech	*Byram Hills HS*	The Good Samaritan Donor: The Development of a Universal Profile for Living Altruistic Kidney Donors	
Malka Halliwell	*Irvington HS*	The Relationship Between Untrained Canines and Seizure Detection	
Michael Holowiak	*Putnam Valley HS*	The Effect Age of Patients has on the Number of Gene Mutations in Cancerous Cells	
Mia Hoxhaj	*Pleasantville HS*	The Impact of the Addition of a Virtual Reality Trainer on Skill Retention of Tourniquet Application for Hemor-rhage Control Amongst Emergency Medical Technician Students	**Science Congress Alternate**
Sarah Hymowitz	*Irvington HS*	The Effects of Surface Roughness on Femoral Component Loosening in Total Knee Replacement	
Eugenia Kaltsas	*Fox Lane HS*	Whole Transcriptome RNA-Seq Comparison between Human Multipotent Adult Stem Cells and HumanBone Marrow-Derived Mesenchymal Stem Cells and Placenta-Derived Mesenchymal Stem Cells	
Jamie Kaplan	*Byram Hills HS*	Identifying sex-based differences responsible for variations in human immune measles-specific responses to the measles mumps and rubella vaccine	
Hillary Kramer & Isabel Palacios	*Rye Neck HS*	Establishing Breast Cancer Screening Protocols for Neurofibromatosis Type 1 Patients	
Klara Kunz	*Yorktown HS*	Identification of Shared SNPs between Anorexia Nervosa and Several Psychiatric and Metabolic disorders using Public Data	
Sydney Levy	*Byram Hills HS*	Revealing the mechanosensitive-ATP-purinergic signaling pathway that underlies fibrosis resulting from mitral valve prolapse	
Kristin Linahan	*Yorktown HS*	Effects of Particulate Matter, Ozone and Sulfur Dioxide Pollutants on Asthma Development and Exacerbation	
Ryan Liu	*Irvington HS*	Potential Role of Antidepressants in Moderating COVID-19 Severity: A Retrospective Analysis	
Christian Matute	*White Plains HS*	MYDGF-Induced Cytokinesis on Binucleated Cardiomyocytes	

Medicine and Medical Science & Technology continued on the next page

HIGH SCHOOL

MEDICINE AND MEDICAL SCIENCE & TECHNOLOGY

Ella Moroney	*Pleasantville HS*	Identifying the Activin Mediated Gene Signature in Human iPSC-Derived Cardiomyocytes and Associations with Human Heart Failure
Grace Nadecki	*Horace Greely HS*	Independent Predictors for COVID-19 in Westchester County; A Comparative Study of COVID-19 Mortality
Alexa Pearson	*Yorktown HS*	The Impact of Covid-19 on Perceived Neurological Problems
Tanya Postian	*Byram Hills HS*	Using a Lower Extremity Vein Graft in Immediate Lymphatic Reconstruction to Prevent Lymphedema in Breast Cancer Patients
Amelia Rasmussen	*Harrison HS*	A Data Analysis of Mutated Genes in Breast Cancer and Ovarian Cancer in Women under 40
Valentina Rubio	*Westlake HS*	Analysis of Genetic Expression of Orexin Neurons Between Male and Female Mice Subgroups
Rajan Sandhu	*Edgemont Jr/Sr HS - HS*	Examining Metabolic Information from RNA Sequencing Data: The Compass Method
Eva Shrayer	*Byram Hills HS*	Understanding the Occurrence of Seizures in Alzheimer's Disease: An Investigation of Microglia, Protein Hall-marks, Neuron Loss, and Cognitive Decline
Leo Silverman	*Irvington HS*	Using Stool Samples to Analyze How Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Disproportionately Affects Patients With Specific Comorbidities
Jaden Tepper	*Scarsdale HS*	The Creation of a Novel Device to Improve the Evacuation of Subdural Hematomas
Rachel Thomas	*Westlake HS*	A Novel Phenotype For Diabetes? Investigating The Role of T-90 in Glycemic Control Among Patients With Obstructive Sleep Apnea
Heather Vamossy	*Pleasantville HS*	The Evaluation of Altered Genes and Pathways During Toxoplasma gondii Infection
Benjamin Wang	*Horace Greely HS*	Assessing the role of constitutive JAK/STAT signaling in Jak2V617F-p53 post-MPN leukemia using a novel knock-in/knock-out mouse model of Jak2V617F
Nuanyang Wang	*Edgemont Jr/Sr HS - HS*	Correlation Analysis of PRMT-dependent Transcription with Single Cell Resolution

Medicine and Medical Science & Technology continued on the next page

HIGH SCHOOL

MEDICINE AND MEDICAL SCIENCE & TECHNOLOGY

Alex William	*Edgemont Jr/Sr HS - HS*	Identifying Drug Targets in the Human Epilepsy Brain from Proteomic Analysis	
Justin Xiang	*Horace Greely HS*	Cell Type Identification from Histology Images using Machine Learning	
Seungchan Yun	*Irvington HS*	Analysis of the Public Opinion on the Severe Acute Respiratory Syndrome Coronavirus 2 Vaccine Between States with Partisan Ideology Using Twitter Data.	

