



TOP 300 MASTERS 2019

About Broadcom MASTERS

Broadcom MASTERS® (Math, Applied Science, Technology and Engineering for Rising Stars), a program of Society for Science & the Public, is the premier middle school science and engineering fair competition, inspiring the next generation of scientists, engineers and innovators who will solve the grand challenges of the 21st century and beyond. We believe middle school is a critical time when young people identify their personal passion, and if they find STEM elements, they can be inspired to follow their passion by taking STEM courses in high school.

As the only middle school STEM competition that leverages Society-affiliated science fairs as a critical component of the STEM talent pipeline, the Broadcom MASTERS consists of the top 10 percent of 6th, 7th and 8th grade projects entered in Society-affiliated fairs around the country. After submitting the online application, the Top 300 MASTERS are selected by a nationally ranked panel of scientists, engineers and educators.

The Top 300 MASTERS are honored for their work with a prize package that includes an award ribbon, a Top 300 MASTERS certificate of accomplishment, a Broadcom MASTERS backpack, a Broadcom MASTERS decal, a one-year family digital subscription to *Science News* magazine, an Inventor's Notebook, courtesy of The Lemelson Foundation, a one-year subscription to Wolfram Mathematica software, courtesy of Wolfram Research, and a special prize from Jeff Glassman, CEO of Covington Capital Management. In recognition of the role that teachers play in the success of their students, each Top 300 MASTERS' designated teacher also will receive a Broadcom MASTERS tote bag, a one-year digital subscription to *Science News* magazine, and a special edition booklet of Invention and Innovation articles, courtesy of The Lemelson Foundation.

From the Top 300 MASTERS group, 30 finalists are selected on September 18. They will present their research projects and compete in hands-on team STEM challenges to demonstrate their 21st Century skills in critical thinking, collaboration, communication and creativity at the Broadcom MASTERS finals. Top awards include a grand prize of \$25,000, trips to STEM summer camps and more.

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- Samueli Foundation
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- Computer History Museum
- *Science News for Students*
- Smithsonian Environmental Research Center
- Society for Science & the Public's
Affiliated Regional and State Science and Engineering Fairs
- Parents, teachers and mentors of the 2,348
Broadcom MASTERS entrants

2019 Top 300 MASTERS

Students are listed in order by school state, fair code, and name of school based on information provided by each student in their entry. Students listed under the regional fair may also have qualified through their state fair. Students conducting team projects were eligible, but each student entered individually and was judged based on the submitted written entry. The grade listed for each student is from Spring 2019. Visit <https://findafair.societyforscience.org> to look up Broadcom MASTERS affiliated fairs by state.

***Top 300 MASTERS nominated by both regional and state fair.**

ALABAMA

USAL01 Greater East Alabama Regional Science and Engineering Fair

Auburn Junior High School

Auburn, Alabama

Naeim Mahjouri (Grade 8)*

Eddy Current Braking System

USAL03 North Alabama Regional Science and Engineering Fair

Discovery Middle School

Madison, Alabama

Ashwin Prabhakar (Grade 8)

Multifunctional Biodegradable Polymers for Environmental Applications

ARIZONA

USAZ50 Arizona Science and Engineering Fair

Arizona College Prep — Oakland

Chandler, Arizona

J.T. Mulvihill (Grade 7)

The Effect of Football Helmet Lining or Coating on Impact Force Reduction to the Head

BASIS Peoria

Peoria, Arizona

Pranav Penmatcha (Grade 8)

Rendering Graphene

Bogle Junior High School

Chandler, Arizona

Leela T. Raj-Sankar (Grade 7)

Shining a Light on Osmosis

Casteel High School

Queen Creek, Arizona

Ashlyn Grace Drew (Grade 8)

Heightened Hydroponics

Franklin Junior High School

Mesa, Arizona

Rylan Lee Gardner (Grade 8)

Stall/Spin Recovery Via Increased Lift and Upwards Pitching Moment Using the Magnus Effect

ARKANSAS

USAR05

Central Arkansas Regional Science and Engineering Fair

LISA Academy — West

Little Rock, Arkansas

Bhavana Sridharan (Grade 7)

Who Is the Hero of the Cell? A Comparative Study Between Natural and Synthetic Antioxidants

CALIFORNIA

USCA01

Orange County Science and Engineering Fair

Beacon Park School

Irvine, California

Basim Cheema-Sabir (Grade 7)*

A Cost-Effective Prosthetic Hand for Transradial Amputees

Katherine C. Robertson (Grade 7)*

A Cost-Effective Prosthetic Hand for Transradial Amputees

Michael L. Shen (Grade 7)*

A Cost-Effective Prosthetic Hand for Transradial Amputees

Fairmont Private School

Santa Ana, California

Kamran Ansari (Grade 7)

Characterizing the Dosage Profiles of PEMF Products by Evaluating Their Magnetic Field Distributions

Pola Pietrzkowski (Grade 8)

Increasing Amount of Proteins in Edible Plant Cells to Improve Plant-Based Food

Home School

Irvine, California

Grant Gallagher (Grade 8)

Investigating the Electrostatic Effects of Striking a Tennis Ball with a Tennis Racquet

Lakeside Middle School

Irvine, California

Arshia Ishi Anand (Grade 8)

Antacids: Synthetic vs. Natural

Orchard Hills Middle School

Irvine, California

LeAnn Tai (Grade 8)

Effect of Climatic Changes on Plant Growth: A Study of Their Adaptation Patterns

Rancho San Joaquin Middle School

Irvine, California

Aniyah Xu Shen (Grade 8)

The Power of Soil Productivity

Paulina Wodarz (Grade 8)

The Evolution of Human Feelings Through Writing over Two Hundred Years

Samuel E. Talbert Middle School

Huntington Beach, California

Ishan Ghosh (Grade 8)

Evaluating Effectiveness of Select Natural Remedies for their Anticoagulating Properties on Bovine Plasma – An In Vitro Study

USCA02

Los Angeles County Science and Engineering Fair

Foothills Middle School

Arcadia, California

Disha Ramanujam (Grade 7)

Which Has More DNA Degradation: Organic or Non-Organic Plant Produce?

Horace Mann Elementary School

Beverly Hills, California

Davin Jeong (Grade 8)

Energy from Wastewater

Portola Highly Gifted Magnet Middle School

Tarzana, California

Zaighum R. Nagra (Grade 8)

The Effect of Corn Silk Extract on Neuronal Regeneration

Suzanne Middle School

Walnut, California

Jason Wang (Grade 8)

Big Data Analysis of Climate Change: Extreme Temperature, Rain, Snow, and Ice Trends

The Archer School for Girls

Los Angeles, California

Karen Garcia (Grade 8)

Anthropogenic Particles: Examining the Presence in Microplastics in Salts of Different Qualities

Weizmann Day School

Pasadena, California

Maya Martinez Lurvey (Grade 8)

*Testing the *Oncopeltus fasciatus*' Neuromotor Responses to Olfactory and Visual Stimuli*

USCA03

Fresno County Science Fair

Fugman Elementary School

Fresno, California

Pauline Victoria Allasas Estrada (Grade 6)

Early Detection of Drought Stress in Bell Pepper (C. annuum) Using a Remotely Operated Vehicle with an Infrared Camera

Granite Ridge Intermediate

Fresno, California

John Benedict Allasas Estrada (Grade 8)

Predicting Broccoli Yield Utilizing a Remote Sensing Low Altitude Multispectral Camera — A Two-Season Trial

Ananya Vinay (Grade 8)

