



Connecticut Science & Engineering Fair

Quinnipiac University

March 7 - 19, 2022

These judging results are unaudited by the fair's Database Committee. The CSF reserves the right to correct the listings.

Preliminary Judging Results

Honors Received in Regular Fair Preliminary Judging

[SchTown]	[School]	[Teacher]	[Proj#]	[FCat]	[Honors]	[Project Title]	Student(s)	Grade	Town
Avon	Avon Old Farms School	Myoung-Hoon Lee	3037	LS	2	Enhancing Microplastic Resistance of Honeybees to Combat Colony Collapse Disorder through Transformation of Their Enterobacteria	Yunha Kim	12	Avon
Avon	Avon Old Farms School	Dan Ismailescu	6024	PS	3	On the smallest (n-1)-gon containing a convex n-gon	Keun Hyong Kwak	11	Gangnam-gu
Avon	Farmington Valley Academy Montessori	Bobbi Jo Woodbury	2501	L8	3	Adjusting to Our Modernized World with Smart Farms	Michael Guiliano	8	Canton
Avon	Farmington Valley Academy Montessori	Bobbi Jo Woodbury	2508	L8	3	Spherification	Christina Kostelni	8	Canton
Avon	Farmington Valley Academy Montessori	Bobbi Jo Woodbury	2505	L8	3	Potential Single-Use Plastic Substitute	Sean Leahy	8	Simsbury
Avon	Talcott Mountain Academy	Brigette Zacharczenko	2019	L7	1	How Ocean Acidification Affects Shelled Marine Life	Rhea Doshi	7	Farmington
Avon	Talcott Mountain Academy	Brigette Zacharczenko	2003	L7	3	Amounts of bacteria on Organic and Non-Organic fruits and vegetables	Ilana Mezheritskiy	7	Avon
Avon	Talcott Mountain Academy	Brigette Zacharczenko	2018	L7	1	Well-being in middle schoolers using intervention strategies	Nandini Panigrahi	7	west hartford
Avon	Talcott Mountain Academy	Lydia Gibb	5525	P8	1	Pellet-"O"-Trap: Capturing Plastic Pellets Through a Multi-Filter System & Analyzing Their Progression Using Binary Image Processing	Sia Reddy	8	Avon
Avon	Talcott Mountain Academy	Anya Jensen	2503	L8	1	Applications of Machine Learning in the Prediction and Clustering of COVID-19 Deaths	Vanessa Slepini	8	West Hartford
Avon	Talcott Mountain Academy	Anya Jensen	2515	L8	1	The RightSwitch: An Automatic Light Switch Sterilization Device	Samuel Wu	8	Avon

[SchTown] [School] [Teacher]
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Bethel Bethel High School Ray Turek

3001	LS	3	Longitudinal Changes in Linguistic Complexity Among Professional Mixed Martial Artists
Student(s) Emily Cole			Grade 12 Town Bethel

Bozrah Fields Memorial School Mr. Fish

5521	P8	2	Alerting Drivers That a Child was Forgotten in a Vehicle With a Circuit Sequence Alert System (CSAS)
Student(s) Andrew Pagnotta			Grade 8 Town Bozrah

Bozrah Fields Memorial School Mr. Fish

4002	PT	3	Measurement Techniques and Mathematical Analysis of Gum Bubbles
Student(s) Reagan Reid			Grade 7 Town Bozrah
Leah Kozerefski			Grade 7 Town Gilman

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

3007	LS	3	Using Prytheruem extract from Chrysanthemum cinerariifolium as a natural insecticide against Grylloidea
Student(s) Albert Capodanno			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6009	PS	2	The Use of Sodium Bicarbonate as a Local Buffer to Decrease Ocean Acidity in Localized Areas to Increase the Oyster Growth
Student(s) Kennedy Carr			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

3061	LS	2	A novel mitigation technique to control the spread of the invasive Spotted Lanternfly (L. Delicatul) through cardiac glycoside extracts
Student(s) Cooper Carr			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

3002	LS	1	Quantifying the interspecific impacts of the native relationships of the Long Island Sound
Student(s) Sarah Davis			Grade 12 Town Trumbull

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6072	PS	2	Absorbing High Concentrations of Nitrogen using Biochar as a Preventative Measure to Mitigate the Dinoflagellate Karenia brevis.
Student(s) Kelsey Farber			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6017	PS	2	Developing A Plant Based Sustainable and Renewable Polychloroprene Fabrication
Student(s) Angela Ferraro			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6057	PS	1	An Inexpensive, Simple and Effective Application of Off the Grid Solar Disinfection For Potable Water
Student(s) Allison Greenberg			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

3006	LS	2	The Use of Secondary Plant Metabolites to Reduce Pseudogymnoascus destructans Transmission Among North American Bats
Student(s) Grace Hilton			Grade 12 Town Fairfield

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6063	PS	2	Utilizing Rooftop Gardens as a Means of Geothermal Energy Through Ground to Air Heat Transfer Systems
Student(s) Aidan King			Grade 12 Town Milford

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
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Bridgeport Bridgeport Aquaculture Center Kirk Shadle

3109	LS	2	Utilizing micronutrient activity to facilitate metabolic reprogramming in Mucopolysaccharidosis Type IIIA
Student(s) Kailey Smith			Grade 12 Town Milford

Bridgeport Bridgeport Aquaculture Center Kirk Shadle

6067	PS	2	Optimizing Desalinization of Industrial Brine Through Temperature Swing Solvent Extraction
Student(s) Jackson Warters			Grade 12 Town Milford

Bridgeport Fairchild Wheeler: Biotechnology Rachel Klem

3506	LST	3	The Effects of Stress on the Immune System
Student(s) Kalaba Kibwe			Grade 12 Town Stratford
Rebecca Tunes-Muniz-DeSouza			Grade 12 Town Stratford

Bridgeport Fairchild Wheeler: Biotechnology Teresa Oliveira

3505	LST	3	Be Gone Shell Rot!
Student(s) Phi Uanino			Grade 10 Town Shelton
Angeline Tran			Grade 10 Town Shelton

Bridgeport John Winthrop School Ms. Beres

4004	PT	2	How Does The Amount of Borax Affect The Bounce Height Of Homemade Bounce Balls?
Student(s) Nancy Bonilla Rodriguez			Grade 8 Town Bridgeport
Abril Garcia-Martinez			Grade 8 Town Bridgeport

Bridgeport John Winthrop School Susan Beres

1017	LT	2	How do fears change with age?
Student(s) Shiloh Gutierrez			Grade 8 Town Bridgeport
Alyssa Cruz			Grade 8 Town Bridgeport

Bridgeport John Winthrop School Ms. Beres

2516	L8	1	Which Filtration Material Leads to the Best Drinking Water?
Student(s) Wayne Lewis			Grade 8 Town Bridgeport

Bridgeport Park City Prep Charter School Mr. Jaekle

5522	P8	1	The Connection of Coronal Mass Ejections and Sunspots
Student(s) Marcus Rosario			Grade 8 Town Bridgeport

Bridgeport Waltersville School John Cunningham

4012	PT	3	Does Potato Variety Affect Electrical Output in a Potato Battery?
Student(s) Luna Santiago			Grade 8 Town BRIDGEPORT
Delani Bailey			Grade 8 Town Bridgeport

Cheshire Cheshire High School Julie Barker

6030	PS	2	How Raspberry Pi Microcomputers and Computer Vision Artificial Intelligence Can Be Utilized to Provide Aid to the Visually Impaired Community
Student(s) Siddhant Bhardwaj			Grade 11 Town Cheshire

Cheshire Cheshire High School Julie Barker

3058	LS	3	What is the Difference Between Expensive Surgical/Cloth Masks and Cheap Surgical/Cloth Masks? Should One Be Preferred Over the Other?
Student(s) Dipti Rajbongshi			Grade 9 Town Cheshire

Conn. Science & Engineering Fair

Preliminary Judging Results

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Cheshire Cheshire High School Julie Barker
6048 PS 2 A Drunk-Driving Alerting Device using an HX711 Weight Sensor and MQ-3 Alcohol sensor
Student(s) Sagarika Srinivasan **Grade** 11 **Town** Cheshire

Cheshire Cheshire High School Julie Barker
3050 LS 3 Effects of Lead on Gallus Gallus Embryonic Neurite Projections
Student(s) Tyler Tan **Grade** 12 **Town** Cheshire

Cheshire Cheshire High School Julie Barker
3044 LS 3 Statistical Methods on Incorporating Protein Structure Information with Rare Variant Association Studies
Student(s) Shangyu Xu **Grade** 11 **Town** Cheshire

Cheshire Dodd Middle School Clare Gonzalez
5509 P8 1 A Domestic Violence Alerting Device Comprised of an Analog Sound Level Meter OLED Display and iOS Mobile App built using Swift
Student(s) Suchita Srinivasan **Grade** 8 **Town** Cheshire

Cheshire St. Bridget School Michelle. Carroll
5011 P7 1 Coding an Affordable Goat Identification System for All Farmers
Student(s) Avery Fowler **Grade** 7 **Town** Cheshire

Cheshire St. Bridget School Mrs. Michelle Carol
5504 P8 2 Electrolyte Challenge
Student(s) Hailey Greasley **Grade** 8 **Town** Naugatuck

