

Congratulations
TO OUR

**SACRAMENTO REGIONAL
STEM FAIR 2019**



SCIENCE



TECHNOLOGY



ENGINEERING



MATH

WINNERS

GRAND PRIZE WINNERS

Third Place

Shreya Ramachandran

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

American High School

Second Place

Jacqueline Prawira

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

Mountain House High School

First Place

Chinmayi Balusu

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

Vista Del Lago High School

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

CATEGORY WINNERS

APPLIED ENGINEERING

Middle School Honorable Mention

Hayden McGowan, Kimberly Thai, Anishka Venkatesh
Resistance Against Disasters
Folsom Middle School

Maddox Mellor, Ayden Gregory, Zakai Bautista
Solar Assisted Car
W.E. Mitchell Middle School

Fifth Place

Grace Hanson
Testing Wind Barriers with Building Designs
Sutter Middle School (Downtown)

Fourth Place

Graham Carnahan
How do rockets fly by the shape it is shaped?
E.V. Cain STEM Charter Middle School

Third Place

Rishabh Ambavanekar
Laser Communication
Folsom Middle School

CATEGORY WINNERS

APPLIED ENGINEERING

Middle School **Second Place**

Eric Teng

Smart Sprinkler

Hopkins Junior High School

First Place

Sachit Murthy, Adarsh Krishnamurthy, Hrishikesh Deshpande

Fires Near You - California

Sutter Middle School (Folsom)

High School **Honorable Mention**

Kush Garg, Junyang Wang, Dennis Xiao

*Autonomous Dispersion of BTI to Control Mosquito Population in
Water Bodies*

Vista Del Lago High School

Third Place

Selena Wong, Estella Wong, Parth Purankar

Autonomous Lawn Watering Robot

Vista Del Lago High School

CATEGORY WINNERS

APPLIED ENGINEERING

High School Second Place

Yahvin Gali

*Rethinking Braille with Pi Reader - Raspberry Pi based Optical Reader
for the Blind and Visually Impaired*
California Connections Academy at Ripon

First Place

Guadalupe Bernal

Robotic Platform for Artificial Intelligence Development
Folsom High School

BEHAVIORAL & SOCIAL SCIENCES

Middle School Honorable Mention

Jonathan Haddad

Gender Colors Affect on Each Other
E.V. Cain STEM Charter Middle School

Jackson Rohrer

Rewards: Do They Actually Help?
W.E. Mitchell Middle School

CATEGORY WINNERS

BEHAVIORAL & SOCIAL SCIENCES

Middle School Fifth Place

Ava Conn

Serif font vs. San Serif font! Which is better for reading comprehension?

E.V. Cain STEM Charter Middle School

Fourth Place

Ryann Strawn

Which gender has the best memory?

Our Lady of the Assumption Middle School

Third Place

Avery Shepard

Can We Really Rely on Eyewitness Testimonies?

E.V. Cain STEM Charter Middle School

Second Place

Ryan Silva

Computer vs. Book

E.V. Cain STEM Charter Middle School

CATEGORY WINNERS

BEHAVIORAL & SOCIAL SCIENCES

Middle School

First Place

Rylee Yetka

What is autonomous Sensory meridian response and how does it effect humans

E.V. Cain STEM Charter Middle School

High School

Honorable Mention

Abigail Shturman

The effects of Music Tempo on heart Beat Rate, Blood Pressure, and Respiration Rate While Operating A Motor Vehicle

Bella Vista High School

Third Place

Elizabeth Shust, Anne Genon

The Mistro is Us All

River City High School

Second Place

Rhitishah Yuva Raju

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

Mira Loma High School

CATEGORY WINNERS

BEHAVIORAL & SOCIAL SCIENCES

**High School
First Place**

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

BIOLOGY & HEALTH SCIENCES

**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

Matthew Silcott

*Cold feet? What Type of Socks can Keep Your Feet the Most Warm in
Cold Weather*

E.V. Cain STEM Charter Middle School

Fifth Place

Pranav Walimbe

More Sugar, Please!

Sutter Middle School (Folsom)

CATEGORY WINNERS

BIOLOGY & HEALTH SCIENCES

Middle School

Fourth Place

John Van Parys

How Long Til You Burn

Our Lady of the Assumption Middle School

Third Place

Aaron Benitez

*Does worm tea increase plant growth better than
commercial fertilizer*

E.V. Cain STEM Charter Middle School

Second Place

Olivia Thornton

Speak Up

E.V. Cain STEM Charter Middle School

First Place

Kaila Sheriff

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

E.V. Cain STEM Charter Middle School

CATEGORY WINNERS

BIOLOGY & HEALTH SCIENCES

High School

Honorable Mention

Nitya Kotha

Quantifying Water Stress in Roses Using the Pressure Chamber

Folsom High School

Third Place

Monserath Mendoza, Reinier Bautista

Spreading the Future with Bioplastics

Sheldon High School

Second Place

Vishalakshi Arun

Maximizing Crop Yield: The Affects of Temperature on the Plants

Circadian Clock

Mira Loma High School

First Place

Chinmayi Balusu

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

Vista Del Lago High School

CATEGORY WINNERS

COMPUTER SOFTWARE & TECHNOLOGY

Middle School Honorable Mention

Jazlyn Pestoni

What Algorithm can block adds most instantly?

E.V. Cain STEM Charter Middle School

Fifth Place

Katelyn Wong, Anthony Wong

How Moist is Your Soil?