Disruption of Circadian Rhythm — A Big Price to Pay if We Disregard Nature's Zeitgeber

USCA04

Sacramento Regional Science and Engineering Fair

Altamont Elementary School

Mountain House, California

Jordan Prawira (Grade 7)*

Spira Mirabilis: Improving the Performance of Archimedes Wind Turbine with Logarithmic Spiral Concept

USCA05

Greater San Diego Science and Engineering Fair

Pacific Beach Middle School

San Diego, California

Marcus Catanzaro (Grade 7)

Rock and Roll Derailment: Reducing Harmonic Oscillation in Trains

Soille San Diego Hebrew Day School

San Diego, California

Reuben Daniel Broudy (Grade 8)

Modelling Minimum Voltage to Acoustically Levitate Non-Spherical Objects at Near Wavelength Dimensions

The Cambridge School

San Diego, California

Kyle P. Tianshi (Grade 7)

A Microscopic Particle Detector Using Laser Microscopy and Image Processing

The Rhoades School

Encinitas, California

Kian S. Chakamian (Grade 8)

Predicting Implications of Olive Quick Decline Syndrome in San Diego County Olive Trees

Thurgood Marshall Middle School

San Diego, California

Agastya Sridharan (Grade 7)

A 3D Autostereoscopic Quasi-Static Volumetric Display

USCA06

Golden Gate STEM Fair

Centerville Junior High School

Fremont, California

Lucy Qianshu Gong (Grade 8)

Hydroxide-Ion Batteries: The Concept and Materials Engineering for High Capacity

Challenger School — Ardenwood

Newark, California

Ruhi Yusuf (Grade 7)

Effectiveness of Different Plants as Coagulants to Purify Contaminated Drinking Water

Fred T. Korematsu Middle

El Cerrito, California

Nora Thompson (Grade 8)*

Lights of the Sea

Stratford Middle School

Fremont, California

Justin T. Peng (Grade 7)

Piezoelectric Shoes

William Hopkins Junior High School

Fremont, California

Brian M. Li (Grade 7)

Designing and Implementing a Novel Solar Panel Tracker System Leveraging Reinforcement Learning

Emma M. Li (Grade 7)

Designing and Implementing a Novel Solar Panel Tracker System Leveraging Reinforcement Learning Technique

USCA07

Synopsys Silicon Valley Science and Technology Championship
presented by the Santa Clara Valley Science and Engineering Fair
Association

Challenger School — Berryessa

San Jose, California

Namrata Nair (Grade 8)

The Effect of Different Metal Nanoparticles on the Growth of E. coli

Challenger School — Sunnyvale

Sunnyvale, California

Diya Kadadi (Grade 7)

Bioplastics from Biowaste: Using Plant Cellulose and Starch to Create Affordable and Durable Plastic Solutions

Adhip Raghunathan (Grade 7)

Novel Electrochromic System to Regulate Internal Lighting

Jane Lathrop Stanford Middle School

Palo Alto, California

Yu-Ting Chang (Grade 8)

Greedy, Yet Intelligent, Algorithms for the Game 2048 Using Python

Julian I. Schultz (Grade 7)

Can Your Sweatshirt Save You? Is Clothing an Effective Particulate Filter Against Air Pollution?

Juan Cabrillo Middle School

Santa Clara, California

Noah Barlahan (Grade 7)

Making Hydropower More Environmentally Friendly

Ryan Pierce Co (Grade 7)

Making Hydropower More Environmentally Friendly

Jeremy Flint (Grade 7)

Making Hydropower Environmentally Friendly

Stratford Middle School — San Jose

San Jose, California

Ayush Ghosh (Grade 6)

Reducing Ocean Acidification Using Aquatic Plants

Stratford School — Sunnyvale Raynor Middle School

Sunnyvale, California

Uday Chaudhary (Grade 8)

What Is the Effect of Using Compound Wood Boards on the Overall Flammability, Durability and Strength of the Wood Boards?

Kinjal Govil (Grade 8)

What Is the Effect of Using Compound Wood Boards on the Overall Flammability, Durability, and Strength of the Wood Boards?

Sunnyvale Middle School

Sunnyvale, California

Wyndia Ohm (Grade 7)

AnomalyLabs: A Study of Claims of “Gravitational Anomaly” that Led to the Creation of the World’s Smallest Gravimeter and Many More Instruments

The Harker School

San Jose, California

Gordon Z. Chen (Grade 8)

Inhibiting Rabies at the Molecular Level

Jacob Huang (Grade 8)

Inhibiting Rabies at the Molecular Level

Reshma Kosaraju (Grade 7)

Application of Meteorological Data to Predict the Chances of a Forest Fire Using Machine Learning and Neural Networks

Nicholas Wei (Grade 8)

The Effect of the Day/Night Cycle on Plant Growth in Indoor Farming

USCA08

Contra Costa County Science and Engineering Fair

Joaquin Moraga Intermediate School

Moraga, California

Isabelle Sophia Katz (Grade 8)

Analyzing Musical Instruments/Voice Using Signal Analysis and a Novel Color-Fingerprinting Technique for Vocal Training

North Creek Academy

Walnut Creek, California

Riya Kumar (Grade 7)

Microbial Fuel Cells: A Sustainable Energy Solution from Human Waste and Other Organic Wastes

Windemere Ranch Middle School

San Ramon, California

Aayush Asthana (Grade 7)

SAMS — Smart Air-Quality Monitoring System

Harsha Pillarisetti (Grade 7)

Effect of Intelligent Watering Systems on Plant Growth and Water Consumption

USCA11

Santa Cruz County Science and Engineering Fair

Georgiana Bruce Kirby Preparatory

Santa Cruz, California

Rinoa Jacqueline Oliver (Grade 7)

Factors Affecting the California Science & Engineering Fair Results

USCA12

Monterey County Science and Engineering Fair

International School of Monterey

Seaside, California

Hannah T. Shu (Grade 8)

Using Physics and Fourier Analysis to Determine the Audio Frequencies to Evaluate Acoustics of the Violins

USCA13

San Bernardino, Inyo, Mono, (SIM) Science and Engineering Fair

Ramona Junior High School

Chino, California

William Sahagun (Grade 8)

Investigating the Inhibitory Effect of Psidium guajava Leaf Extract on Carbohydrate Digestive Enzymes

Saint Adelaide Academy

Highland, California

Seann Richard Torres (Grade 8)

An Ecosystemic Analysis on Vertebrate Coprolitic Inclusions from the White River Formation

USCA15

Riverside County Science and Engineering Fair

Frank Augustus Miller Middle School

Riverside, California

Joseph S. Dadlez (Grade 8)

Engineering an Independent Robotic Sidewalk Weed Killer Robot

Rancho Christian School

Temecula, California

Ryan Edward Drake (Grade 8)

A New Desalination Method: Comparing the Effectiveness of Non-Toxic Carboxylic Acid Directional Solvents to Reduce Salinity Levels

Riverside STEM Academy

Riverside, California

Lilia Tomoff (Grade 7)

Squeaky Green: Environmentally Friendly Exfoliating Soap

Temecula Preparatory School

Winchester, California

Charlotte Evelyn Myers (Grade 8)

Identification and Characterization of Novel Potential Antibiotics Targeting Bacterial Motility

USCA16

San Mateo County Office of Education STEM Fair

Burlingame Intermediate School

Burlingame, California

Kirin Debnath (Grade 6)

Modifying Yeast to Make Better Bread

Central Middle School

San Carlos, California

Quinn Olson (Grade 6)

Shock Absorption: Can You Feel It?