Clinton The Morgan School Lawrence Chapman
6083 PS 3 Neck and Head injuries in football
Student(s) Connor Loth **Grade** 12 **Town** Clinton

Clinton The Morgan School Lawrence Chapman
6047 PS 3 The Effect of a Car's Age on Cabin Noise
Student(s) Davis Walker **Grade** 10 **Town** Clinton

Clinton The Morgan School Lawrence Chapman
6045 PS 3 Marine Debris Collected From Hammonasset Beach State Park Between January 1, 2022 to February 28, 2022
Student(s) Julia Walker **Grade** 12 **Town** Clinton

Danbury Danbury High School Victoria McClelland
6064 PS 2 Comparing Various Machine Learning Models while Predicting Taxonomy using Codon Combinations
Student(s) Shriya Jonnalagadda **Grade** 10 **Town** Danbury

Danbury Henry Abbott Technical High School andrew ipkovich
3048 LS 3 ways to safely provide lightening service to cosmetology customers using safer chemicals or organic products
Student(s) Ruth Pacheco **Grade** 11 **Town** danbury

Danbury St. Gregory the Great School Mrs. Fahey
2004 L7 3 How Does Water Temperature Affect Yeast Fermentation and Pizza Dough Growth?
Student(s) Anthony Bruno **Grade** 7 **Town** New Fairfield

Conn. Science & Engineering Fair

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Danbury St. Gregory the Great School Christine Fahey
2013 L7 2 The Affects of Antacid Tablets on Acidity
Student(s) Francesco Carr **Grade 7** **Town** Brookfield

Danbury St. Gregory the Great School Mrs,Fahey
1004 LT 1 Sun vs. Moon
Student(s) Briella Dunkle **Grade 8** **Town** Newtown
Nicole Dicello **Grade 8** **Town** Southbury
Sophia DaSilva **Grade 8** **Town** Danbury

Danbury St. Gregory the Great School Mrs. Fahey
2510 L8 2 Type of light on sweet corn
Student(s) Andrew Falcao **Grade 8** **Town** Danbury

Danbury St. Gregory the Great School Mrs. Fahey
5003 P7 2 Folds in Flight
Student(s) Albert Fenaroli **Grade 7** **Town** Danbury

Danbury St. Gregory the Great School Mrs. Fahey
5520 P8 3 The Effect Of A Parabola On Wi-Fi Speed
Student(s) Liswed Layog **Grade 8** **Town** Danbury

Danbury St. Gregory the Great School Christine Fahey
2002 L7 2 Fertilizer Frenzy
Student(s) Connor McMahon **Grade 7** **Town** Brookfield

Danbury St. Gregory the Great School Mrs. Fahey
4015 PT 3 Light it up with wind energy
Student(s) Lukas Muy-cardenas **Grade 8** **Town** Danbury
David Perez **Grade 8** **Town** Danbury

Danbury Westside Middle School Academy Jon Neuhausel
5510 P8 1 The Effects of Ice Mitigation Strategies on Livestock Waterers
Student(s) Sophia Blumenreich **Grade 8** **Town** Danbury

Danbury Westside Middle School Academy Jon Neuhausel
5514 P8 1 Model System Design For Technology-Assisted Insulin Regulation
Student(s) Sydney Borst **Grade 8** **Town** Danbury

Danbury Westside Middle School Academy Jon Neuhausel
4013 PT 1 Benefit of Granular and Mesh Filters on Concentrations of Microplastics in Water
Student(s) Krrish Brahmshatriya **Grade 8** **Town** Danbury
Benjamin Miller **Grade 8** **Town** Danbury
Alexander Herzegovitch **Grade 8** **Town** Danbury

Danbury Westside Middle School Academy Jonathan Neuhausel
5009 P7 1 Impact of prediction methods on the percentage accuracy of a stock forecast.
Student(s) Alejandro Mayorga **Grade 7** **Town** Danbury

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
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Danbury Westside Middle School Academy Jon Neuhausel

5517	P8	3	The Impact of Acetic Acid and Citric Acid on the Integrity of Plastic
Student(s) Aiden McAllister			Grade 8 Town Danbury

Danbury Westside Middle School Academy Jon Neuhausel

5501	P8	2	The effect that hours of the night have on magnitude per square arcsecond on a sky quality meter
Student(s) David Miller			Grade 8 Town Danbury

Danbury Westside Middle School Academy Jon Neuhausel

5523	P8	2	Environmental Impact on the Corrosion of Steel Nipples
Student(s) Emilia Schweitzer			Grade 8 Town Danbury

Danbury Westside Middle School Academy Jonathan Neuhausel

5505	P8	1	Design and Testing of an Integrated 360 Degree Pi Camera System for Deep Well Rescue Mission
Student(s) Sandhya Sudarsanam			Grade 8 Town Danbury

Danbury Westside Middle School Academy Jon Neuhausel

5002	P7	3	Citrus-based Super Absorbent Polymers (SAPs) for Remediation
Student(s) Allison Tran			Grade 7 Town Danbury

Darien Darien High School David Lewis

3097	LS	1	The effect of microplastic ingestion on the health of parasites (Cryptocotyle lingua) in periwinkles (Littorina littorea).
Student(s) Alison Enters			Grade 12 Town Darien

Darien Darien High School Guy Pratt

3113	LS	2	BLAST-based Characterization of Protein Drug Targets in Protozoan Parasites
Student(s) Ryan Jones			Grade 12 Town Darien

Darien Darien High School David Lewis

3011	LS	2	Selection of High-Affinity scFv for HPRT by Yeast Surface Display to Create an Antibody-Mediated Immunotherapy
Student(s) Stella Meier			Grade 12 Town Darien

Darien Darien High School David Lewis

6071	PS	1	Cloud Identification in Mars Daily Global Maps with Deep Learning
Student(s) Sebastian Mengwall			Grade 12 Town Darien

Darien Darien High School Guy Pratt

3043	LS	2	Identification of Druggable Sites and Lead Compounds to Target ORF8 in SARS-CoV-2
Student(s) Sibi Satheeshkumar			Grade 12 Town Darien

Darien Darien High School Guy Pratt

3047	LS	2	Positive Reinforcement of Invasive Species Populations Through Manipulation of Microclimate by <i>Berberis thunbergii</i> , <i>Amyntas agrestis</i> , and <i>Lumbricus terrestris</i>
Student(s) Charlotte Simari			Grade 12 Town Darien

Darien Darien High School Mrs. Leventhal

3049	LS	2	To Shine or Not to Shine – How Does a Zebrafish Pigment Cell Decide to Turn Black or Silver?
Student(s) Sophie Xu			Grade 11 Town Darien

Conn. Science & Engineering Fair

Preliminary Judging Results

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East Lyme East Lyme High School Frederic Clark

3523	LST	3	Effects of Deep Brain Stimulation Against Certain Malignant Tumors
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Student(s)	Nikhita Bolineni	Grade 11	Town East Lyme
	Yurina Shirai	Grade 12	Town Niantic
	Jenny Guo	Grade 12	Town East Lyme

East Lyme East Lyme High School Fred Willson

6001	PS	2	The Hydrogen Motor
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Student(s)	Benjamin England	Grade 12	Town salem
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East Lyme East Lyme High School Frederic Clark

3024	LS	3	Pathoid - A Video Game that Teaches the Immune System
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Student(s)	Eric Yang	Grade 9	Town East Lyme
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Ellington Ellington Middle School Scott Raiola

5007	P7	1	Wall climbing soft robot
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Student(s)	Thomas Gerlach	Grade 7	Town Ellington
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Enfield Chiaravalle Academy Mrs. Quinby

1008	LT	2	How music affects pill bugs behaviors.
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Student(s)	Anna Burnham	Grade 7	Town Suffield
	Hadley Buttrey	Grade 7	Town Windsor

Enfield Chiaravalle Academy Timothy Coleman

1014	LT	2	Sodium Bicarbonate as a Cost Effective Method for Raising the pH of Soil
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Student(s)	Lainey Czerwicz	Grade 8	Town Feeding Hills
	Olivia Keise	Grade 8	Town South Windsor
	Bridget Kelly	Grade 8	Town Enfield

Enfield Chiaravalle Academy Tim Coleman

1001	LT	3	Do Essential Oils Promote the Growth of Yeast Cells?
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Student(s)	John Donnelly	Grade 7	Town Suffield
	John Pereira IV	Grade 7	Town Enfield

Enfield Chiaravalle Academy Tim Coleman

1016	LT	1	Improving Composting During the Winter Months
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Student(s)	Delaney Pappas	Grade 7	Town Enfield
	Sabrina Plaz	Grade 7	Town Suffield
	Madeline Agrafojo	Grade 7	Town Suffield

Enfield Chiaravalle Academy Mr. Coleman

1002	LT	2	Optimum Composting For Eisenia fetida
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Student(s)	Sage Pierce	Grade 8	Town Enfield
	Catherine Wilcox	Grade 8	Town Enfield

Enfield Chiaravalle Academy Timothy Coleman

4014	PT	1	Can You Separate Solids and Liquids Going Down Your Sink
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Student(s)	Caleb Quinby	Grade 7	Town Windsor
	Holt Serrano	Grade 7	Town Somers

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Enfield Chiaravalle Academy Timothy Coleman
3003 LT 1 Comparing Kale Growth In Hydroponics Versus Potting Soil In Winter
Student(s) Carys Wilson **Grade 7** **Town** Somers
Delphine Lamattina **Grade 7** **Town** West Hartford

