

# 2020 Winners of Tri County Science & Technology Virtual Fair

## IMPORTANT INFORMATION ABOUT SCORING ON MIDDLE & HIGH SCHOOL LEVELS

### Why didn't my child get first place when there were only two exhibits in his/her category?

Not all schools fill an exhibit in each category. They may choose to enter more exhibits in another category. When a category at the Fair has less students there is a greater likelihood that not all three awards will be awarded. Each exhibit has to achieve a minimum score prior to being considered for an award.

### Why was first & third place awarded without a second place?

Each award has a minimum score. To be eligible for first place you must score higher than 90, for second 85 and third 80. Please keep in mind that is a minimum, so if we have a 98, 97, 92 then those are the First, Second & Third place winners. If we have a 92, 84, 80 then First & Third will be awarded with the 84 taking third.

While we are thrilled that Broadcom relaxed its criteria, we feel that the students that achieved top of Fair have lost a status. Therefore we have the following: **"Middle School Merit in Science & Technology"** goes to students that would have achieved "alternate" and **"Best of Fair Achievement Award"** replaces the "nominee status."

## PLACEMENT

*Tie= two exhibits with identical scores*

*Joint= more than one person on a project*

## CHEMISTRY

EXCELLENT / joint	Campbell	Magnan		<i>F.E. Bellows</i>
	The Fastest Way to Ice Cream			
EXCELLENT / joint	Elise	Rainert		<i>F.E. Bellows</i>
	The Fastest Way to Ice Cream			

## PHYSICS

EXCELLENT	Lia	Seelenfreund		<i>Daniel Webster</i>
	Magic Microwave			

THE SUSAN SHAELL HANDELMAN AWARD FOR SCHOLASTIC EXCELLENCE IN SCIENCE & TECHNOLOGY FOR TOP MIDDLE SCHOOL

PRESENTED TO

**RYE NECK MIDDLE SCHOOL**

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**SPECIAL AWARDS**

*in light of Broadcom changing their criteria we have two new Awards of Distinction for 2020*

MIDDLE SCHOOL

**BIOLOGY**

FIRST	Irene	Basu		Pelham MS	Best of Fair Achievement Award
	<i>The antibacterial effect of m"Ag"nificent tiny particles</i>				
Second / joint	Sonia	Eddolls		Mildred E Strang	Middle School Merit in Science & Technology
	<i>Does the breed of Betta Fish affect its intelligence? YOU BETTA BELIEVE IT!</i>				
Second / joint	Melanie	Pujols		Mildred E Strang	Middle School Merit in Science & Technology
	<i>Does the breed of Betta Fish affect its intelligence? YOU BETTA BELIEVE IT!</i>				
Third / tie	Anne "Julie"	Van Roijen		Rye Neck MS	
	<i>The effect of light on fine motor skills.</i>				
Third / tie / joint	Anqi	Wang		Rye Neck MS	
	<i>Mouthwash vs. Toothpaste</i>				
Third / tie / joint	Maria	Kholmanskikh		Rye Neck MS	
	<i>Mouthwash vs. Toothpaste</i>				

**CHEMISTRY**

FIRST	Ella	Grann		Rye Neck MS	Best of Fair Achievement Award & Judge Edith Miller Excellence in Education
	<i>What impact does Calcium Hydroxide (limestone) or Seagrass have on pH level in salt water to help with Ocean Acidification?</i>				
Second	Cass	Fabbie		Mahopac MS	
	<i>Bubble Mania</i>				
Third	Hillary	Schuldenfrei		Geenville	
	<i>Liquids Changing Color</i>				

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**EARTH / SPACE**

Third	<b>Ananya</b>	<b>Shah</b>		Geenville	
	<i>The effect of stratospheric pressure, temperature, and UV-C radiation on the viability and biological properties of probiotic bacteria</i>				