Crocker Middle School

Hillsborough, California

Alexis Tea MacAvoy (Grade 8)

Designing Efficient, Low-Cost, Eco-Friendly Activated Carbon for Removal of Heavy Metals from Water

La Entrada Middle School

Menlo Park, California

Sina Sean Kassayan (Grade 7)

Designing a Dual-Lead ECG Recording and Signal Processing for Continuous Heart Rate Detection

The Nueva School
Hillsborough, California
David Freifeld (Grade 8)
Detecting Exoplanets with Anomaly Detection

Tierra Linda Middle School
San Carlos, California
Aidan Land (Grade 7)*
Wingin' It: Evaluating Wing Lift and Drag with a Modular Model Aircraft

Wornick Jewish Day School
Foster City, California
Philippa Reading (Grade 6)
Plants vs. Greywater

USCA50

California Science & Engineering Fair

Santa Fe Christian Schools
Solana Beach, California
Melia P. Crimaldi (Grade 7)
Cooling the Urban Heat Island Effect

Stratford Middle School
Milpitas, California
Ishan Zhisheng Juluri (Grade 6)
The Effect of Tuned Mass Dampers on Oscillating Buildings

Terman Middle School
Palo Alto, California
Alan Lee (Grade 8)
Machine Learning for Distinguishing Hepatic Hemangiomas from Hepatocellular Carcinomas

The Harker School
San Jose, California
Arjun Barrett (Grade 8)
Using Machine Learning and Infrared Imagery to Detect Drunk Drivers

Rohan Tan Bhowmik (Grade 8)
Using Machine Learning and Infrared Imagery to Detect Drunk Drivers

Brian Chen (Grade 8)
Validating Novel Algorithm-Generated Crop Rotations to Combat Nutrient Depletion: A Second Year Study

Three Rivers Union Elementary
Three Rivers, California
Lucile Allen (Grade 8)
How to Build a Better Cupcake

Woodrow Wallace Middle School
Lake Isabella, California
Kasey Mckenna Lassen (Grade 8)
The Positive Effects of Arbuscular Mycorrhizal Fungi on Sodium Stressed Plants

USCA78 Irvine Unified School District Fair

Meadow Park Elementary
Irvine, California
Naim Bayraktar (Grade 6)
Battle of the Bats

Westpark Elementary School
Irvine, California
Katelyn Gan (Grade 6)
Air Pollution Estimation Based on Photo Analysis

COLORADO

USCO06 Longs Peak Science and Engineering Fair

Webber Middle School
Fort Collins, Colorado
Ava Steger (Grade 8)*
The Correlation Between Agenesis of the Corpus Callosum, and Epilepsy, and the Effectiveness of Anticonvulsant Drugs

USCO07 Arkansas Valley Regional Science Fair

Branson School
Branson, Colorado
Owen Doherty (Grade 7)
Blame It on the Rain: A Novel Use of Non-Mechanical Methods for Rangeland Soil Erosion Control

USCO09 Corden Pharma Colorado Regional Science Fair

Summit Middle Charter School
Boulder, Colorado
Henry Westfall (Grade 8)
Predicting Influenza A Antigenic Drift Using Bidirectional Sequence to Sequence Neural Networks

USCO10 Denver Metropolitan Regional Science and Engineering Fair

STEM School and Academy
Highlands Ranch, Colorado
Gitanjali Rao (Grade 8)
Early Detection of Prescription Opioid Addiction Using Mu Opioid Receptor Gene

USCO50

Colorado Science and Engineering Fair

Home School

Colorado Springs, Colorado

Hudson Foster Kruse (Grade 8)

The Influence of Drought and Frequent Wildfire on the Chaparral

CONNECTICUT

USCT50

Connecticut Science & Engineering Fair

Hamden Hall Country Day School

Hamden, Connecticut

Lorraine F. Hillgen-Santa (Grade 7)

Does Dog Saliva Kill Germs & What Else Might?

Sacred Heart School

Groton, Connecticut

Payton Noe (Grade 8)

Building a Better Hearing Aid Using Noise Cancellation

Westside Middle School Academy

Danbury, Connecticut

Ella Brown (Grade 7)

Design, Testing, and Optimization of Kombucha SCOBY-Based Biofilms

DELAWARE

USPA03

Delaware Valley Science Fairs

Newark Charter School

Newark, Delaware

Isha P. Kanchana (Grade 6)

Comparing the Antibacterial Properties of Naturally Occurring Herbal Supplements

DISTRICT OF COLUMBIA

USDC01

District of Columbia STEM Fair

Oyster Adams Bilingual School

Washington, District of Columbia

Maxwell A. Scott (Grade 6)

Effects of pH on the Spirogyra Algae Culture (Class Zygnemataceae)

Sidwell Friends School

Washington, District of Columbia

Luc Jon Beck (Grade 6)

The Inadvertent Production of a 100% Plant-Derived Fire-Extinguishing Liquid via 2nd Generation Cellulosic Biofuels

FLORIDA

- USFL01 Heartland Regional Science and Engineering Fair
Hill-Gustat Middle School
Sebring, Florida
Devam Patel (Grade 8)
Role of Sugar in Cardiovascular Disease
- USFL07 Panhandle Regional Science and Engineering Fair
Walton Middle School
DeFuniak Springs, Florida
Aaron Wilmoth (Grade 7)*
Squishy Robots: Testing Prosthetic Fingertip Gripping Strength
- USFL08 Alachua Region Science and Engineering Fair
Abraham Lincoln Middle School
Gainesville, Florida
Angela L. Gao (Grade 8)
Evaluation and Optimization of Photocatalytic Ability of Graphitic Carbon Nitride for Contaminant Removal

Akash Verma (Grade 8)*
A Novel Study to Evaluate the Possible Effects of RF Radiation on Human Brain Waves and Testing Innovative Strategies to Lower RF Levels from RF-Emitting Devices

Oak View Middle School
Gainesville, Florida
David Kenneth Cagle (Grade 8)*
Bullying: Does Information Influence Perception?
- USFL09 Broward County Science Fair
American Heritage School
Plantation, Florida
Alejandra Sarah Abramson (Grade 8)*
The Effect of Common Pesticides on Drosophila melanogaster in Comparison to Neurological Diseases, Learning Disorders, and Birth Defects in Humans

Ellaheh Gohari (Grade 7)
Obstructive Sleep Apnea and Sleep Quality: The Impact on Cardio-Metabolic Risk in Spinal Cord Injury

Crystal Lake Middle School
Pompano Beach, Florida
Khushi Desai (Grade 8)*
Evaluation of a Natural Eco-Friendly Bio-Coagulant Moringa oleifera Compared to Traditional Synthetic Chemical Coagulants for Treatment of Surface Water