Enfield Chiaravalle Academy Timothy Coleman
4010 PT 1 Determining the Most Efficient and Effective Method of Filtration for the Purpose of Creating Potable Water
Student(s) Rhys Wilson **Grade 8** **Town** Somers
Oliver Kolb **Grade 8** **Town** Longmeadow
Jacek Cieslak **Grade 8** **Town** Monson

Fairfield Fairfield College Preparatory School Mrs. Kiel
3055 LS 3 Better Honey
Student(s) David Boudreau Jr **Grade 11** **Town** Ansonia

Farmington Miss Porter's School Betty Wang
3078 LS 1 Using Single-Cell Analysis to Explore Prognostic Genes in Prostate Cancer
Student(s) Junyue Ma **Grade 11** **Town** Farmington

Fishers Island Fishers Island School Carol Giles
3083 LS 2 The Effects Ocean Acidification has on the Antimicrobial properties of Sulfur Nanoparticles from the Marine Sponge Species Halichondria Bowerbanki.
Student(s) Madeleine Hatfield **Grade 11** **Town** GROTON

Glastonbury Glastonbury High School Diane Pintavalle
3085 LS 2 Potential Role of Filaggrin within Different Stages of Osteosarcoma
Student(s) Meghan Brink **Grade 12** **Town** South Glastonbury

Glastonbury Glastonbury High School Diane Pintavalle
3102 LS 3 Investigating bipartite reaction of DNA polymerase iota with deubiquitinating enzyme usp7
Student(s) Zoe Gates **Grade 12** **Town** Glastonbury

Glastonbury Glastonbury High School Diane Pintavalle
3027 LS 3 Changes in Resting State Electroencephalographic (EEG) Power in Children with Developmental Dyslexia Over the Course of a Five-Week Reading Intervention
Student(s) Ruvih Homma **Grade 12** **Town** Glastonbury

Glastonbury Glastonbury High School Diane Pintavalle
3020 LS 1 Machine Learning Analysis of EEG Signals to Predict Working Memory Performance in Healthy and Schizophrenic Adults
Student(s) Niteesh Kalangi **Grade 11** **Town** Glastonbury

Glastonbury Glastonbury High School Diane Pintavalle
3081 LS 2 Investigation of RNA concentration in three layered or surgical masks among children with and without asthma
Student(s) Tyler Rogers **Grade 11** **Town** Glastonbury

Glastonbury Glastonbury High School Diane Pintavalle
3046 LS 3 Longitudinal viability of a mixed community of microbes in two methods of preservation
Student(s) Arushi Sharma **Grade 12** **Town** Glastonbury

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
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Glastonbury Glastonbury High School Diane Pintavalle

3031 LS 3 Impact of Cationic Lysine Residues on the Endosomal Escape Rate of Nucleic Acid Nanocapsules

Student(s) Emily Szydlo **Grade** 12 **Town** Glastonbury

Greenwich Brunswick School Dana Montanez

3033 LS 3 White-Nose Syndrome: A study of UV light on propagation and growth rate of a proxy for Pseudogymnoascus destructans.

Student(s) Cole Cline **Grade** 10 **Town** Greenwich

Greenwich Brunswick School Dana Montanez

3105 LS 2 Comparing the effectiveness of chemically derived chitin v. protease derived chitin, in increasing plant growth in low water areas.

Student(s) Luke Dougherty **Grade** 10 **Town** Bronxville

Greenwich Brunswick School Dana Montanez

3502 LST 3 Metal-Mediated Electromagnetic Radiation:

Student(s) Collin Eschricht **Grade** 11 **Town** OLD GREENWICH

Hunter Spiess **Grade** 11 **Town** Old Greenwich

Greenwich Brunswick School Dana Montanez

3516 LST 2 A Comparative Analysis of Denitrifying Bioreactors as an Abatement of Heightened Nitrous Oxide Levels

Student(s) Jackson Fels **Grade** 11 **Town** Riverside

William Klein **Grade** 11 **Town** Greenwich

Greenwich Brunswick School Dana Montanez

3508 LST 2 Microbial Fuel Cells: Generation of Clean Energy by Electrogenic Bacteria

Student(s) Henry Ferguson **Grade** 10 **Town** Greenwich

Thomas Pope **Grade** 10 **Town** Darien

Greenwich Brunswick School Dana Montanez

6061 PS 2 Optimization of the Sleep Cycle by Activation of the Parasympathetic Nervous System Using Low-frequency Vibrations and Heart Rate Variability Analysis.

Student(s) Ryan Kulsakdinun **Grade** 11 **Town** Armonk

Greenwich Brunswick School Dana Montanez

6501 PST 2 Thermal Desalination: A More Efficient and Sustainable Alternative to Reverse Osmosis

Student(s) Robert MacNaughton **Grade** 10 **Town** Bronxville

Michael Yeager **Grade** 10 **Town** Greenwich

Greenwich Brunswick School Dana Montanez

3509 LST 1 Utilizing the Mycorrhizal relationship between plants as a biological control to prevent insect invasion and disease in plant populations.

Student(s) Jack Morningstar **Grade** 10 **Town** Greenwich

Sebastian DeAngelis **Grade** 10 **Town** Darien

Greenwich Brunswick School Dana Montanez

3507 LST 1 Identification and purification of algal supplements as a means to reduce methane production within ruminants

Student(s) James O'Connor **Grade** 10 **Town** Rye

Whip Gorman **Grade** 10 **Town** New Cannan

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Greenwich Brunswick School Dana Montanez
3512 LST 1 Determining the optimal concentration of nitrogen in fertilizer by examining Wheat samples with NIR spectroscopy.

Student(s) Campbell Officer Grade 11 Town Greenwich
Henry Sorbaro Grade 11 Town Greenwich

Greenwich Brunswick School Dana Montanez
6512 PST 3 Utilization of Recycled Materials as an Efficient Insulator for Power Distribution Lines

Student(s) Casey Quinson Grade 10 Town Rye Brook
Connor Choy Grade 10 Town Greenwich

Greenwich Brunswick School Dana Montanez
3518 LST 2 Production and purification of luciferase via bacterial transformation: An effort to create a self-sustaining light cube

Student(s) Trip Williams Grade 11 Town Greenwich
Teddy Danforth Grade 11 Town Greenwich

Greenwich Brunswick School Dana Montanez
3510 LST 2 A comparative analysis of the presence of microplastics in soil and rainwater between rural areas, urban areas, and areas adjacent to trash burning facilities

Student(s) Jackson Wolfram Grade 11 Town Riverside
Tomas Delgado Grade 11 Town Riverside

Greenwich Greenwich Academy Kristin Gannon
6052 PS 2 Developing and Testing Updated Geometric Structures to Model the Optical Properties of Spirulina, a Helical Photosynthetic Microorganism

Student(s) Natalie Shell Grade 12 Town Greenwich

Greenwich Greenwich Academy Dr. Monica Ortiz
6038 PS 3 Using Artificial Intelligence to Analyze the Changes in Opioid Prescriptions and Usages Brought by Efforts to Reduce Overdoses

Student(s) Karthika Siva Grade 11 Town Stamford

Greenwich Greenwich Catholic School Mrs. Carol Lutz
1007 LT 1 Ready, Set, Grow

Student(s) Nicholas Barone Grade 7 Town Stamford
Luke Mannello Grade 7 Town Stamford

Greenwich Greenwich Catholic School Carol Lutz
4011 PT 3 Flow Infinity

Student(s) Rebecca Conroy Grade 8 Town Stamford
Carlita Mannello Grade 8 Town Stamford

Greenwich Greenwich Catholic School Carol Lutz
5502 P8 3 Fashion Frenzy

Student(s) Jaimie Corpuz Grade 8 Town Stamford

Greenwich Greenwich Catholic School Mrs. Carol Lutz
5010 P7 3 House Elevation

Student(s) Ornella Saviano Grade 7 Town Stamford

Conn. Science & Engineering Fair

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Greenwich Greenwich Country Day School Nathan Haag

3017 LS 3 Could Hydroponics be the Solution to a Sustainable Food System?

Student(s) Isabella Brahmst

Grade 12 **Town** South Salem

Greenwich Greenwich Country Day School Nathan Haag

3075 LS 3 What Paint is Best: Finding the Most Effective Anti-Fouling Paint for Steel Hulled Boats.

Student(s) Leonardo Corsano-Leopizzi

Grade 11 **Town** old Greenwich

Greenwich Greenwich Country Day School Nathan Haag

3026 LS 3 A DSM III, IV, and V Dissection of the Accuracy of Autism in Film Overtime

Student(s) Ellery Futch

Grade 11 **Town** Greenwich

Greenwich Greenwich Country Day School Nathan Haag

6070 PS 3 Prototype of a Cleaning Robot

Student(s) Ellie Hochberg

Grade 11 **Town** Rye

Greenwich Greenwich Country Day School Nathan Haag

3100 LS 3 The Effects of a Social-Emotional Education on Elementary Students: A Study of Past SEL Meta-Analyses and the Greenwich Country Day School SEL Curriculum

Student(s) Tessa Loverro

Grade 12 **Town** Greenwich

Greenwich Greenwich Country Day School Dr. Nathan Haag

3062 LS 2 Comparison of the Cognitive Ability of Musically Trained Children

Student(s) Emily Moloney

Grade 12 **Town** Rye

Greenwich Greenwich High School Andrew Bramante

3034 LS 3 Shedding Light on an Obscure Disorder; Highlighting the Psychological and Psychosocial Effects of Hidradenitis Suppurativa

Student(s) Melisa Bayram

Grade 11 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

6027 PS 1 Simple Remediation of Heavy Metal and Fertilizer Runoff Water Contaminants via Carbon Nanotube Infused Pinus strobus Xylem Filtration

Student(s) Justin Bernstein

Grade 9 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

3025 LS 2 Rapid, Visual Detection of Benadryl Cocktails via Competitive, Amine-Responsive Fluorophores

Student(s) Angelina Fogarty

Grade 11 **Town** old greenwich

Greenwich Greenwich High School Andrew Bramante

3040 LS 2 A Novel Drug Delivery System of Gold-Nanoparticle—Chaperone complex to successfully mitigate Drug-induced Nephrotoxicity, an unwanted Side Effect in Organ Transplant Medications

Student(s) Ana-Florina Galic

Grade 12 **Town** Riverside

Greenwich Greenwich High School Andrew Bramante

3012 LS 2 Synthesis of Polysaccharide-Encapsulated Hydroxyapatite Nanocomposites to Stimulate Plant Growth and Promote Phosphorus Absorption.