PHYSICS

Lila Juenger	*Irvington HS*	Numerical Analysis of an Electrostatic Ion Beam Deflector for Laboratory Studies of Interstellar Ion-Neutral Reactions	**Third Place**
Ethan Kuperman	*Horace Greely HS*	The Effect of Physics Parameters on Mass-Luminosity Relations Derived from Stellar Evolution Grids	
Emma Mccumber	*Horace Greely HS*	An Investigation of Methods for the separation of particles of Low and High Density Materials and their Application to Microplastic Pollution Mitigation	**First Place**
Arjun Menon	*Horace Greely HS*	Discovering the length dilation formula using a modified version of the twin paradox	
Anisha Musti	*Edgemont Jr/Sr HS - HS*	Designing a Quantum Teleportation Circuit on Novel Qubits	
Hirdhe Singh	*Edgemont Jr/Sr HS - HS*	Vocal Register transition correlation with Vibrato- an analysis of Jimmie Herrod's vocals	

PHYSIOLOGICAL/ EXPERIMENTAL PSYCHOLOGY

Elena Coelho Adams	*New Rochelle HS*	Training of the Vestibular System in Figure Skaters	**Tied Second Place**
Emily Detres	*Peekskill HS*	Differential Medication Use in Children (Ages 3-17) with Attention Deficit Hyperactivity Disorder (ADHD): A Comparison of New York State and the Nation	
Lila Ferrucci	*New Rochelle HS*	Mindfulness in Adolescents	

Physiological/Experimental Psychology continued on the next page

HIGH SCHOOL

PHYSIOLOGICAL/ EXPERIMENTAL PSYCHOLOGY

Sophia Golub	*Sleepy Hollow HS*	The correlation between volleyball players uniforms, playing abilities, and self-consciousness in female high school volleyball players	
Sabrina Johnston	*Horace Greely HS*	Calculating the Impacts of Social Media on Motivation, Self-efficacy, and Perfectionism in Athletes	
Ari Kotler	*Sleepy Hollow HS*	Examining the Correlation between Computers as a Reward and Latter Onset of Problematic Video Game Use	
Nelson Lojano-Coronel	*Peekskill HS*	The Impact of Regional Background on High School Students' Building Color Preference	
Ava Mcginty	*Putnam Valley HS*	Identifying the Barriers That Healthcare Professionals Face When Contacting Patients	
Adam Nack	*Horace Greely HS*	A Cross-Sectional Observational Study On Associations Between Helping Behaviors, Social Support and Perceived Benefits During the COVID-19 Pandemic	
Advait Palve	*Edgemont Jr/Sr HS - HS*	Determining a Correlation Between Debate Participation and Critical Thinking Within High School Students	
Alessandra Pappalardi	*New Rochelle HS*	Various Media Outlet Influence in Pediatric Nephrology Perception	
Aislynn Pineda	*New Rochelle HS*	Emotional and Psychological Impact on People with a Family Member That Has Had a Cerebral Aneurysm Rupture	
Maya Reiken	*White Plains HS*	Exploring the Effect a 1-Week Break from Social Media Has on Adolescent Anxiety, Happiness, and Body Satisfaction	
Ariel Rosencrantz	*New Rochelle HS*	“Food Allergies Blocking Your Path? First Step: Treat Your Anxiety: Determining the Correlation Between Anxiety and Food Allergies”	Tied Second Place
Christopher Soliz	*Putnam Valley HS*	The Effect of Disease Educational Intervention on Poultry Consumption Choices	
Marianna Vataj	*Byram Hills HS*	Utilizing visual mask-masking as a creative arts task to explore pride and happiness in volunteer firefighters: A cohort study	Third Place
Anaya Young	*White Plains HS*	Gardening Effects on Body Image and Self-Esteem	
Daniel Zyngier	*Rye Neck HS*	The Effects of Blue Light Glasses on Teenagers’ Perception of Their Physical and Mental Health	

The Frank Iacopelli Award for
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BYRAM HILLS HIGH SCHOOL

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