**ENGINEERING / TECHNOLOGY**

FIRST	<b>Charlotte</b>	<b>Geary</b>		Rye Neck MS	<b>Best of Fair Achievement Award</b>
	<i>Heatable Gloves</i>				
Second	<b>Shreyas</b>	<b>Singh</b>		Pelham MS	
	<i>Does the Bangladesh Eco -Cooler Work ?</i>				
Third	<b>Veebhu</b>	<b>Shah</b>		Mildred E Strang	
	<i>The Reconstruction of Mars Rover Spirit by Using a Pneumatic Circuit Hydraulic System</i>				

**ENVIRONMENT**

FIRST	<b>Lilly</b>	<b>Fauci</b>		Rye Neck MS	<b>Best of Fair Achievement Award</b>
	<i>Growing Seeds with Aquaponics: Comparing 3 Types of Goldfish Food</i>				
Second	<b>Lucie</b>	<b>Paumier</b>		Rye Neck MS	
	<i>The Impact of Carbon Dioxide on the Growth of Algae</i>				
Third / joint	<b>Iris</b>	<b>Teodorescu</b>		F.E. Bellows	
	<i>The Effect Of Light Time On Germination And Early Growth Of Plants</i>				
Third / joint	<b>Sydney</b>	<b>Healey</b>		F.E. Bellows	
	<i>The Effect Of Light Time On Germination And Early Growth Of Plants</i>				

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## HEALTH / MEDICINE

FIRST	Elena	Adams		Albert Leonard MS	Middle School Merit in Science & Technology
	The Seven Senses of Autism				
Second	Aadita	Roy		Pelham MS	
	Five Second Rule: Myth or Fact?				
Third	Hailey	Otero		Mildred E Strang	
	Germ Alert				

## MATH / COMPUTERS

FIRST	Ronak	Das		Lakeland Copper Beech MS	Middle School Merit in Science & Technology
	Predictive Analytics of COVID-19				
Third	Imaad	Uzun	Albert Leonard MS	Albert Leonard MS	
	The Value of Steals and Blocks in Basketball				

## PHYSICS

FIRST	Ishana	Kumar		Bell MS	Best of Fair Achievement Award
	The Physics of Color Perception: Insight into Benham's Disk				
Second/ tie	Liam	Bergerson		Mahopac MS	Best of Fair Achievement Award
	From da Vinci to da Glider				
Second/ tie	Kiran	Schwaderer		Pelham MS	Middle School Merit in Science & Technology
	Using LED Lights to Optimize Mung Bean Plant Growth				
Third	Julian	Belfast		Albert Leonard MS	Middle School Merit in Science & Technology
	The Science of Sound				

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**PSYCHOLOGY**

Second	<b>Juliette</b>	<b>Thomas</b>		Albert Leonard MS
	<i>Testing Piaget's Theory of Conservation</i>			
Third / joint	<b>Valeria</b>	<b>Barajas</b>		Rye Neck MS
	<i>Dog Intelligence based on Gender</i>			
Third / joint	<b>Sofia</b>	<b>Stastny</b>		Rye Neck MS
	<i>Dog Intelligence based on Gender</i>			

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*The top 5 students have an opportunity to compete in NYS Science Congress with 4 alternates*

**BIOLOGY**

First	<b>Ariana</b>	<b>Ishkanian</b>		Byram Hills HS	Science Congress Nominee
	<i>A novel method for profiling beneficial and non-beneficial bacteria: Isolating the effect of D-raffinose microbial sub-population on host epithelial barrier function</i>				
Second/ tied	<b>Melissa</b>	<b>Amante</b>		Somers HS	
	<i>Volumetric Analysis of the Primary and Associative Auditory Cortex in Patients with Schizophrenia compared to Healthy Controls, P3 and ΔBPND</i>				
Second/ tied	<b>Roya</b>	<b>Azar</b>		Harrison HS	
	<i>The Use of Va24 in VaKI Mice for Cancer Immunotherapy Research</i>				
Second/ tied	<b>Noah</b>	<b>Yin</b>		Irvington HS	
	<i>Prevalence of Chlorhexidine Resistance in Coagulase Negative Staphylococcus</i>				
Third	<b>Kyla</b>	<b>Simkhai</b>		Fox Lane HS	
	<i>The Use of Viral Vectors in the Downregulation of T-Bet and Bcl6, CD4+ T Cell Transcription Factors</i>				