Student(s) Isabella Gega

Grade 11 **Town** Greenwich CT

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Greenwich Greenwich High School Andrew Bramante

3030 LS 1 Design of a Novel, Dual-Functioning Tissue Plasminogen Activator and Anticoagulant Therapeutic for Rapid Ischemic Stroke Treatment

Student(s) Ambika Grover

Grade 11 **Town** Riverside

Greenwich Greenwich High School Andrew Bramante

3059 LS 2 The Influence of Social Capital on Covid-19 Vaccine Hesitancy

Student(s) Zara Haque

Grade 9 **Town** Riverside

Greenwich Greenwich High School Andrew Bramante

6080 PS 1 Remediation of Fire-Foam PFAs from Contaminated Water Using an Eco-Friendly and Reusable Water Filtration System

Student(s) Adam Kleshchelski

Grade 11 **Town** Cos Cob

Greenwich Greenwich High School Andrew Bramante

6039 PS 1 Eco-Friendly Remediation of Polycyclic Aromatic Hydrocarbons in Stormwater via Magnesium-Infused Calcite Crystal, Supramolecular Hydrogel Scaffolding

Student(s) Audrey Lin

Grade 10 **Town** Riverside

Greenwich Greenwich High School Andrew Bramante

3091 LS 1 Development of Readily Accessible Machine Learning Diagnostics for Early Stage Mild TBI using Eye Tracking Methods

Student(s) Ashley Malkin

Grade 9 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

6060 PS 1 Increasing Elasticity, Durability, and Function of Wearable PANI-Sense pH Health Monitors via a Superhydrophobic, Textile Framework

Student(s) Madeline Minichetti

Grade 11 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

3107 LS 2 Inhibition of Covid-19 Induced Cell Inflammation via R-954 B1R Antagonist Disruption of the Bradykinin Storm

Student(s) Ella Moore

Grade 12 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

3028 LS 3 The Role of Social-Media Addiction on Perception of Real vs. the Imagined; Who Suffers the Most?

Student(s) Catherine O'Brien

Grade 11 **Town** Old Greenwich

Greenwich Greenwich High School Andrew Bramante

6082 PS 1 Biomimetic Removal of Microspheres Water Contaminants, via Calcite-Infused, Coral-like Melamine Sponges

Student(s) Naomi Park

Grade 10 **Town** Riverside

Greenwich Greenwich High School Andrew Bramante

3063 LS 2 Design of a Wearable, Skin-Specific UVB Sensor for Instantaneous Detection of Skin-Damaging Radiation

Student(s) Yurika Sakai

Grade 11 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

6050 PS 2 On the machine learning-assisted generation of Alcubierre-like spacetime metrics with consideration for use in interstellar travel

Student(s) Yuxuan Song

Grade 11 **Town** Old Greenwich

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Greenwich Greenwich High School Mr. Andrew Bramante

3095 LS 2 Pre & Post Emergent Control of Invasive *Amaranthus palmeri* via Prolonged, Time-Release of Polymer Nano-herbicides

Student(s) John Trudeau **Grade** 12 **Town** Greenwich

Greenwich Greenwich High School Andrew Bramante

6042 PS 1 Controlled Delivery of Sulfoxaflor Pesticide via Cinnamaldehyde-infused Hydrogels to Reduce Toxicity to Honey and Wild Bee Pollinators

Student(s) Elizabeth Wallace **Grade** 11 **Town** Old Greenwich

Greenwich Sacred Heart Greenwich Joan Fei

6091 PS 2 Designing and Testing an Activated Carbon Cloth Storm Drain Filter to Reduce the Prevalence of Phosphates and Nitrates in the Long Island Sound

Student(s) Abby Barnett **Grade** 12 **Town** Darien

Greenwich Sacred Heart Greenwich Joan Fei

3116 LS 2 Determining the Association Between Commercial Fishing Presence and Mako Shark Locations using GPS Tracking Data

Student(s) Isabelle Berkery **Grade** 12 **Town** Harrison

Greenwich Sacred Heart Greenwich Ms. Joan Fei

3103 LS 2 Investigating the effect of moderate to intense aerobic and anaerobic exercise on oxygen saturation, visuospatial task performance: implications for female student athletes.

Student(s) Isobel Costello **Grade** 11 **Town** Stamford

Greenwich Sacred Heart Greenwich Ms. Fei

3082 LS 2 Forest Restoration after Wildfire: The Effect of the Addition of Saccharides on Seedling Survival After Replanting in Burnt Soil

Student(s) Regina Finn **Grade** 12 **Town** Old Greenwich

Greenwich Sacred Heart Greenwich Joan Fei

6509 PST 2 Developing a research tool to help determine the risk of Chronic Traumatic Encephalopathy in football players

Student(s) Gabby Lauria **Grade** 12 **Town** Bedford

Caroline Hisler **Grade** 12 **Town** Cos Cob

Greenwich Sacred Heart Greenwich Joan Fei

3004 LS 2 Using NYC Parks Department "Report a Sighting" Data to Investigate the Relationship Between Emotional Response to Wildlife and Borough and Environmental Racism in New York City

Student(s) Annie O'Connor **Grade** 12 **Town** Rye

Greenwich Sacred Heart Greenwich Joan Fei

6514 PST 1 Association between Aggressive Behavior and Allele 1820272961:A:C in Purebred and Mixed Breed Canines

Student(s) Gigi Pascal **Grade** 12 **Town** Darien

Sarah Augustine **Grade** 12 **Town** Greenwich

Caroline Nemec **Grade** 12 **Town** Darien

Guilford Guilford High School Mary Mooradian

3042 LS 3 Did the Vaccination Quell COVID-19 Surge after Holidays: An Analysis of Real-World Data

Student(s) Jason Li **Grade** 10 **Town** Guilford

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Guilford Guilford High School Dr. James Carlson
6065 PS 3 A New Hybrid: Harnessing the Power of Friction
Student(s) Michael Neiss **Grade 11** **Town** Guilford

Guilford Guilford High School James Carlson
3098 LS 3 Understanding Attention Span: The Changes, How it can be Manipulated, and its Importance Today
Student(s) Zachary Neiss **Grade 11** **Town** Guilford

Hamden Hamden Hall Country Day School Frank Gasparro
5507 P8 2 2009 MacBook Restoration
Student(s) Andrei Balas **Grade 8** **Town** Cheshire

Hamden Hamden Hall Country Day School Frank Gasparro
3023 LS 2 Research on Eye Movement Recognition of Early Childhood Autism Spectrum Disorder Based on Hybrid Timing Neural Network
Student(s) Liangtong Dong **Grade 11** **Town** Hamden

Hamden Hamden Hall Country Day School Frank Gasparro
3099 LS 3 Impact of COVID Pandemic on College Applications for students with lower social economic status
Student(s) Evan Huang **Grade 11** **Town** Guilford

Hamden Hamden Hall Country Day School Doctor Frank Gasparro
5515 P8 2 iAAA band (Impact-absorbing and alerting band)
Student(s) Ravindu Karunaratne **Grade 8** **Town** Hamden

Hamden Hamden Hall Country Day School Brian Christman
2517 L8 1 The Latch
Student(s) Neev Makin **Grade 8** **Town** Hamden

Hamden Hamden Hall Country Day School Frank Gasparro
3015 LS 3 Testing the efficacy of an SiO₂ mixture to Reduce Microplastics Dissolved Into the Oceans
Student(s) Leo Southam **Grade 11** **Town** Shelton

Hamden Hamden Hall Country Day School Paulomi Aldo
2509 L8 1 Copper Contamination of Freshwater sources which pollute and harm the ecosystem and its consumers (Phytoremediation)
Student(s) Sophia Vash **Grade 8** **Town** Fairfield CT

Hamden Hamden Hall Country Day School Kelly Ryan
6043 PS 3 Miniature intelligent marine garbage collection ship combined with digital intelligent manufacturing technology
Student(s) Yuhan Wan **Grade 12** **Town** Hamden