USFL10	<p>Northeast Florida Regional Science and Engineering Fair</p> <p><u>James Weldon Johnson College Preparatory Middle School</u> Jacksonville, Florida Claire Marie Huang (Grade 8)* <i>The Effect of Windows on Photovoltaic Cell Efficiency</i></p>
USFL12	<p>Polk Region Science and Engineering Fair</p> <p><u>Lakeland Christian School</u> Lakeland, Florida Neil Jay Dave (Grade 8) <i>Solvents and Smoke, Feat. Invertebrate Indicators: Year II</i></p>
USFL13	<p>Brevard South Science and Engineering Fair</p> <p><u>Stone Magnet Middle School</u> Melbourne, Florida Claire King (Grade 7) <i>Determining the Effects of Sunscreen Containing Oxybenzone on the Endosymbiotic Algae in Pinked Tipped Anemone Condylactis gigantea</i></p> <p>Mehkek Niwas (Grade 7) <i>The Effects of Dimpling on the Drag Produced by an Aircraft Wing</i></p> <p>Cooper James Thomson (Grade 8) <i>Testing Boundary Layer Ingestion Engine Cowling Designs as a Method of Reducing Drag</i></p> <p><u>West Shore Junior/Senior High School</u> Melbourne, Florida Nathan Jullapatr Boonsanguan (Grade 7) <i>Dual-Axis Solar Tracker Using Arduino Uno Controller (Low Voltage 5-12V Electrical Circuit)</i></p> <p>Faith Collins (Grade 8)* <i>Using Machine Learning to Develop an Image Steganography Detection Software</i></p> <p>Madison Anne Uhlmeier (Grade 8) <i>Determining the Impact of Sterilized Oreochromis niloticus Dermis on Buxus microphylla japonica Cellular Regeneration</i></p>
USFL14	<p>Brevard Intracoastal Regional Science and Engineering Fair</p> <p><u>Herbert C. Hoover Middle School</u> Indialantic, Florida Alexander Sundry Butler (Grade 7) <i>The Effect of Various Substrates on Rhizophora mangle Propagule Growth</i></p> <p>Amelia Belle Curran (Grade 7)* <i>A Comparison of the Energy Content and Yield of Hydrilla verticillata and Lemna minor Biodiesels</i></p>

USFL15

South Florida Science and Engineering Fair

Archimedean Middle Conservatory

Miami, Florida

Emily Tsiros (Grade 6)

The Astronauts Aboard the ISS are Falling

Winston Park K-8 Center

Miami, Florida

Sophia Gabriela Carbajal (Grade 8)

Phytoremediation: The Effect of Hyperaccumulation of NiSO_4 or Cr_4SO_4 on Magnesium Content within Brassica juncea, Brassica oleracea aceophala and Brassica oleracea gongylodes

USFL23

Seminole County Regional Science, Mathematics & Engineering Fair

Sanford Middle School

Sanford, Florida

Kyra M. Henriques (Grade 8)*

Determining the Enzyme Inhibitory Effects of the Aqueous Infusion of Leaves of 5 Plants Traditionally Used in the Treatment of Diabetes Mellitus on Glucose Metabolizing Enzymes

Ishika Nag (Grade 8)*

Breathe Easy: Using Nanoparticles to Improve the Efficiency of Air Filtration Systems by Reducing Particulate Matter

Sanford Middle School

Sanford, Florida

Anouska Seal (Grade 7)*

Inhibitory Effects of Superfoods on E. coli

USFL27

Hillsborough Regional Science Fair

Carrollwood Day School

Tampa, Florida

Shloke Nirav Patel (Grade 8)*

Testing the Efficacy of Biological Control Measure in Preventing the Re-Infection of Citrus Greening Disease and Its Validation Through qPCR Technique (Year 2)

Nativity Catholic School

Brandon, Florida

Josie E. Chapuis (Grade 7)

Magnet Mania!

Williams Middle Magnet School

Tampa, Florida

Elena Alyse Glow (Grade 7)

Allelopathic Effect of Cymbopogon citratus on the Cultivation of Oryza sativa

Shrey Gupta (Grade 6)
Yeast–Feast on the “Rising” Beast

USFL28

Brevard Mainland Regional Science and Engineering Fair

Lyndon B. Johnson Middle School

Melbourne, Florida

Johan Rafeek (Grade 7)

How Does Pitch, Diameter & Number of Blades on a Drone Propeller Affect the Drones's Thrust Force

USFL29

Palm Beach Regional Science and Engineering Fair

A.D. Henderson University Lab School

Boca Raton, Florida

Vinu Sai Suthakaran (Grade 8)

How Can an ROV be Used in Order to Filter Runoff and Pollutants Out of the Ocean?

American Heritage School Boca Delray

Delray Beach, Florida

Michael Barron (Grade 6)

Optimizing Impact Absorption in Paratroopers' Footwear Using a Bio-Mimetic Design

The Weiss School

Palm Beach Gardens, Florida

Asher Blatt (Grade 6)

Companion Planting M. chamomilla and P. anisum Effects on the Growth O. basilicum

Alexa Ernce (Grade 8)*

The Effects of Excess Nutrients from Fertilizers and Pesticides on Algae Growth in Relation to the Mortality Rate of Daphnia

Paul Kiesling (Grade 6)

The Correlation Between the Characteristics of the Meteorite and the Diameter of the Crater

Russell Jay Widder (Grade 8)*

Optimization of Nitinol Hinge for Use on Lunar Rover

USFL32

Sarasota County STEM Summit

Booker Middle School

Sarasota, Florida

Augustus Francis Toynton (Grade 7)

Rotten Teeth?

USFL35	<p>Clay Rotary Regional Science and Engineering Fair</p> <p><u>Green Cove Springs Junior High School</u> Green Cove Springs, Florida Keegan William Emanuel (Grade 8) <i>Baiting Beach Mice</i></p>
USFL50	<p>State Science and Engineering Fair of Florida—Ying Scholars</p> <p><u>Carwise Middle School</u> Palm Harbor, Florida Aanya Bhandari (Grade 8) <i>Robotic Hand</i></p> <p><u>Highland Oaks Middle School</u> Miami, Florida Julia Honey Colan (Grade 7) <i>Fibonacci Solar Array Base</i></p> <p><u>Julia Landon College Preparatory and Leadership Development School</u> Jacksonville, Florida Chace Caven (Grade 8) <i>Designing Ligands as a Potential Intervention for Parkinson's Disease</i></p> <p><u>Pine Ridge Middle School</u> Naples, Florida Benno Hermans (Grade 8) <i>Additives for Maintaining Bioplastic Tensile Strength over Time</i></p>
GEORGIA	
USGA06	<p>Henry County Science and Engineering Fair</p> <p><u>Home School</u> McDonough, Georgia Jonathan Dorminy (Grade 6)* <i>Amateur Band Text Radio for Emergency Use</i></p>
USGA11	<p>Gwinnett Regional Fair</p> <p><u>Five Forks Middle School</u> Lawrenceville, Georgia Ashkan A. Jiwani (Grade 8) <i>Roads that Generate Electricity</i></p>
USGA50	<p>Georgia State Science and Engineering Fair</p> <p><u>Chapel Hill Middle School</u> Douglasville, Georgia Kennedy Sophia Rogers (Grade 8) <i>Data that Matters: Detecting Concussion Prone Impacts in Youth Sports in Real Time with Mobile Technology</i></p>

DeSana Middle School

Alpharetta, Georgia

Sedona Sky Zeller (Grade 8)

How Bioluminescent Organisms React to Varied Amounts of Light

General Ray Davis Middle School

Stockbridge, Georgia

Sarah Abdulkhader (Grade 8)

The Effects of Sorafenib on Drosophila melanogaster Generations and Danio rerio Embryos

Kennedey Dahalia Boothe (Grade 8)

The Effects of Sorafenib on Drosophila melanogaster Generations and Danio rerio Embryos

Elizabeth Goodloe (Grade 8)

The Effects of Sorafenib on Drosophila melanogaster Generations and Danio rerio Embryos

HAWAII

USHI05

Hawaii District Science and Engineering Fair

Waiakea Intermediate School

Hilo, Hawaii

Abigail Keith (Grade 6)*

Can Essential Oils or Apple Cider Vinegar Stop Pseudomonas cichorii?

