

*Congratulations*  
TO OUR

**SACRAMENTO REGIONAL  
STEM FAIR 2019**



SCIENCE



TECHNOLOGY



ENGINEERING



MATH

**WINNERS**

# SPECIAL AWARDS

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## AMERICAN METEOROLOGICAL SOCIETY

Samyak Surti

*Cellular Automata-Based Mathematical Model for the Spread of Forest Fires*

Vista Del Lago High School

## AMERICAN PSYCHOLOGICAL ASSOCIATION

Rhitishah Yuva Raju

*The Reduction of Stress: A Novel Digital Intervention Method Utilizing Neural Oscillation Analysis and Scanning Techniques*

Mira Loma High School

## ASM MATERIALS EDUCATION FOUNDATION

Jacqueline Prawira

*Ocean.Bioplas: The Plasticity of Marine Exoskeleton-Inspired Materials and the Degradability in the Environment*

Mountain House High School

## ASSOCIATION FOR WOMEN GEOSCIENTISTS

Easha Narayan, Diya Iyer, Avanti Ramraj

*Organic Filter Bags*

Granite Bay and Folsom High Schools

# SPECIAL AWARDS

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## AIR RESOURCES BOARD

### High School

Ruocheng Ma, Kevin Barnes  
*Lighting Design for CDR's Rebirth Hall*  
The City of Dharma Realm

Ashlyn Roice, Alicia Roice

*Trash to Treasure: Production of Biofuel from Agricultural waste by Enzymatic saccharification and Fermentation by Saccharomyces cerevisiae using an Arduino based ethanol sensor*  
Mountain House High School

### Middle School

Sachit Murthy, Adarsh Krishnamurthy, Hrishikesh Deshpande  
*Fires Near You - California*  
Sutter Middle School (Folsom)

Kaila Sheriff

*Does the length of exercise affect the amount of carbon dioxide output*

E.V. Cain STEM Charter Middle School

Amelia Totten

*Does air pollution affect ocean life?*  
Our Lady of the Assumption Middle School

# SPECIAL AWARDS

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## AIR RESOURCES BOARD

### **Middle School**

Abhiram Mogali

*Development of Wildfire Detection and Alerting System*

Sutter Middle School (Folsom)

Aryah Hubbard

*From Trash to Gas*

Our Lady of the Assumption Middle School

## CALIFORNIA ASSOCIATION OF PROFESSIONAL SCIENTISTS

Jacqueline Prawira

*Ocean.Bioplas: The Plasticity of Marine Exoskeleton-Inspired  
Materials and the Degradability in the Environment*

Mountain House High School

## DEPARTMENT OF WATER RESOURCES

### **High School**

Nathan Smith

*Aqua Drone: A Novel Approach to Water Testing: An Autonomous  
Drone for Measuring Water Quality in Hazardous Remote Locations*

Christian Brothers High School

### **Middle School**

Anthony Wong, Katelyn Wong

*How Moist Is Your Soil?*

California Middle School

# SPECIAL AWARDS

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## EXPLORER AWARD

Joanna Ojeda

*Does the Color of a Drink Influence the Perception of it's Sweetness?*

E.V. Cain STEM Charter Middle School

## GENIUS OLYMPIAD

Nathan Smith

*Aqua Drone: A Novel Approach to Water Testing: An Autonomous Drone for Measuring Water Quality in Hazardous Remote Locations*

Christian Brothers High School

## INTEL COMPUTER SCIENCE AWARD

Lucile Zhu

*A Novel Artificial Intelligence Method to Detect Allergens in Daily Necessities*

Mission San Jose High School

## MU ALPHA THETA NATIONAL MATHEMATICS HONORS SOCIETY

Snehaa Ganesh

*Investigation of TESS ID 425997655: A possible Habitable Planet System*

Vista Del Lago High School

# SPECIAL AWARDS

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## NASA

Shreya Ramachandran

*Water Recycling: The Effect of Soap Nut Grey Water on the Environment (Soil Microbiome - Year 4)*

American High School

## NOAA

Shreya Ramachandran

*Water Recycling: The Effect of Soap Nut Grey Water on the Environment (Soil Microbiome - Year 4)*

American High School

## NORTHERN CA SOCIETY OF TOXICOLOGY

### High School

Chinmayi Balusu

*Can the Longevity Compound Rapamycin Rescue Brain Tissue in Age-Related Diseases in Old Mice?*

Vista Del Lago High School

### Honorable Mention

Albert Qin

*A Novel Convolutional Neural Network Based Approach to Bacteria Identification*

Mira Loma High School

# SPECIAL AWARDS

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## NORTHERN CA SOCIETY OF TOXICOLOGY

### High School

#### Honorable Mention

Maria Fletes, Hemani Patel

*What preservatives are most effective in slowing down food spoilage?*

River City High School

Marissa Ramey, Katelynn Prater

*Traditional Medicine vs. Herbal Medicine: Which is better at relieving headache symptoms?*