Hamden Hamden Hall Country Day School Frank Gasparro
3527 LST 1 Determining Carbon Dioxide Levels in Classroom Settings
Student(s) Yue Zhuo **Grade 10** **Town** Woodbridge
Huiwen Zeng **Grade 10** **Town** Cheshire

Hamden Sacred Heart Academy Paula Napychank
3090 LS 3 Growth of Organic VS. Nonorganic Green Bean Seeds
Student(s) Emma Bausch **Grade 9** **Town** Cheshire

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Hamden Sacred Heart Academy Paula Napychank
3014 LS 3 The Dark Side of Dance: Are Ballet Dancers More at Risk for Eating Disorders and Negative Self Image?
Student(s) Elizabeth Blair Grade 9 Town Cheshire

Hamden Sacred Heart Academy Paula Napychank
3064 LS 2 Retracing Evolution: The Venus Flytrap
Student(s) Tess Borowski Grade 9 Town Oxford

Hamden Sacred Heart Academy Dr. Sibani Sengupta
3054 LS 1 Anti-Viral Properties within Ayurvedic Remedies and their Potential COVID-19 Applications
Student(s) Mehr Chhatre Grade 12 Town Hamden

Hamden Sacred Heart Academy Pamela Brownell
6507 PST 3 Grass vs. Turf Fields: The Effects of Heat
Student(s) Addison Galaski Grade 10 Town North Haven
Rebecca Zelaya Grade 10 Town Wallingford

Hamden Sacred Heart Academy Pam Brownell
3088 LS 2 Noise Pollution's (decibels) Affect on the Heart Rate of Daphnia Magna
Student(s) Danyella Lanche-Flores Grade 10 Town West Haven

Hamden Sacred Heart Academy Pamela Brownell
6085 PS 3 The Separation of Polycotton
Student(s) Mary McNulty Grade 10 Town Wallingford

Hamden Sacred Heart Academy Elizabeth Christophy
3053 LS 3 The Relationship Between Handedness and Emotions
Student(s) Madison Rossetti Grade 10 Town Hamden

Hartford Environmental Sciences Magnet School Ms. Hays
2010 L7 1 Mealybug Management 101
A Study of Household Plant Pest Treatment Options
Student(s) Avni Manish Grade 7 Town Newington

Hartford Renzulli Academy Foifon Teawdatwan
2514 L8 2 Do Dead Leaves Help Plants Grow?
Student(s) Dorian Ciscel Grade 8 Town Hartford

Hartford Renzulli Academy Foifon Teawdatwan
5006 P7 2 It's not a pro, It's a robot?
Student(s) Gavin Dusel Grade 7 Town Newington

Hartford Renzulli Academy Foifon Teawdatwan
4005 PT 2 What household materials will clean pennies the best?
Student(s) Jackson Miller Grade 8 Town Hartford, CT
Zihao Zhou Grade 8 Town Hartford

Hartford Renzulli Academy Foifon Teawdatwan
2008 L7 2 Extracting DNA from strawberries
Student(s) Damaris Reynoso Grade 7 Town Hartford

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Kensington St. Paul School Mr Fredricks
5004 P7 3 Magic of the Evidence
Student(s) Alexis Bourque **Grade 7** **Town** berlin

Kent Kent School Jesse Klingebiel
3016 LS 2 A comprehensive study to reprogram senescent cells for treatment of age-related diseases
Student(s) Siwen Cui **Grade 11** **Town** Kent

Kent Kent School Jesse Klingebiel
6003 PS 1 Flexibility with Flying: Replicable and Attachable Aerial Robot with Multi-Degree-of-Freedom
Student(s) Siyi Lu **Grade 11** **Town** Kent

Kent Kent School Jesse Klingebiel
6033 PS 2 Using U-Nets and Semantic Segmentation on Satellite Imagery for Crop Growth Prediction
Student(s) Aryan Saha **Grade 11** **Town** Southington

Manchester Manchester High School Wendy Turek-Hernandez
3079 LS 2 The Effects of Temperature on Tobramycin and Perfluorocarbon Emulsions on Bacteria
Student(s) Leila Affini **Grade 12** **Town** Manchester

Manchester Manchester High School Wendy Turek-Hernandez
6053 PS 2 The Design And Development Of A Point Of Care Device For The Detection of Enteric Diseases
Student(s) Paris Bazemore **Grade 11** **Town** Manchester

Manchester Manchester High School Wendy Turek-Hernandez
6088 PS 3 The Effects of Environmental Buffers on Traffic-Related Noise Pollution
Student(s) Emma Greenfield **Grade 12** **Town** Manchester

Manchester Manchester High School Ms. Wendy Turek-Hernandez
3008 LS 2 The Effect of Azospirillum lipoferum on the Microbial Recovery of Corn Soil after a Moderate-Intensity Fire
Student(s) Alexandra Hamza **Grade 12** **Town** Manchester

Manchester Manchester High School Wendy Turek
3066 LS 2 The Effect of PLA and HDPE Microplastics on the Growth of Cherry Tomato Plants
Student(s) Jack Larson **Grade 12** **Town** Manchester

Manchester St. James School Ellen Oei
5005 P7 1 Power to the Puck
Student(s) Jameson Fisher **Grade 7** **Town** EAST HARTFORD

Middlebury Westover School Sydney Kadiyala
6032 PS 2 Flexible mechanical worm based on steering gear
Student(s) Xinyi Xie **Grade 11** **Town** Middlebury

Milford Platt Technical High School Sara Bruno
3519 LST 1 The Palingenesis Project
Student(s) Ashley Ramos **Grade 11** **Town** Bridgeport
Bruno Valdivia **Grade 11** **Town** West Haven
Katelyn Zayas **Grade 11** **Town** New Haven

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

New Canaan St. Aloysius School Deborah Phillips

2005 L7 3 Grow Plants Grow - Position of Light and Plant Growth

Student(s) Lillian Gayer

Grade 7 Town Norwalk

New Canaan St. Aloysius School Deborah Philips

2016 L7 1 Are You "Bready" For Some Mold?

Student(s) Maria Victoria Triantafyllos

Grade 7 Town Stamford

New Haven Engineering and Science University Magnet School Roger Rushworth

5001 P7 2 What do different baking ingredients do?

Student(s) Titiladeoluwa Adeniran

Grade 7 Town Seymour

New Haven Engineering and Science University Magnet School Alyssa Anderson

3501 LST 3 How Can Changing or Adding a Habit to a Daily Routine Reduce Stress and Improve the Overall Well-being of Adolescent Brains?

Student(s) Temi Adeniran

Grade 9 Town Seymour

Mari Arnold

Grade 9 Town Stratford

New Haven Engineering and Science University Magnet School Roger Rushworth

1005 LT 1 Flocculants to Mitigate Harmful Algal Blooms (HABS)

Student(s) Saket Aliminate

Grade 8 Town Milford

Sahithi Aliminate

Grade 7 Town Milford

New Haven Engineering and Science University Magnet School Roger Rushworth

4006 PT 2 Which Type of Rocket Fln will affect a Rocket's Time, Height, and Distance the Greatest?

Student(s) Nivrith Ananth Iyer

Grade 8 Town West Haven

Parth Gokhale

Grade 8 Town Milford

New Haven Engineering and Science University Magnet School Roger Rushworth

2006 L7 1 Catalace

Student(s) Ethan Joseph

Grade 7 Town West Haven

New Haven Engineering and Science University Magnet School Roger Rushworth

3009 LS 1 Implementing Nontoxic Modified Magnetic Metal Oxide Nanoparticle Enhanced Biochar Filtration for the Efficient Removal of Emerging Contaminants in an Aqueous Solution

Student(s) Snigtha Mohanraj

Grade 9 Town Ansonia

New Haven Engineering and Science University Magnet School Roger Rushworth

2001 L7 2 The Effects of Run-off Pollutants on the Harmful Algal Bloom (HAB) model C. Vulgaris

Student(s) Adithi Variar

Grade 7 Town Wallingford

New Haven Hopkins School Murali Chiravuri

2512 L8 2 Rapid Screening for Hypertrophic Cardiomyopathy in Athletes

Student(s) Bodhan Chiravuri

Grade 8 Town Bridgeport

New Haven Hopkins School Dr. Phillip Stewart

6054 PS 1 Real-Time Motion Tracking System and Data Analytics for Live Insects Using Three-Wheeled Servosphere Robot

Student(s) Nicholas Lee

Grade 11 Town Trumbull

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

New Haven Sound School Chuck Mulligan

6068 PS 3 Correlation between Rainfall and Suspended Sediment Levels in the Mill River System/ New Haven Waterways

Student(s) Cora FitzGerald

Grade 9 **Town** Branford

New Haven Sound School Charles Mulligan

3504 LST 2 Potential Impact of Acidity in Culture on Early Stage Artemia Sp. Nauplii

Student(s) Ruby Hoffman-Blustajn

Grade 11 **Town** Hamden

Gabriella Spata

Grade 11 **Town** New Haven

New Haven Sound School Charles Mulligan

6092 PS 2 Correlation Between Rainfall and Dissolved Oxygen in Local New Haven Waterways: A Predictive Model for Human Impact on this System