USHI50

Hawaii State Science and Engineering Fair

Iao Intermediate School

Wailuku, Hawaii

Anica Jihae Ancheta (Grade 7)

Determining the Mass of the Supermassive Black Hole in the Center of NGC 1566

Washington Middle School

Honolulu, Hawaii

Nolan Haisler (Grade 8)

Acoustic Levitation

ILLINOIS

USIL01

Chicago Public Schools Student Science Fair

Edison Regional Gifted Center

Chicago, Illinois

Rishi N. Sandrana (Grade 7)

FaceBox

USIL03 Heart of Illinois Science and Engineering Fair

Dunlap Valley Middle School

Dunlap, Illinois

Nachiket Rajinikanth (Grade 8)

Mycoremediation

INDIANA

USIN26 Hoosier Science and Engineering Fair Region 7

West Lafayette Junior/Senior High School

West Lafayette, Indiana

Albert Lan Rajwa (Grade 7)

A Phone Camera Versus a Spectrometer: The Duel Between Color Sensors

IOWA

USIA50 State Science and Technology Fair of Iowa

Ames Middle School

Ames, Iowa

Adrian Guan (Grade 8)

Spiralling for Appeal

KANSAS

USKS50 Kansas State Science and Engineering Fair

Hodgeman County Elementary School

Jetmore, Kansas

Robert Clark (Grade 6)

Which Plane is More Efficient: Biplane or Monoplane?

USMO04 Greater Kansas City Science & Engineering Fair

South Middle School

Lawrence, Kansas

Thomas Henry Wallace Lushington (Grade 8)

Evaluation of Alpha and Beta Chloro Peptides for Blocking TDP-43 Fibrils

Frances Parker (Grade 8)

Designing Methyl Amide and Thiocarbonyl Peptides for ALS Treatment

KENTUCKY

USKY02 Louisville Regional Science and Engineering Fair

Saint Francis of Assisi Catholic School

Louisville, Kentucky

Mary Shea Ballantine (Grade 6)

Automotive Exhaust: Creating a Selective Environment for Bacteria

Ella Kathryn Diehl (Grade 8)
Exploring Noise Pollution Stress in Pollinators

Katie Elise Quinn (Grade 7)
Exploring the Impact of Atrazine on Childhood Learning

USKY05

Central Kentucky Regional Science and Engineering Fair

Beaumont Middle School

Lexington, Kentucky

Kiran Koul (Grade 7)

The Effect of Rennet Mediated Coagulation on Acid Based Milk Curdling

Southern Middle School

Lexington, Kentucky

Colin D. Clevenger (Grade 7)

The Psychology of Surveillance: How Feeling Watched Affects Driver Behavior

USKY50

Kentucky Science and Engineering Fair

Saint Francis of Assisi Catholic School

Louisville, Kentucky

Emerson Wyatt (Grade 6)

Sanguinaria canadensis: A Novel Cancer Treatment?

LOUISIANA

USLA02

Bossier Parish Community College Louisiana Region I Science and Engineering Fair

First Baptist Church School

Shreveport, Louisiana

William Wade Daniel (Grade 7)

The Aphid Wolf, A Cold Blooded Killer

USLA08

Greater New Orleans Science and Engineering Fair

Lake Forest Charter

New Orleans, Louisiana

Lauren U.C. Ejiaga (Grade 8)*

Ozone Depletion: How It Affects Us

USLA10

Louisiana Region VIII Science Fair

Boyet Junior High School

Slidell, Louisiana

Reilly Hamilton Fastring (Grade 8)

Determining Thixotropic and Dilatant Properties of Fluids Using a Simple Apparatus

MARYLAND

USMD03

ScienceMontgomery

Robert Frost Middle School

Rockville, Maryland

Dennis Oleg Chunikhin (Grade 8)

Navigation of an Interstellar Probe and Analysis of Its Visual Data

Roberto Clemente Middle School

Germantown, Maryland

Ishaan Jain (Grade 8)

A Novel Prediction System to Detect Wildfire Prone Areas: Unique Node-to-Node Fire Locating Algorithms with Machine-Learning Equipment (UNFLAME)

Anjan Sesetty (Grade 8)

A Novel Prediction System to Detect Wildfire Prone Areas: Unique Node-to-Node Fire Locating Algorithm With Machine-Learning Equipment (UNFLAME)

Takoma Park Middle School

Silver Spring, Maryland

Anuprova Bhowmik (Grade 8)

Rewards and Motivation

USMD05

Prince George's Area Science Fair

Spring Ridge Middle School

Lexington Park, Maryland

Tyler David Ludlow (Grade 8)

Don't Be S.A.D., Change Your View

MASSACHUSETTS

USMA02

Massachusetts Region IV Science Fair

Andover School of Montessori

Andover, Massachusetts

Anna Du (Grade 7)

Investigating a Marine Learning Based ROV to Identify Aggregation of Marine Microplastics

USMA04

Massachusetts Region I Science Fair

Hopkins Academy

Hadley, Massachusetts

Jayce Josephine Lanzafame (Grade 7)*

The Improved Medical Intravenous System

USMA05

Massachusetts Region II State Science Fair

Millbury Memorial Junior/Senior High School

Millbury, Massachusetts

Emma Flaherty (Grade 7)

Effect of Toxic Ash on Radish Plant Growth

USMA50

Massachusetts State Science & Engineering Fair

Ashland Middle School

Ashland, Massachusetts

Ragav Iyer (Grade 6)

Electro Magnetic Pod for Removing Orbiting Debris

Anagha Kulkarni (Grade 6)

Electro Magnetic Pod for Removing Orbiting Debris

Anish Kulkarni (Grade 6)

Electro Magnetic Pod for Removing Orbiting Debris

Bancroft School

Worcester, Massachusetts

Aryan Mago (Grade 7)

I've Got that Sinking Feeling

Jonas Clark Middle School

Lexington, Massachusetts

Vikram Anantha (Grade 7)

*MACC — Automated Communication Companion —
A Wearable Training System*

Littleton Middle School

Littleton, Massachusetts

Brandon S. LaVoie (Grade 8)

Air Ride

Newton Country Day School of the Sacred Heart

Newton, Massachusetts

Sarah Wingyee Chow (Grade 8)

Back on Track

Julia Cressotti (Grade 8)

Back on Track

Delaney Maeve Woolbert (Grade 8)

Back on Track

Saint Bernadette School

Northborough, Massachusetts

Anusha Prabhakar (Grade 8)

*An Algorithm Using Automated Analysis of Voice Features to Predict
Bipolar Attacks*

MICHIGAN

USMI02 Science and Engineering Fair of Metropolitan Detroit

Smith Middle School

Troy, Michigan

Deepti Aggarwal (Grade 8)

The Role of Environmental Conditions on the Drying of Paint

Riya Dutta (Grade 8)

The Role of Environmental Conditions on the Drying of Paint

USMI03 Flint Regional Science Fair

Marshall Greene Middle School

Birch Run, Michigan

Elena Wells (Grade 7)

Plants vs. Humans: A Study of Gel Electrophoresis in a Home Laboratory

Saginaw Arts and Sciences Academy

Saginaw, Michigan

Jett Andrew Miller (Grade 7)

Dispersion of Oil from a Broken Pipeline

MINNESOTA

USMN50 Minnesota Academy of Science State Science & Engineering Fair

Park Christian School

Moorhead, Minnesota

Evan Knoll (Grade 8)

Don't Be So Salty: The Remediation of Brine Contaminated Soils Through the Use of Phytoremediation

MISSISSIPPI

USMS06 Mississippi Region V Science and Engineering Fair

Armstrong Middle School

Starkville, Mississippi

Vivek M. Nagarajan (Grade 8)