California Middle School

Fourth Place

Sagar Varma

*Can It See You: Using machine learning to develop facial recognition
technology*

Sutter Middle School (Folsom)

Third Place

Eden Ng

*How Do Various Factors Influence the Accuracy of Convolutional
Neural Networks in the Identification of Human Handwriting?*

Folsom Middle School

CATEGORY WINNERS

COMPUTER SOFTWARE & TECHNOLOGY

Middle School

Second Place

Kathleen Goodwin, Samuel McCollough
Send Your Bathtub Worries Down the Drain
California Middle School

First Place

Abhram Mogali
Development of Wildfire Detection and Alerting System
Sutter Middle School (Folsom)

High School

Honorable Mention

Albert Qin
A Novel Convolutional Neural Network Based Approach to Bacteria Identification
Mira Loma High School

Third Place

Srinidhi Chandrasekaran
Understanding Early Diagnosis of Parkinson's Disease Through Support Vector Machine Modeling
Granite Bay High School

CATEGORY WINNERS

COMPUTER SOFTWARE & TECHNOLOGY

High School

Second Place

Ian Ng

Classifying Skin Cancer Lesion Images Using Neural Networks

Vista Del Lago High School

First Place

Lucile Zhu

A Novel Artificial Intelligence Method to Detect Allergens in Daily

Necessities

Mission San Jose High School

CHEMISTRY

Middle School

Honorable Mention

Thomas Orgain

How does changing the chemicals and pH levels effect spherification?

E.V. Cain STEM Charter Middle School

Isabel White, Saori Montes, Jasmine Thompson

Absorbing Heat: What Type of Fabric Absorbs the Most Heat

W.E. Mitchell Middle School

CATEGORY WINNERS

CHEMISTRY

Middle School

Fifth Place

Julieta Cortes-Carrasco

Is there a correlation between the price and quality of a battery?

E.V. Cain STEM Charter Middle School

Fourth Place

Amelia Totten

Does air pollution affect ocean life?

Our Lady of the Assumption Middle School

Third Place

Pranavi Khanna

Color This!

Sutter Middle School (Folsom)

Second Place

Jenna Meyer, Valerie Rice

Chlorine Lights

Mountain Creek Middle School

First Place

Ella Oddo

What is the Correlation between pH and Candida Y East?

E.V. Cain STEM Charter Middle School

CATEGORY WINNERS

CHEMISTRY

High School

Honorable Mention

Achyutha Kodavatikanti, Advait Thaploo

Cell Transformation through Direct Reprogramming

Mira Loma High School

Third Place

Zuriel Erikson Joven

Dextrose Trans-dermal Patches as a Low-Cost Alternative to Intravenous Delivery: A Feasibility Study

West Campus High School

Second Place

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

First Place

Shreya Ramachandran

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

American High School

CATEGORY WINNERS

PHYSICAL SCIENCES & MATH

Middle School Honorable Mention

Emma Villanueva

Does an Ionospheric Storm Affect Cell Phone Service

E.V. Cain STEM Charter Middle School

Roxy Olivia Luster

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

E.V. Cain STEM Charter Middle School

Fifth Place

Carson Lentz

What Material Blocks Sound Waves the Best

E.V. Cain STEM Charter Middle School

Fourth Place

Aiden Haboush, Aiden Sunberg

Blue Light Filtration Project

Mountain Creek Middle School

Third Place

Sydney McCaughna

Lifting Spirits - Which Wing Shape Generates the Most Lift?

E.V. Cain STEM Charter Middle School

CATEGORY WINNERS

PHYSICAL SCIENCES & MATH

Middle School

Second Place

Kacey Roberts

The Extent of Aerodynamic Influence Upon Land Vehicles

W.E. Mitchell Middle School

First Place

Abhinav Mukkamala, Aneesh Bhardwaj

*Defend your household electronic devices from disruptive
electromagnetic frequencies*

Sutter Middle School (Folsom)

High School

Honorable Mention

Brooke Zheng

Why Do Different Running Vehicles Sound Different?

Mission San Jose High School

Third Place

Snehaa Ganesh

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

Vista Del Lago High School

CATEGORY WINNERS

PHYSICAL SCIENCES & MATH

High School

Second Place

Samyak Surti

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

Vista Del Lago High School

First Place

Isaac Anchanattu

Measuring Road Quality Using Vibration Analysis

Mountain House High School

SUSTAINABLE TECHNOLOGY

Middle School

Fifth Place

Bogdan Peretyathko, Aman Dhillon, Maxim Pavlioglo

How to Make Salty Water Drinkable

W.E. Mitchell Middle School

Fourth Place

Aaron Young

A Simple Way to Clean a Cell Phone (Garlic)

Bridgeway Island K-8

CATEGORY WINNERS

SUSTAINABLE TECHNOLOGY

Middle School

Third Place

Aryah Hubbard

From Trash to Gas

Our Lady of the Assumption Middle School

Second Place

Jacob Parulan

Using Nontechnology to Clean-up Oil Spills: Which Amount of Ferrofluid is Ideal for Optimal Decontamination?

Our Lady of the Assumption Middle School

First Place

Jordan Prawira

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

Altamont Elementary School

High School

Honorable Mention

Emily Miner, Diya Nambiar, Akhil Sharma

Polystyrenator

Mira Loma and Folsom High Schools

CATEGORY WINNERS

SUSTAINABLE TECHNOLOGY

High School

Third Place

Avanti Ramraj, Diya Iyer, Easha Narayan

Organic Filter Bags

Granite Bay and Folsom High Schools

Second Place

Nathan Smith

Aqua Drone: A novel approach to water testing: An autonomous drone for measuring water quality in hazardous of remote locations

Christian Brothers High School

First Place

Jacqueline Prawira

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

Mountain House High School