Student(s) Tamzin Maines

Grade 9 **Town** Old Saybrook

New Milford Canterbury School Kelli Darrin

6046 PS 3 3-D Printing Mechanic Prosthetic Arm For Children

Student(s) Yijie Wang

Grade 11 **Town** New Milford

Norwich Norwich Technical High School Tiffani Kaminski

3503 LST 2 Comparing the effects of sugar-beet juice on river microenvironments against traditional ice salt runoff

Student(s) Damian Diaz

Grade 11 **Town** Moosup

Jay Podziewski

Grade 11 **Town** Montville

Norwich Norwich Technical High School Tiffani Kaminski

3522 LST 1 Using Different Compounds to Reduce Hydrophobicity in Soil After a Forest Fire

Student(s) Janelle Lambert

Grade 11 **Town** Scotland

Hailey Ruddock

Grade 11 **Town** Oakdale

Norwich Norwich Technical High School Tiffani Kaminski DeAngelis

3517 LST 2 Heat shocking Caenorhabditis Elegans with Congo Red Dye to Show buildup of Plaque leading to Alzheimer's

Student(s) Jasmine Martinez

Grade 11 **Town** colchester

Joshua Lavender

Grade 11 **Town** Moosup

Norwich Norwich Technical High School Tiffani Kaminski

3513 LST 2 The Juvenile Hormone from Tenebrio molitor Affects Larvae Development and May Decrease Growth of Tumors in Humans

Student(s) Mason Netopski

Grade 11 **Town** Norwich

Kaylee Gray

Grade 11 **Town** Norwich

Norwich Norwich Technical High School Tiffani Kaminski

3515 LST 1 Biodegradation of Polystyrene by Bacteria Found in The Gut of Tenebrio Molitor Larvae

Student(s) Tori Simmons

Grade 11 **Town** Norwich

Sara Smith

Grade 11 **Town** New London

Pawcatuck St. Michael School Anna-Helene Grossomanides

2012 L7 1 American Juvenile Horseshoe Crab Aquaculture

Student(s) Gianna Giovanelli

Grade 7 **Town** Westerly

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Pawcatuck St. Michael School Anna-Helene Grossomanides

5008 P7 1 Underground Life

Student(s) Owen Nicholas

Grade 7 Town Pawcatuck

Pawcatuck St. Michael School Anna-Helene Grossomanides

2513 L8 2 The DNA of Fruit

Student(s) May Serraro

Grade 8 Town Westerly

Pawcatuck St. Michael School Anna-Helene Grossomanides

5512 P8 2 Energized

Student(s) Connor Walsh

Grade 8 Town Pawcatuck

Pomfret Pomfret School Tae Ryu

3045 LS 3 Development of Oil Spill Detection Technology using Video Image Processing by Deep Neural Network

Student(s) Yuree Oh

Grade 10 Town Pomfret

Pomfret Pomfret School Deary Timothy

6073 PS 2 A novel vascular 3D-printing approach assisted by cardiac single cell transcriptomics

Student(s) Zhoutong Qi

Grade 10 Town Montgomery

Redding CT STEM Foundation Catherine Piscitelli

3052 LS 2 Determining the Availability of Effective Online Triage Resources for Patients at Musculoskeletal Urgent Care Centers

Student(s) Anchal Bahel

Grade 11 Town Woodbridge

Redding CT STEM Foundation Catherine Piscitelli

3121 LS 3 Effects of Cannabinoids on Verbal Learning and Memory: Relationship to Biological Sex

Student(s) Emily Gu

Grade 10 Town Woodbridge

Redding CT STEM Foundation Cathrine Piscitelli

3041 LS 3 Determining Position Preference of Different Species of Insect Galls in Relation to Each Other on the Solidago altissima

Student(s) Sophia Liu

Grade 11 Town Orange

Redding CT STEM Foundation Catherine Piscitelli

6025 PS 3 Developing a Graphical User Interface to Organize Ecommerce Product Attributes

Student(s) Haoyue Yang

Grade 11 Town Woodbridge

Ridgefield Ridgefield High School Aine Kapell

3106 LS 1 Assessing the efficacy of botanical repellents against blacklegged ticks

Student(s) Ava Anderson

Grade 11 Town Ridgefield

Ridgefield Ridgefield High School Patrick Hughes

6056 PS 2 A Wavelet-based Method for Generalizing Molecular Latent Spaces for Assisted Traversal

Student(s) Ian Murdock

Grade 12 Town Ridgefield

Ridgefield Ridgefield High School Aine Kapell

3076 LS 2 Determining the Risk of Future Forest Fires due to Fuel Flammability

Student(s) Allison Price

Grade 12 Town Ridgefield

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Ridgefield Ridgefield High School Aine Kapell

3019	LS	3	The Probability of a Shark Attack Across the East Coast
Student(s) Riley Riebling			Grade 12 Town Ridgefield

Ridgefield Ridgefield High School Ryan Gleason

6069	PS	2	Short-Term Biodegradation Analysis of Greener Alternatives to Plexiglass Pilot Study
Student(s) Evia Rodriguez			Grade 12 Town Ridgefield

Ridgefield Ridgefield High School Ryan Gleason

3029	LS	2	The Effect of Computer Light on Caenorhabditis Elegans Development
Student(s) Tiffany Yin			Grade 11 Town Ridgefield

Sandy Hook Newtown High School Tim DeJulio

6055	PS	2	Bird Image Recognition Using Pytorch
Student(s) Iucca Iapierre			Grade 12 Town Newtown

Sandy Hook Newtown High School Tim DeJulio

6008	PS	3	Track System for Safe and Effective Lifeboat Launches
Student(s) Hannah Lucian			Grade 12 Town Oxford

Sandy Hook Newtown High School Tim DeJulio

6077	PS	2	Modular Robotic System for Multipurpose Robots
Student(s) Benjamin Ochs			Grade 12 Town Sandy Hook

Sandy Hook Newtown High School Mr.DeJulio

3013	LS	2	Data mining on efflux pump LmrS for either the MIC's of antibiotics or fluorescence of Ethidium bromide.
Student(s) Tyler Saunders			Grade 11 Town newtown

Sandy Hook Newtown High School Timothy DeJulio

6086	PS	2	Accessible program and system to accurately align a star tracking mount using a camera.
Student(s) Sam Staubly			Grade 12 Town Newtown

Sandy Hook Newtown High School Timothy DeJulio

3093	LS	2	The Effect of Placebos and Nocebos on Pain Perception
Student(s) Anna White			Grade 11 Town Sandy Hook

Shelton Shelton Intermediate School Erica Napoli

1011	LT	3	Moon Madness?
Student(s) Kurtlene Dela Rosa			Grade 7 Town Shelton
Enja Abo-Alaial			Grade 7 Town shelton

Shelton Shelton Intermediate School Erica Napoli

4007	PT	1	Sheets that Dry, Which one is Fly?
Student(s) Sailor Martin			Grade 8 Town Shelton
Quinn Wherley			Grade 8 Town Shelton CT

Shelton Shelton Intermediate School Erica Napoli

2504	L8	1	The Power of Teeth Whitening
Student(s) Reese Vartelas			Grade 8 Town Shelton

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Simsbury Simsbury High School Golden Heather
6051 LS 2 Computational Identification of miRNAs associated with Heart Tumor and Cardiovascular Disease
Student(s) Jeslyn Gao **Grade** 11 **Town** Simsbury

South Windsor South Windsor High School Dr. Rama Balasubramanian
6076 PS 2 A Spectroscopic Study of Iron-Based Minerals on Earth and Mars
Student(s) Pranav Shankar **Grade** 11 **Town** South Windsor

Stamford Bi-Cultural Hebrew Academy Christopher Graseck
1009 LT 3 Best Plants For Short Term Growth
Student(s) Elliot Nerenberg **Grade** 7 **Town** Stamford
Sheldon Heyman **Grade** 7 **Town** Westport

Stamford Bi-Cultural Hebrew Academy Christopher Graseck
2009 L7 2 Salt Effect on the Plant Growth of Raphanus sativus
Student(s) Sadie Palker **Grade** 7 **Town** Stamford

Stamford Bi-Cultural Hebrew Academy Mr. Graseck
2014 L7 2 How Do Small Amounts of Sodium Chloride Affect the Growth of Brassica Rapa (Mustard Plants)
Student(s) Joshua Schwartz **Grade** 7 **Town** Stamford

Stamford King School Victoria Schulman
3096 LS 2 Drosophila melanogaster locomotion, myonuclei size, and myonuclei position are affected by differential gene expression
Student(s) Giovanna Armetta **Grade** 12 **Town** Stamford

Stamford King School Victoria Schulman
3067 LS 2 Structure Determination of Novel Non-Canonical Base Pairs and Mismatches
Student(s) William Bernfeld **Grade** 12 **Town** Stamford

Stamford King School Victoria Schulman
3032 LS 2 A Convolutional Neural Network for Real-Time Tick Classification and Disease Risk Analysis
Student(s) Antonia Kolb **Grade** 10 **Town** New Canaan

Stamford King School Victoria Schulman
6028 PS 1 Electrochromism paired with Finite Difference Time Domain Modeling allows for the Successful Prediction of Color Change Achieved by Electrochromic Reactions
Student(s) Gouri Krishnan **Grade** 11 **Town** Darien

Stamford King School Victoria Schulman
6026 PS 2 Passive Thermal Energy Storage for Air Conditioning Systems Utilizing Phase Change Material
Student(s) Adam Nomani **Grade** 12 **Town** Stamford