Electrical Flashover and Safety Clearances

USMS07 Mississippi Region VII Science and Engineering Fair

Oxford Middle School

Oxford, Mississippi

Keerthin Karthikeyan (Grade 8)

STYRO-CARBON: An Effective Approach to Recycle Styrofoam

MONTANA

USMT01

MSU Billings Science Expo

Home School

Hardin, Montana

Toby Jacob Mark (Grade 7)

Cellphone Chemistry: Designing and Building a Simple Cellphone Spectrophotometer

USMT04

Montana Region II Science and Engineering Fair

Simms Middle School

Simms, Montana

Baylee Herman (Grade 8)*

Water Logger

NEW JERSEY

USNJ03

Mercer Science and Engineering Fair

Timberlane Middle School

Pennnington, New Jersey

Charlotte Lenore Simon Michaluk (Grade 7)

Saving Sinking Ships: Mitigating the Risk of Bulk Cargo Liquefaction

Lucas Zapata-Sanin (Grade 7)

Developing and Testing a Color Identification System for People who Have Difficulty Identifying Colors

USNJ79

Bergen County Academy Science Challenge

River Dell Middle School

River Edge, New Jersey

Matthew Schmid (Grade 7)

Plants on the Move

Tenaflly Middle School

Tenaflly, New Jersey

Divyash Shah (Grade 8)

Modeling the Effects of Acid Rain on Bacterial Growth

Transfiguration Academy

Bergenfield, New Jersey

Cynthia Jacob (Grade 8)

A Novel Method of Farming: Regulating Agricultural Yield During Drought with the Utilization of Mulch, Citrus Peels, Avocado Skins, and Chicken Manure

NEW MEXICO

- USNM01 Central New Mexico Regional Science and Engineering Challenge
School of Dreams Academy
Los Lunas, New Mexico
Gianna G. Nilvo (Grade 7)*
The Digestion of Cat Food – Digestive Enzymes or Not?
- USNM04 Southwestern New Mexico Regional Science and Engineering Fair
Sierra Middle School
Las Cruces, New Mexico
Ksenia Lubov Sevostianov (Grade 8)
Albumin for Drug Delivery: The Goo, the Bad, or the Ugly?
- USNM50 New Mexico Science and Engineering Fair
Tibbetts Middle School
Farmington, New Mexico
Claire Joella McDaniel (Grade 6)
Can It be a Solar Panel? Phase II
- ## NEW YORK
- USNY02 Long Island Science and Engineering Fair
Grand Avenue Middle School
Bellmore, New York
Tyler L. Bissoondial (Grade 8)
Identification and Characterization of Salt-Tolerant (stl) Mutants in Raphanus sativus

Adhith Isaac Jacob (Grade 8)
Is it Possible to Create a More Functional Smartwatch?

Dillon Moi (Grade 8)
Is it Possible to Create a More Functional Smartwatch?
- USNY05 Regeneron – Westchester Science and Engineering Fair
Edgemont Jr/Sr High School
Scarsdale, New York
Skandan Gurumurthy (Grade 8)
Statistical Image Analysis for Differentiating Glioblastoma Cells

USNY07 Greater Capital Region Science and Engineering Fair, Inc.

Iroquois Middle School

Niskayuna, New York

Arin Mukesh Khare (Grade 7)

Beats in Bytes – A Statistical Analysis of Melodic Properties

James Lian (Grade 7)

Beats in Bytes – A Statistical Analysis of Melodic Properties

Kai Vernooy (Grade 7)

Beats in Bytes – A Statistical Analysis of Melodic Properties

USNY78 Hunter College High School Science and Engineering Fair

Hunter College High School

New York, New York

Elizabeth Chasen (Grade 8)

Different Kites... Different Flight?

Finley McElhinney (Grade 8)

Optimizing Sunscreen

Logan Reich (Grade 7)

Assessing the Efficacy of Low-Cost Water Purification Methods by Comparing Contaminant Levels with Emphasis on Sustainable Biodynamic Cleaning

NORTH CAROLINA

USNC02 North Carolina Central Region III Science Fair

Cary Classical Arts and Sciences Academy

Cary, North Carolina

Emma Frances Lamb (Grade 7)

Duckweed Isn't Just for Ducks: Using Lemnoideae to Remediate Agricultural Pollution

USNC50 North Carolina State Science Fair

Hope Middle School

Greenville, North Carolina

Jiah Lee (Grade 6)

Do You Want to Live Longer? ... Don't Smell!: The Effects of an Environmental Chemical on Male Behavior and Their Lifespan

OHIO

USOH01 Southeastern Ohio Regional Science and Engineering Fair

West Elementary School

Athens, Ohio

Lizzie Castelino (Grade 6)

Hang Up on Radiation

USOH02	Northeastern Ohio Science and Engineering Fair
	<u>Birchwood School</u> Cleveland, Ohio John Ho Shin (Grade 8) <i>Water Filtration Using Graphene Nanotechnology</i>
	<u>Home School</u> Akron, Ohio David Anand (Grade 8) <i>Monitoring Water Quality of the Yellow Creek Watershed Using Macro-Invertebrate Sampling and Automated Continuous Testing with a DIY Microcontroller for Physical and Chemical Measurements</i>
	<u>Saint Mary of the Falls</u> Olmsted Falls, Ohio Carmela Mary DiLisi (Grade 8) <i>The Flammability of Fabrics Used in Spacecrafts: A Case Study of the Apollo 1 Fire</i>
	<u>Saint Paschal Baylon School</u> Highland Heights, Ohio Eleanor Patricia Fleming (Grade 8) <i>How Does Increasing the Strength of an Electromagnetic Field Affect the Vitality of Blue-Green Algae as Measured Through Observation of Cell Condition, Growth, Saturation %, pH, and Dissolved Oxygen Levels?</i>
USOH04	Montgomery County Science and Engineering Fair
	<u>Rushmore Elementary School</u> Dayton, Ohio Catherine Nicole Zbinden (Grade 6) <i>Salt Inhibits the Growth of E. coli</i>
USOH10	University of Cincinnati Science and Engineering EXPO
	<u>All Saints School</u> Cincinnati, Ohio Tom Crone (Grade 7) <i>Do Mushroom "Roots" Make Paper Stronger?</i>
USOH51	State Science Day
	<u>Incarnation Catholic School</u> Centerville, Ohio Diya C. Percy (Grade 7) <i>How Does pH Affect Vibrancy of Color on Natural and Synthetic Dyes?</i>
	<u>Mason Middle School</u> Mason, Ohio Johan DeMessie (Grade 8) <i>Salt-Stain Effect for a Rapid, Low-Cost Analysis of Drinking Water</i>

Saint Albert the Great Elementary

North Royalton, Ohio

Robert Thomas Boyce (Grade 8)

Sugar Crash — Sucrose Consumption and Spatial Memory in Mice

Saint Columban School

Loveland, Ohio

Regan Sharp (Grade 8)

The Impact of Inflammation on Joint Range of Motion

OKLAHOMA

USOK04

Northeastern Oklahoma A&M Science and Engineering Fair

Grove Middle School

Grove, Oklahoma

Laci Don Goldner (Grade 8)*

Dye-ing to Grow

OREGON

USOR04

Beaverton-Hillsboro Science Expo

Cedar Park Middle School

Portland, Oregon

Nikita Istratov (Grade 7)*

Developing the Highest Efficiency Fan Propeller

Meadow Park Middle School

Beaverton, Oregon

Srinidhi Gubba (Grade 8)