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**CHEMISTRY**

First	<b>Thomas</b>	<b>Gomez</b>		Byram Hills HS	
	<i>The synthesis of a novel two-dimensional conjugated fused-ring electron acceptor utilizing fluorine and hexyl functional groups with alkoxy end groups as a high-performance transparent organic alternative to silicon photovoltaics</i>				
Second	<b>Maeve</b>	<b>Janecka</b>		Somers HS	
	<i>Analysis of Heavy Metal Concentrations in JUUL Electronic Cigarette Vapor Based on Vaping Topography Identified from a Survey of Young Adults</i>				
Third	<b>Gabrielle</b>	<b>Abato</b>		White Plains HS	
	<i>The Effect of Growth Parameters on the Composition of InGaN</i>				

**CLINICAL / SOCIAL PSYCHOLOGY**

First	<b>Sydney</b>	<b>Schulz</b>		Sleepy Hollow HS	Science Congress Nominee
	<i>The Effect of Racial Bias on the Cross Race Effect</i>				
Second	<b>Karina</b>	<b>Ulrich</b>		Irvington HS	Alternate
	<i>The Correlation Between Intrusive Adolescent Behaviors and Technology</i>				
Third / tied	<b>Alexis</b>	<b>Francis</b>		Rye HS	
	<i>The Effect of Parenting Style and Personality Type on Classical Musicians' Career Development</i>				
Third / tied	<b>Amanda</b>	<b>Mackey</b>		Byram Hills HS	
	<i>Homesickness and resilience in emerging adults: Evaluating the influence of sleepaway camp attendance on college experiences</i>				

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**EARTH / SPACE**

**HIGH SCHOOL**

First	<b>Sarah</b>	<b>Athir</b>		New Rochelle HS	
	<i>Determining How Precipitation Will React To A Warming Climate: Tracking Changes in The ITCZ Using Sediment Provenance</i>				
Second / joint / tied	<b>Joshua</b>	<b>Cohen</b>		Ardsley HS	
	<i>Measurement of the H-alpha Spectral Feature in Relation to the Mass of Low-mass Stars in the Hyades Open Cluster</i>				
Second/ tied	<b>Catherine</b>	<b>Stanton</b>		White Plains HS	
	<i>Local Effects of Magnetic and Plasma Turbulence due to the Passage of Quasi-Parallel and Quasi-Perpendicular Interplanetary Shockwaves</i>				
Second / joint / tied	<b>Madeline</b>	<b>Wong</b>		Ardsley HS	
	<i>Measurement of the H-alpha Spectral Feature in Relation to the Mass of Low-mass Stars in the Hyades Open Cluster</i>				
Third	<b>Aimee</b>	<b>Holland</b>		Westlake HS	
	<i>Establishing a Baseline Rate of Cosmic Microspherule Deposition</i>				

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**ENGINEERING / TECHNOLOGY**

First	<b>Adrianna</b>	<b>Tagayun</b>		Somers HS	
	<i>Bulk Heterojunction Morphology for Efficient Organic Solar Cells by Surrogate Modeling</i>				
Second	<b>Adam</b>	<b>Zeng</b>		Byram Hills HS	
	<i>Improving the net lift of an ornithopter through implementation of an interchangeable bioinspired check valve structure</i>				
Third	<b>Spencer</b>	<b>Karp</b>		Byram Hills HS	
	<i>A step towards energy efficient infrastructure: A weakly supervised approach to power signal labeling in commercial buildings</i>				