Stamford King School Victoria Schulman
3038 LS 1 The use of Prime Editing to Induce and Correct the CFTR-F508del mutation in iPSCs.
Student(s) Benjamin Persily **Grade** 11 **Town** Scarsdale

Stamford King School Victoria Schulman
6040 PS 2 Biocement Bricks for Negative Emissions: Electrochemical Ocean Carbon Capture
Student(s) John Russell **Grade** 12 **Town** Riverside

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Stamford King School Victoria Schulman

3071 LS 2 The essential 23S rRNA methyltransferase rv3579c confers intrinsic macrolide resistance in Mycobacterium tuberculosis

Student(s) Yuriy Sandmeier **Grade** 11 **Town** New Rochelle

Storrs E.O. Smith High School Cheryl Granger

6515 PST 3 Developing Deep Learning Methods to Enable Environment Recognition for Autonomous Cars

Student(s) Riley Francis **Grade** 11 **Town** Mansfield
Kanishk Tihaiya **Grade** 11 **Town** Storrs-Mansfield
Anthony Song **Grade** 11 **Town** Mansfield Center

Storrs E.O. Smith High School Dr. Granger

3526 LST 3 Effect of Lesson Delivery Media on Student Learning Outcome and Information Retention

Student(s) Yafee Khan **Grade** 9 **Town** Storrs Mansfield
Hudson Shi **Grade** 9 **Town** Mansfield

Storrs E.O. Smith High School Cheryl Granger

3521 LST 3 How Cooking Different Kinds of Poultry at Different Temperatures Affects the Growth of E. Coli

Student(s) Mary Lynch **Grade** 9 **Town** Storrs
Mackenzie Dahlen **Grade** 9 **Town** Mansfield Center

Suffield Suffield Academy Suika Liu

6014 PS 3 On the Casas-Alvero's Conjecture

Student(s) Jiaxuan Su **Grade** 10 **Town** Shanghai

Suffield Suffield High School Melanie Brown

6005 PS 2 Designing and Developing an Affordable intelligent (Manned/Unmanned) VTOL Aircraft for Transportation, Search and Rescue

Student(s) Hassan Aljafar **Grade** 12 **Town** Suffield

Suffield Suffield High School Melanie Brown

6023 PS 3 The Effectiveness of Different Structures at Limiting Beach Erosion

Student(s) Peter Danise **Grade** 12 **Town** Suffield

Suffield Suffield High School Melanie Brown

3036 LS 2 The Anticoagulant blood mixer and anti-stress device for patients donating blood

Student(s) Ana-Lois Davis **Grade** 10 **Town** Broad Brook

Suffield Suffield High School Melanie Brown

6074 PS 3 Post FDM 3D Printing Processes to Improve Layer Adhesion.

Student(s) Jack Shanks **Grade** 12 **Town** Suffield

Suffield Suffield Middle School Melanie Brown

5511 P8 2 Converting Excess Heat Generated From Furnaces Into Usable Energy

Student(s) Noora Khaled **Grade** 8 **Town** Suffield

Trumbull Christian Heritage School Daniel Cote

6037 PS 3 Combating Covid-19 through Programming using Scratch Software

Student(s) Aidan Bradley **Grade** 11 **Town** Ansonia

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Trumbull Christian Heritage School Daniel Cote
6018 PS 3 "How the Amount of Air Pressure in Bike Tires Affects a Bicycle's Efficiency and the Fuel Economy"
Student(s) Nathanael Mack Grade 11 Town West Haven

Trumbull Christian Heritage School Dr. Daniel Code
5516 P8 2 Are LED's affected by heat?
Student(s) Alessandro Ochoa Grade 8 Town Wilton

Trumbull Christian Heritage School Mr Daniel Cote
5508 P8 1 The Luboni
Student(s) Lucille Presbrey Grade 8 Town Ridgefield

Trumbull Christian Heritage School Dr. Dan Cote
5506 P8 3 Building an Electric Skateboard
Student(s) Elijah Teixeira Grade 8 Town Bridgeport

Trumbull Christian Heritage School Daniel Cote
6020 PS 3 Portable Green Energy Generator and Storing Unit
Student(s) Laura Wertalik Grade 11 Town Milford

Wallingford Choate Rosemary Hall Murali Chiravuri
3117 LS 1 Development of a Home N-Terminal Pro-Brain Natriuretic Peptide Assay for the Diagnosis of Congestive Heart Failure.
Student(s) Maya Chiravuri Grade 11 Town Bridgeport

Wallingford Choate Rosemary Hall Jan Cook
3018 LS 2 Modeling Predator-Prey Relationships of Brine Shrimp and Invasive Waterboatmen to Optimize Ecological Stability
Student(s) Stanley Cho Grade 9 Town Wallingford

Wallingford Choate Rosemary Hall Todd Currie
3060 LS 2 Purification of Contaminated Water Using Natural Coagulants
Student(s) Nilan Kathir Grade 9 Town Cheshire

Wallingford Choate Rosemary Hall Dr. Chris Hogue
6049 PS 2 JARVITS: A Novel Deep Learning IoT Traffic Control System for Real-time Detection and Signal Optimization
Student(s) Ryan Kim Grade 11 Town New Haven

Wallingford Choate Rosemary Hall Sunny Kim
3119 LS 3 Development of LMMD (Lower Methane, More Degradable) Bag Using Marine Bio-Waste Sargassum
Student(s) Ryan Yoon Ha Lee Grade 10 Town Wallingford

Wallingford Choate Rosemary Hall Jan Cook
6011 PS 2 Application of Soft Robots in Building Collapse Rescues
Student(s) Ann Song Grade 9 Town Farmington

Wallingford Choate Rosemary Hall Xin Wang
3101 LS 1 A clinicogenomic prediction model for the early diagnosis of lung cancer
Student(s) Isabella Wu Grade 10 Town Stony Brook

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Waterbury ACES at Chase Angela Langlais
5513 P8 3 Rube Goldberg Machine: Observing Gravity In Action
Student(s) Zanri Barnett **Grade 8** **Town** Meriden

Waterbury ACES at Chase Ms. Langlais
1006 LT 2 .Bean Maze
Student(s) Tyler Brennan **Grade 8** **Town** Waterbury
Tylon Lott **Grade 8** **Town** Waterbury,CT
My Le Le Delacruz **Grade 8** **Town** Waterbury

Waterbury ACES at Chase Ms Langlais
1018 LT 2 Hand sanitizer vs Hand soap
Student(s) Avianna Foster **Grade 8** **Town** Meriden
Jamile Valiente **Grade 8** **Town** Meriden

Waterbury ACES at Chase Ms. Langlais
4001 PT 2 Substances vs Ice: Which will melt an ice cube first?
Student(s) Dynasia NiiAryee **Grade 8** **Town** Middletown
Ya'Nyza Plummer **Grade 8** **Town** Meridian
Kristina Valentin **Grade 8** **Town** Meriden

Waterbury ACES at Chase Angela Langlais
1013 LT 3 The volcano experiment
Student(s) Sarah Persaud **Grade 8** **Town** waterbury
Alana Haynes **Grade 8** **Town** waterbury
kimora woodson **Grade 8** **Town** meriden

Westport Greens Farms Academy Mathieu Freeman
3010 LS 2 The Comparative Effects of Fuhc Immunosuppressants and Allotransplanted Blood Plasma Transfusion on Allotransplant Acceptance in Botryllus Schlosseri
Student(s) Shealeigh Crombie **Grade 12** **Town** Westport

Westport Greens Farms Academy Freeman
6022 PS 2 Combating the Better Than Average Effect by Using Perceived Driving Ability.
Student(s) Grant Miller **Grade 12** **Town** Darien

Westport Greens Farms Academy Mathieu Freeman
3089 LS 2 The Effect of Diphenhydramine on the Progression of Parkinson's Disease in Drosophila Melanogaster
Student(s) Danielle Mirin **Grade 12** **Town** New Canaan

Westport Greens Farms Academy Mathieu Freeman
3005 LS 2 The Effects of Green Tea on β -Amyloid-Induced Alzheimer's Disease in Lymnaea Stagnalis
Student(s) Avery Woodworth **Grade 12** **Town** Fairfield

Westport Staples High School Amy Parent
3110 LS 1 Alzheimer's Disease Identification with Machine Learning Based on Wavelet Transform
Student(s) Aalok Bhattacharya **Grade 11** **Town** Westport

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Westport Staples High School Dr. Dharmadhikari
3039 LS 2 Computational Study on the Effects of Granzyme A on Follicular Lymphoma Microenvironment During CAR T Cell Therapy

Student(s) Tanvi Gorre **Grade** 11 **Town** Westport

Westport Staples High School Nick Morgan
6016 PS 2 Finding Gravitationally Lensed Quasar Systems by using a Polar Shapelet Decomposition Approach

Student(s) Ishan Prasad **Grade** 12 **Town** Westport

Westport Staples High School Amy Parent
3118 LS 2 Essential Oils from Thyme and Rosemary in Combination as an Antibiotic-Sparing Agent to Treat Escherichia coli-caused Urinary Tract Infections

Student(s) Mallika Subramanian **Grade** 11 **Town** Westport

Wilton Middlebrook School Ms. Norman
2011 L7 2 Sugar Content of Fruit using a Refractometer

Student(s) Megan Dragunat **Grade** 7 **Town** Wilton

Wilton Middlebrook School Kendra Norman
4003 PT 1 School Bus Approach Alert System