The Effects of Natural Antioxidants on the Oxidation of Bacteria

Stoller Middle School

Portland, Oregon

Autri A. Das (Grade 6)

Electrochemical Reduction of Carbon Dioxide with Microwave Treated Electrocatalyst

Rishab Kumar Jain (Grade 8)*

The Pancreas Detective: A Novel Artificial-Intelligence-Based Post-Biopsy Tool to Screen Genetic Mutations Towards Personalizing Pancreatic Cancer Treatment

USOR50

Intel Northwest Science Expo

J.W. Poynter Middle School

Hillsboro, Oregon

Vladie Mamchik (Grade 8)

What Color Is This? — Developing a Wavelength Shifting Material to Aid the Colorblind

Lakeridge Junior High School
Lake Oswego, Oregon
Trinidad Asuncion Marin Quiros (Grade 8)
Water Heating System Reimagined

Meadow Park Middle School
Beaverton, Oregon
Ekansh Mittal (Grade 7)
Approaches to Identify Novel Combinations of Natural Medicine to Treat Bacterial Infections

Avni Sharma (Grade 8)
ANOVA (Analysis of Variance) to Identify Factors Influencing Solar Panel Performance

Whitford Middle School
Beaverton, Oregon
Shannon Raloff (Grade 8)
The Effects of Freshwater Nutrient Pollution on D. magna

PENNSYLVANIA

USPA01 Capital Area Science and Engineering Fair

Hershey Middle School
Hershey, Pennsylvania
Jason Gregory Weller
Do Energy Drinks Affect Planarian Regeneration?

USPA03 Delaware Valley Science Fairs

Avon Grove Charter School
West Grove, Pennsylvania
Alaina Gassler (Grade 8)
Improving Automobile Safety by Removing Blind Spots

Charles F. Patton Middle School
Kennett Square, Pennsylvania
Varoon Joshi (Grade 6)
Correlating Birth Order to Parent Perceptions of Various Child Qualities

Home School
Harleysville, Pennsylvania
Rachel Bergey (Grade 8)
Spotted Lanternflies: Stick'em or Trick'em?

Newtown Middle School
Newtown, Pennsylvania
Nathaniel James Schwenker (Grade 8)
How Does the Shape of a Bottle Rocket Nozzle Affect its Efficiency

Pennbrook Middle School

North Wales, Pennsylvania

Vrishti Yadav (Grade 8)

Motor Assisted Stabilizing Arm Brace for Parkinson's Patients

Penndale Middle School

Lansdale, Pennsylvania

Anirudh Reddy Akula (Grade 7)

Picky Planaria: Effects of Drug Substances on Planarian Behavior and Regeneration

Saint Teresa of Calcutta Education Center

Schwenksville, Pennsylvania

Devyn K. Stek (Grade 8)

Monthly Toxocara Contamination Levels in Montgomery County, PA: An Examination of Seasonality

Springhouse Middle School

Allentown, Pennsylvania

Reva Gandhi (Grade 8)

Saving the People and Planet: Increasing Shelf Life & Reducing Plastic Waste

Tamanend Middle School

Warrington, Pennsylvania

Klement C. Swartz (Grade 8)

The Effects of Tannin Seed Coating on Germination

USPA04

Covestro Pittsburgh Regional Science & Engineering Fair

Aquinas Academy of Pittsburgh

Gibsonia, Pennsylvania

Liam Jack Ellis (Grade 8)

The Bacteria Among Us: Do Bathrooms Have More Germs than Other Surfaces in a School?

Community Day School

Pittsburgh, Pennsylvania

Samuel Tarr (Grade 6)

Does a Computer Simulation of the Monty Hall Problem Verify and Teach the Correct Probabilities?

Dorseyville Middle School

Pittsburgh, Pennsylvania

Arvind Seshan (Grade 8)

Saving Fossil Fuels: Analyzing OBD-II Collected Telemetry Data to Optimize Fuel Efficiency

Ingomar Middle School

Pittsburgh, Pennsylvania

Rohan Sanikommu Reddy (Grade 8)

Pitch Changes While Speaking

Anshul Shah (Grade 8)
Pitch Changes While Speaking

Yuvan Suresh (Grade 8)
Don't Fill the Landfill

Our Lady of the Most Blessed Sacrament School
Natrona Heights, Pennsylvania
Kathryn J. Huth (Grade 8)
Solar Activity and Geomagnetism

SOUTH CAROLINA

USSC02 Sea Island Regional Science Fair

Lady's Island Middle School
Beaufort, South Carolina
Nathan Tran (Grade 7)
What Type of Plastic Do Mealworms Consume the Most of?

TENNESSEE

USTN05 Memphis-Shelby County Science and Engineering Fair

Pleasant View School
Memphis, Tennessee
Aribah Morshed (Grade 7)
Voice Controlled Self-Driving Car Using Arduino

TEXAS

USTX01 Real Bank Dallas Regional Science and Engineering Fair

Ereckson Middle School
Allen, Texas
Veda Kutagula (Grade 8)
Predicting Cognitive Decline

Lawler Middle School
Frisco, Texas
Athul Mohanram (Grade 8)*
Designer Dosage: A Luxury or a Necessity?

Otto Middle School
Plano, Texas
Otto Beall (Grade 8)*
An Affordable Braille Embosser II

Renner Middle School
Plano, Texas
Winston Kiel Gruver (Grade 8)*
Life Through a Tinted Glass

Rice Middle School

Plano, Texas

Adil Husain (Grade 8)

iSight: Artificial Intelligence Brings Vision to the Visually Impaired

Kevin Sun (Grade 8)

Effect of Engineering Nanoparticles on the Uptake and Accumulation of Arsenic in Rice

Schimelpfenig Middle School

Plano, Texas

Patrick Lu (Grade 8)

Mission Impossible — How a Computer with No Network Connections Can Have Its Data Stolen Using Light, Sound, Temperature, and Other Variables

USTX02

Sun Country Science Fair

Loretto Academy Middle School

El Paso, Texas

Allison Lucia Gaumer (Grade 7)

Vitamin C vs. Breast Cancer

Taylor Kristine Ramirez (Grade 7)

Vitamin C vs. Breast Cancer

USTX05

Science Engineering Fair of Houston

Friendswood Junior High

Friendswood, Texas

Ganesh Venu (Grade 8)*

Can Potassium Help Save Water in Rice Production?

League City Intermediate

League City, Texas

Emily Kathleen Troutman (Grade 8)*

Optimizing Crowd Emergency Evacuation Response Time Using Pedestrian Evacuation Dynamics, Monte Carlo Simulation, and Nash Equilibrium Theory

Peet Junior High School

Conroe, Texas

Hailey Jeter (Grade 7)

The Helping Bot

Sartartia Middle School

Sugar Land, Texas

Ved Xi Ganesh (Grade 8)