**ENVIRONMENT**

First	<b>Alana</b>	<b>Rabinowitz</b>		Mahopac HS	Alternate
	<i>A Novel Approach to Detecting Microplastics by Analyzing the Efficacy of Benthic Macroinvertebrates as Bioindicators</i>				
Second/ tied	<b>Sayako</b>	<b>Aizeki-Nevins</b>		Sleepy Hollow HS	
	<i>Escherichia coli and coliform bacterial colonization of microplastics</i>				
Second/ tied	<b>Aidan</b>	<b>Lynch</b>		Pleasantville HS	
	<i>The Effect of Mycorrhizal Colonization on the Growth of Northeastern Coniferous and Deciduous Trees</i>				
Third	<b>Yaffa</b>	<b>Segal</b>		New Rochelle HS	
	<i>Honey as a Biomonitor: Using Honey Mass Spectrometer Analysis for Heavy Metal Detection in New York City</i>				



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**HEALTH / NUTRITION**

Second	<b>Jonathan</b>	<b>Zhou</b>		Horace Greeley HS	
	<i>The Impact of Time Varying Atmospheric Pollutant Mixtures on Prenatal Development</i>				
Third / tied	<b>Jolie</b>	<b>Kantor</b>		Scarsdale HS	
	<i>Creating a Systematic Review of Contouring Guidelines in Radiation Oncology</i>				
Third / tied	<b>Larissa</b>	<b>Iraj</b>		Harrison HS	
	<i>The Effect of the Antioxidant, Resveratrol, on Prolonging the Lifespan of Drosophila melanogaster Over Multiple Generations</i>				

**MATH / COMPUTERS**

First	<b>Robert</b>	<b>Lusthaus</b>		Somers HS	Science Congress Nominee
	<i>Predicting Conflict in the Legend of Zelda with Artificial Intelligence</i>				
Second	<b>Athanasia</b>	<b>Meimeteas</b>		Harrison HS	
	<i>Predicting the Relationship between Marriage and Discussion of Women's Issues in Congressional Representatives: A Multiplicative Interaction Model Approach</i>				
Third	<b>Merry</b>	<b>Mayers</b>		Byram Hills HS	
	<i>An evaluation of network-informed disease contact parameters for the California puma population</i>				

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**HIGH SCHOOL**

**MEDICINE & MEDICAL SCIENCE & TECHNOLOGY**

First	<b>Maya</b>	<b>Weitzen</b>		<i>Sleepy Hollow HS</i>	<b>Science Congress Nominee &amp; Marilyn Reiner Science in Education Award</b>
	<i>High-throughput discovery and validation of tumor-specific HLA-presented peptides in non-small cell lung carcinomas</i>				
Second	<b>Isabella</b>	<b>Sirchia</b>		<i>Somers HS</i>	<b>Science Congress Nominee</b>
	<i>Confirming the Target Protein Expression for Chimeric Antigen Receptor T-cell Therapy in Glioblastoma Multiforme</i>				
Third	<b>Niharika</b>	<b>Bhattacharjee</b>		<i>Yorktown HS</i>	
	<i>Digital Dental Triage: Automated Digital Diagnosing System For Dental Cavities Using Artificial Intelligence</i>				

**PHYSICS**

Third	<b>Alexander</b>	<b>Bjorgvinsson</b>		<i>Irvington HS</i>	
	<i>Investigation of a Chladni Plate as a Means of Separating Particles of Various Masses and Densities</i>				

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First	<b>Carolina</b>	<b>Pedraza</b>		<i>Byram Hills</i>	Alternate
	<i>Heightened Anxiety in Children and Adolescents with Tic Disorders</i>				
Second/ tied	<b>Brittney</b>	<b>Benjamin</b>		<i>New Rochelle HS</i>	
	<i>Public Awareness of Genetic and Environmental Factors Influencing Complex Diseases</i>				
Second/ tied	<b>Rachel</b>	<b>Fox</b>		<i>New Rochelle HS</i>	
	<i>Differences in Eczema Experience Associated with Racial Identification</i>				
Third	<b>Alliyah</b>	<b>Steele</b>		<i>Putnam Valley HS</i>	
	<i>Examining the Effect of Rural and Urban Environments on Scene Processing of BOLD5000 Images Behaviorally and Neurologically using fMRI</i>				