River City High School

### Middle School

Ethan Wu, Marco Huang

*What do you get when you combine natural antibiotic agents together to fight off common germs?*

Zehnder Ranch School and Elizabeth Pinkerton Middle School

#### Honorable Mention

MacIntosh Kistner

*How Do Different Dilutions of Disinfectants Affect the Growth of Bacterial Resistants?*

E.V. Cain STEM Charter Middle School

# SPECIAL AWARDS

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## OFFICE OF NAVAL RESEARCH

### High School

Nathan Smith

*Aqua Drone: A Novel Approach to Water Testing: An Autonomous Drone for Measuring Water Quality in Hazardous Remote Locations*

Christian Brothers High School

Yahvin Gali

*Rethinking Braille with Pi Reader - Raspberry Pi based Optical Reader for the Blind and Visually Impaired*

California Connections Academy at Ripon

Srinidhi Chandrasekaran

*Understanding Early Diagnosis of Parkinson's Disease Through Support Vector Machine Modeling*

Granite Bay High School

### Middle School

Rishabh Ambavanekar

*Laser Communication*

Folsom Middle School

Sydney McCaughna

*Lifting Spirits - Which Wing Shape Generates the Most Lift?*

E.V. Cain STEM Charter Middle School



# SPECIAL AWARDS

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## OFFICE OF NAVAL RESEARCH

### Middle School

Roxy Olivia Luster

*Fog, Fog, on the wall what color shines brightest through fog*

E.V. Cain STEM Charter Middle School

## PROFESSIONAL ENGINEERS IN CALIFORNIA GOVERNMENT

Guadalupe Bernal

*Robotic Platform for Artificial Intelligence Development*

Folsom High School

## RICOH AWARD

Jacqueline Prawira

*Ocean.Bioplas: The Plasticity of Marine Exoskeleton-Inspired*

*Materials and their Degradability in the Environment*

Mountain House High School

## SOCIETY FOR SCIENCE & THE PUBLIC - LEMELSON EARLY INVENTOR PRIZE

Jordan Prawira

*Spira Mirabilis: Improving the Performance of Archimedes Wind*

*Turbine with Logarithmic Spiral Concept*

Altamont Elementary School

# **SPECIAL AWARDS**

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## **SOCIETY FOR SCIENCE & THE PUBLIC AWARD FOR COMMUNITY INNOVATION**

Shay Nair Sharma

*The Impact of a Skin Care and Skin Cancer Prevention Lesson on the  
Knowledge and Behaviors of High School Students*

Franklin High School

## **SOCIETY FOR IN VITRO BIOLOGY**

Chinmayi Balusu

*Can the Longevity Compound Rapamycin Rescue Brain Tissue in Age-  
Related Diseases in Old Mice?*

Vista Del Lago High School

## **SMUD**

**High School**

Selena Wong, Estella Wong, Parth Purankar

*Autonomous Lawn Watering Robot*

Vista Del Lago High School

**Middle School**

Aryah Hubbard

*From Trash to Gas*

Our Lady of the Assumption Middle School

# SPECIAL AWARDS

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## STOCKHOLM JUNIOR WATER PRIZE

Shreya Ramachandran

*Water Recycling: The Effect of Soap Nut Grey Water on the Environment (Soil Microbiome - Year 4)*

American High School

Selena Wong, Estella Wong, Parth Purankar

*Autonomous Lawn Watering Robot*

Vista Del Lago High School

Avanti Ramraj, Diya Iyer, Easha Narayan

*Organic Filter Bags*

Granite Bay and Folsom High Schools

## US AIR FORCE

**High School**

Samyak Surti

*Cellular Automata-Based Mathematical Model for the Spread of Forest Fires*

Vista Del Lago High School

Tirth Surti

*Galaxy Morphological Classification Through Machine Learning*

Granite Bay High School

# SPECIAL AWARDS

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## US AIR FORCE

### High School

Snehaa Ganesh

*Investigation of TESS ID 425997655: A possible Habitable Planet System*

Vista Del Lago High School

### Middle School

Rishabh Ambavanekar

*Laser Communication*

Folsom Middle School

## US METRIC ASSOCIATION

Shreya Ramachandran

*Water Recycling: The Effect of Soap Nut Grey Water on the Environment (Soil Microbiome - Year 4)*

American High School

## YALE SCIENCE & ENGINEERING ASSOCIATION

Samyak Surti

*Cellular Automata-Based Mathematical Model for the Spread of Forest Fires*

Vista Del Lago High School

# SPECIAL AWARDS

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*Congratulations again to All our winners!*

All participating students developed **OUTSTANDING** projects for our judges to view.

**You have ALL accomplished so much. We hope to see you ALL in 2020!**

Northern California



Education Foundation  
Science • Technology • Engineering • Math