Student(s) Leonardo Kulon **Grade** 7 **Town** Wilton
Sanaka Dash **Grade** 7 **Town** Wilton

Wilton Middlebrook School Carol Festa
5503 P8 3 Revolutionary 3D-Printed Shoes to Change the Way We Think about Footwear

Student(s) William Olmstead **Grade** 8 **Town** Wilton

Wilton Middlebrook School Deborah Mallozzi
4009 PT 1 Illusion v. Reality

Student(s) Arista Sullivan **Grade** 8 **Town** Wilton
Meredith Sullivan **Grade** 8 **Town** Wilton

Wilton Middlebrook School Carol Festa
1012 LT 1 A novel way to solve coral bleaching

Student(s) Preethi Vijay **Grade** 8 **Town** Wilton
Trisha Prabhu **Grade** 8 **Town** Wilton

Windsor Academy of Aerospace & Engineering Lili Aramli
3003 LS 3 An Investigation on the Multi-Generational Effect of Acidic Soil on the Growth of Brassica rapa

Student(s) Casey Campellone **Grade** 11 **Town** Vernon

Windsor Academy of Aerospace & Engineering Michelle Bellinger
6504 PST 2 Beyond Sunshine: Robotic Optimization for Maximum Efficiency of Solar Energy Production

Student(s) Aiden Christy **Grade** 12 **Town** Glastonbury
Neel Vachhani **Grade** 11 **Town** South Windsor

Windsor Academy of Aerospace & Engineering Dr. Michelle Bellinger
6502 PST 1 The Effect Of Altering The Material Composition in Ultra High-Performance Concrete (UHPC) With Regional Materials On Compressive Strength

Student(s) Justin Ho **Grade** 11 **Town** Suffield
Nathan Magold **Grade** 11 **Town** Southington

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Windsor Academy of Aerospace & Engineering Dr. Lili Aramli

3072 LS 3 Examining the Use of Navicula sp. as an Organic Fertilizer for Brassica Rapa

Student(s) Devon Mansfield **Grade** 11 **Town** East Hampton

Windsor Academy of Aerospace & Engineering Dr. Michelle Bellinger

6505 PST 1 Piezoelectric Wind Harvesting Electrical Energy Conversion

Student(s) Dylan Pueschel **Grade** 12 **Town** Hebron
John Watrous **Grade** 12 **Town** Hartford

Windsor Academy of Aerospace & Engineering Michelle Bellinger

3514 LST 2 Computational Hydroponics

Student(s) Zahrion Watson **Grade** 11 **Town** bloomfield
Vanessa Weir **Grade** 11 **Town** Hartford
Khaley-shai Wyndham **Grade** 11 **Town** windsor

Windsor Madina Academy Mr. Coleman

6059 PS 3 A Proposal to Use Cost Effective Eco-friendly and Stronger Bricks for Modern Construction:

Student(s) Yameen Ahmed **Grade** 9 **Town** Vernon, Rockville

Windsor Madina Academy Mr. Coleman

5524 P8 3 Converting Sound Into Electricity

Student(s) Hamza Alsaleh **Grade** 8 **Town** Windsor Locks

Windsor Madina Academy Mr. Timothy Coleman

3524 LST 3 The Liquid Bulk Viscosity Effect on the Dynamics of a Single Cavitation Bubble

Student(s) Tasneem Zoghoh **Grade** 9 **Town** Enfield
Deana Khatib **Grade** 9 **Town** Windsor

Windsor The Loomis Chaffee School Koby Osei-Mensah

3068 LS 1 Computational Psychiatry: Application of Machine Learning Methods to Analyze Marijuana Addictions and Craving

Student(s) Sean Lee **Grade** 12 **Town** Los Altos

Windsor The Loomis Chaffee School Mr. Osei-Mensah

3057 LS 2 The effects of different soil environments on the rate of HDPE and LDPE degradation by Bacillus subtilis

Student(s) Edward Park **Grade** 11 **Town** Windsor

Windsor The Loomis Chaffee School Koby Osei-Mensah

6021 PS 1 NeRF-UAV: Inexpensive 3-D Colored Video Reconstruction Using RGB Camera Equipped Drone Swarms and Neural Radiance Fields

Student(s) Eric Sun **Grade** 11 **Town** Flushing

Windsor The Loomis Chaffee School Koby Osei-Mensah

6089 PS 2 Analysis of Leading-Edge Devices on Aerodynamic Lift at Different Angles of Attack

Student(s) Ting-Yo Tan **Grade** 12 **Town** Taipei

Windsor The Loomis Chaffee School Mr. Osei-Mensah

6078 PS 2 Host Galaxies of High Redshift Quasar Absorbers

Student(s) Benson Wang **Grade** 11 **Town** Concord

Conn. Science & Engineering Fair

Preliminary Judging Results

[SchTown] [School] [Teacher]
[Proj#] [FCat] [Honors] [Project Title]

Windsor The Loomis Chaffee School Koby Osei-Mensah

6079 PS 2 Introduction to Surreal Numbers: Exploring Real, Infinite and Infinitesimal Values and Their Hackenbush Games

Student(s) Yat Him Cyrus Wong

Grade 12 **Town** Hong Kong

Woodbridge Amity Regional High School Catherine Piscitelli

3115 LS 3 Applying an Integrated Diffusion Framework to Identify interactions Between Chromatin Regions and Gene Expression using a Multimodal Embryoid Developmental Dataset

Student(s) Anushka Acharya

Grade 11 **Town** Bethany

Woodbridge Amity Regional High School Catherine Piscitelli

6087 PS 2 Developing an Inductive Stent to Accurately Detect the Occurrence of In Stent Restenosis

Student(s) Piyush Bahel

Grade 11 **Town** Woodbridge

Woodbridge Amity Regional High School Catherine Piscitelli

6090 PS 2 The Optimization of a Ground Collision Avoidance System and Application to Inhibit Controlled Flight Into Terrain Accidents For Single Engine Aircraft

Student(s) Mason Beaudette

Grade 12 **Town** Orange

Woodbridge Amity Regional High School Catherine Piscitelli

6031 PS 1 Theoretical Modelling and Parameterization of a Novel-Actuator-Based Transtibial Pediatric Prosthetic

Student(s) Aditi Bhattamishra

Grade 10 **Town** Orange

Woodbridge Amity Regional High School Mrs. Catherine Piscitelli

3022 LS 2 Developing and Testing a Novel Acne Reducing Spray for Face Masks and Accessories

Student(s) Francis Cavallaro

Grade 11 **Town** Orange

Woodbridge Amity Regional High School Catherine Piscitelli

3021 LS 2 Creating a Frequency-Emitting Program to Enhance Mosquito Capture and Surveillance Efforts in Response to the Spread of Mosquito-Borne Diseases

Student(s) Daniel Liu

Grade 11 **Town** Woodbridge

Woodbridge Amity Regional High School Catherine Piscitelli

6058 PS 1 The Manufacture and Expanded Function of a Locking Container to Eliminate the Distraction of Phones While Driving

Student(s) Scott Lowder

Grade 12 **Town** Orange

Woodbridge Amity Regional High School Catherine Piscitelli

6013 PS 2 Optimizing a Portable Vertical Axis Wind Turbine with Improved Construction Methods and Testing of Various Airfoils

Student(s) Brodey Lu

Grade 12 **Town** Orange

Woodbridge Amity Regional High School Catherine Piscitelli

3520 LST 3 Development of an Autonomous WatchOS Application that uses HRV and Vibrational Pulses to Reduce Stress

Student(s) Sheehan Munim

Grade 11 **Town** Orange

Allen Liu

Grade 11 **Town** Woodbridge

Woodbridge Amity Regional High School Catherine Piscitelli

6015 PS 3 Creating a Systematic ESG (Environmental Social Governance) Scoring System using Social Network Analysis and Machine Learning to Influence Company Practices to be More Sustainable

Student(s) Aarav Patel

Grade 10 **Town** Orange

[SchTown] [School] [Teacher]
 [Proj#] [FCat] [Honors] [Project Title]

Woodbridge Amity Regional High School Catherine Piscitelli

6044	PS	3	Designing and Optimizing a More Efficient Optical Component for Thermal Cameras
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Student(s) Anthony Sharonov **Grade** 11 **Town** Bethany

Woodbridge Amity Regional High School Catherine Piscitelli

6041	PS	3	Modeling Investigation on Amines and Sea-salt Aerosol Interactions to Assess Their Potential Climate Impacts
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Student(s) Pranav Sundararajan **Grade** 12 **Town** Orange

Woodbridge Amity Regional High School Catherine Piscitelli

3073	LS	2	Analyzing the Mechanisms of Bacteriophage P22 Genome Ejection
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Student(s) Aiden Tischer **Grade** 12 **Town** Bethany

Woodbridge Amity Regional High School Catherine Piscitelli

6081	PS	2	Developing a Machine Learning Algorithm to Accurately Predict Geomagnetic Storms
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Student(s) Iris Yan **Grade** 10 **Town** Woodbridge

Woodbridge Amity Regional High School Catherine Piscitelli

6066	PS	2	Using an Artificial Neural Network Modelled After the Human Neocortex to Gain a Better Understanding of How the Neocortex Creates New Ideas
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Student(s) Annika Yun **Grade** 10 **Town** Orange