Breaking Down the Breakwaters

USTX06	<p>East Texas Regional Science Fair</p> <p><u>Gilmer Intermediate School</u> Gilmer, Texas Madison Nicole Perkins (Grade 8) <i>Stayin' Alive</i></p>
USTX09	<p>Permian Basin Regional Science Fair</p> <p><u>Home School</u> San Angelo, Texas Michael Crawford Trees (Grade 8) <i>Exhausted: Reducing Carbon Monoxide from Vehicle Emissions</i></p>
USTX11	<p>Alamo Regional Science and Engineering Fair</p> <p><u>BASIS San Antonio Shavano Campus</u> Castle Hills, Texas Hannah Guan (Grade 8) <i>Genetic Prediction of Biological Age: Exploring the Relationship Between Epigenetic Markers and All-Cause Mortality</i></p> <p><u>NEISD STEM Academy at Nimitz Middle School</u> San Antonio, Texas Emmett D. Decker (Grade 8)* <i>SASSI – Shooter Alarm School System Intervention</i></p> <p><u>Rudder Middle School</u> San Antonio, Texas Sharanya Ramaswamy Sharma (Grade 8) <i>Comparing the Efficacy of Natural Cleaning Solutions with Commercially Available Cleaning Solutions</i></p> <p><u>Saint Matthew Catholic School</u> San Antonio, Texas Paula Reilly (Grade 8)* <i>The Role of Melatonin and Omega-3 in Cognitive and Functional Healing after Post-Traumatic Brain Injury</i></p> <p><u>The Honor Roll School</u> Sugar Land, Texas Aaditya Krishna Arun (Grade 8) <i>Dip-Dip-Dip! Water Is Ready to Drink</i></p> <p><u>Young Women's Leadership Academy</u> San Antonio, Texas Alinne Romero-Torres (Grade 8) <i>Learning from Red Tide: An Exploration of Harmful Algal Blooms and Climate Change Using Gymnodinium sp.</i></p> <p>Brenda Romero-Torres (Grade 8) <i>Rhizobia on Clovers: Exploring The Effects of Synthetic Fertilizer and Rhizobia on Crimson Clovers (Trifolium incarnatum)</i></p>

Campbell Taylor (Grade 8)

Effects of Parental Voting on Young Women's Intention to Vote

USTX13

Austin Energy Regional Science Festival

Florence Stiles Middle School

Leander, Texas

Gabriel David Neibauer (Grade 7)

The Degradation of Saccharomyces cerevisiae Morphology by Impending the Metabolic Pathways

West Ridge Middle School

Austin, Texas

Adelle Jia Xin Yong (Grade 8)

Smart Mobile Labs — A Low Cost Microscope and Diagnostic Tool which Implements Machine Learning on a Phone

USTX50

Texas Science and Engineering Fair

Canyon Vista Middle School

Austin, Texas

Armaan Verma Srereddy (Grade 8)

Designing and Building a Shoe Insert that Uses Piezoelectric Generators to Produce Electricity from Walking

China Spring Middle School

Waco, Texas

Timmy Lee Reid (Grade 7)

Using Alternative Energy Sources to Power Medical Devices

Keystone School

San Antonio, Texas

Alexandria Evelina Flynn (Grade 8)

The Effect of Arginine-Glycine-Aspartic Acid on the Cell Proliferation of Saccharomyces cerevisiae

UTAH

USUT02

Southern Utah Science and Engineering Fair

Mont Harmon Middle School

Price, Utah

Cheyenne Slaughter (Grade 8)

Dish Soap and Our Environment

USUT04

Central Utah STEM Fair

Challenger School — Traverse Mountain

Lehi, Utah

Kunal Kamtekar (Grade 8)

The Effect of Mining and Quarrying on the Amount of Hazardous Materials Found in Soil and Water

Cherry Hill Elementary School
Orem, Utah
Annie Elizabeth Dowse (Grade 6)
The Transfer of Toxic Elements from Feed to Horse

Edgemont Elementary
Provo, Utah
Jonathan Choate (Grade 6)
Stop Thief! Engineering an Anti-Theft Package Dock

USUT05

University of Utah Science and Engineering Fair

American Preparatory Academy Draper 2
Draper, Utah
Alli Sorenson (Grade 6)
The U.S. Citizenship Test: Can You Pass?

Beehive Science & Technology Academy
Sandy, Utah
Sidor Clare (Grade 7)
Bound and Bricked

Kassie Holt (Grade 7)
Bound and Bricked

Hawthorne Elementary
Salt Lake City, Utah
Yaniv Taussky (Grade 6)
Serve Velocity and String Tension in Tennis

Olympus Junior High School
Salt Lake City, Utah
Dallin Soukup (Grade 7)
Shoot for the Moon: Calculating Distance Using Parallax, Electromagnetic Radiation and Lunar Eclipse

Rowland Hall Middle School
Salt Lake City, Utah
Evan Skyler Weinstein (Grade 6)
Red Light Green Light

Saint Joseph Catholic Middle School
Ogden, Utah
Mercedes Randhahn (Grade 8)
Opioid-Like Deactivation

Salt Lake Center for Science Education
Salt Lake, Utah
Lukas Mesicek (Grade 8)
The N-Body Problem: Simulating Space with Computers

West High School
Salt Lake City, Utah
Marianne Liu (Grade 8)
The Effects of Sunscreen on Marine Life

USUT07 Harold W. & Helen M. Ritchey Science and Engineering
Fair of Utah

Mountain Logan Middle School
Logan, Utah
Angela Zhan (Grade 6)
Creating Colorful and Health-Benefiting Bioplastics

VIRGINIA

USVA01 Northern Virginia Science and Engineering Fair

Thomas Jefferson Middle School
Arlington, Virginia
Raphael Alejandro Sanchez (Grade 8)
The Effect of Tuned Mass Dampers on Buildings Affected by Vortex Shedding

USVA06 Prince William-Manassas Regional Science Fair

Louise A. Benton Middle School
Manassas, Virginia
Tony Ethan Bright (Grade 8)
*To Breathe or Not to Breathe: Can Face Masks Diminish
Inhaled Pollution and Increase Health Outcomes of Drosophila melanogaster*

Arman Lateef (Grade 8)
*To Breathe or Not to Breathe: Can Face Masks Diminish
Inhaled Pollution and Increase Health Outcomes of Drosophila melanogaster*

USVA11 Metro Richmond STEM Fair

George H. Moody Middle School
Henrico, Virginia
Tamas Peter Gal (Grade 7)
*The Effect of Water Quality on the Percent Loss of Daphnia magna Colony in
an Urban Environment*

Nitya Kumar (Grade 7)
*The Effect of the Vaping Liquid Nicotine (used in E-cigarettes) on the Heart
Rate of the Daphnia magna*

WASHINGTON

- USWA01 Mid-Columbia Regional Science and Engineering Fair

 Leona Marshall Libby Middle School
 West Richland, Washington
 Navaj Nune (Grade 6)*
 Break it Down: The Solution to Plastic Problem
- USWA02 South Sound Regional Science and Engineering Fair

 Jefferson Middle School
 Olympia, Washington
 Nidhi Krishna Kumar (Grade 8)*
 Curae: A Smart Farming Greenhouse Monitoring System
- USWA50 Washington State Science and Engineering Fair

 Explorer Middle School
 Everett, Washington
 Angad Singh (Grade 6)
 Bioassay of Valerian, Ashwagandha, and Ginkgo as Alternate Tachycardia Medicines

WYOMING

- USWY50 Wyoming State Science Fair

 Lander Middle School
 Lander, Wyoming
 Shayla Babits (Grade 8)
 Stick or Slip: The Truth Behind Climbing Shoe Rubber



About Broadcom Foundation

Founded in April 2009, the Broadcom Foundation is a 501(c)(3) nonprofit with the mission of advancing science, technology, engineering and math (STEM) education by funding research, recognizing scholarship and increasing opportunity.

The foundation inspires young people to pursue careers in STEM and to develop 21st Century skills of critical thinking, collaboration, communication and creativity. It is a founding member of the National STEM Funders Network and plays a leadership role in the STEM Education Ecosystem Initiative in the U.S. and Israel.

The foundation's signature programs, the Broadcom MASTERS® and the Broadcom MASTERS® International, are the premier science and engineering competitions for middle school students around the United States and the world.

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