



## Colorado Science and Engineering Fair

### Contact Information:

Courtney Butler

CSEF Director

[csef@lamar.colostate.edu](mailto:csef@lamar.colostate.edu)

(970) 491 - 7716

### 2019 Colorado Science and Engineering Fair Award Winners

Fort Collins, CO (April 12, 2019) – This year’s Colorado Science and Engineering Fair (CSEF) was held April 11-13, 2019. 316 projects were on display from students in grades 6 through 12, at the Lory Student Center on the Colorado State University – Fort Collins campus.

This year’s Grand and Special Awards winners were monumental; in fact, over 450 individual awards were presented at the awards ceremony. Attached is the list of winners.

Five Senior Division CSEF Finalists will be traveling to Phoenix, AZ to compete in the Intel International Science and Engineering Fair in May. They are:

1<sup>st</sup> Place: Krithik Ramesh from Cherry Creek High School for the project *Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*

2<sup>nd</sup> Place: Anudeep Golla from Fairview High School for the project *Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site*

3<sup>rd</sup> Place: Sara Nehring from Monte Vista High School for the project *Pattern Recognition Using Neural Networks in the MATLAB Programming Environment*

4<sup>th</sup> Place: Joy Ma from Fairview High School for the project *Nanoscale Optical Probing of Two-Dimensional Heterostructures Suspended on Nano-Slits*

5<sup>th</sup> Place: Charles Wang from Fossil Ridge High School & Suhaas Narayanan from Fort Collins High School for the project *A Novel Synthesis of 3,5-Disubstituted  $\Delta^2$ -Isoxazoline as a Precursor to Various Diabetic Medications*

The CSEF also presented the Lockheed Martin Teacher of the Year Award to Annette Humphrey from Good Shepherd Catholic School in Denver, CO.

Special thanks goes to all of the contributors and sponsors of the 2019 CSEF for their financial and in-kind support of Colorado’s future scientists. This year’s top sponsors (\$2,500 or more) included Colorado State University, Intel Foundation, Bayswater Exploration & Production, LLC, Verizon Wireless, Broadcom Foundation, US Department of Commerce/NOAA, Lockheed Martin, Colorado Dental Association, Society of Petroleum Engineers.

For a complete list of all of the 2019 CSEF participants, sponsors, Colorado’s Intel ISEF delegates and other CSEF details, please visit the CSEF website at [www.csef.colostate.edu](http://www.csef.colostate.edu).

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The Colorado Science and Engineering Fair (CSEF) is an independent, nonprofit corporation. Thanks to the support of generous corporations, foundations, government agencies, and donors who believe in the importance of science education, the CSEF has served Colorado and its students for 64 years.

# 2019 Colorado Science and Engineering Fair

## Grand Awards Press Release

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### Junior Division Best-of-CSEF Project

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#### First Place

Hudson Kruse 8th grade  
*The Influence of Drought and Frequent Wildfires on the Chaparral*  
 Home School Colorado Springs

#### Second Place

Tyler Kester 7th grade  
*Little Marvel: A Comparative Study of Plant Growth*  
 Sierra Grande Jr/Sr High School Blanca

#### Third Place

Xander Duvall 8th grade  
*Variable Scintillation Frequencies in Muon Detection*  
 Thomas MacLaren School Colorado Springs

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### Senior Division Best-of-CSEF Project

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#### First Place

Krithik Ramesh 11th grade  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*  
 Cherry Creek High School Greenwood Village

#### Second Place

Anudeep Golla 11th grade  
*Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site*  
 Fairview High School Boulder

#### Third Place

Sara Nehring 10th grade  
*Pattern Recognition Using Neural Networks in the MATLAB Programming Environment*  
 Monte Vista High School Monte Vista

#### Fourth Place

Joy Ma 11th grade  
*Nanoscale Optical Probing of Two-Dimensional Heterostructures Suspended on Nano-Slits*  
 Fairview High School Boulder

#### Fifth Place

Charles Wang 10th grade  
 Suhaas Narayanan 11th grade  
*A Novel Synthesis of 3,5-Disubstituted  $\Delta^2$ -Isoxazoline as a Precursor to Various Diabetic Medications*  
 Fossil Ridge HS & Fort Collins HS Fort Collins

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### Junior Division Animal Sciences

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#### First Place

Edie Simecek 8th grade  
*Buzz Pollination: The Relationship Between Frequency and Pollen*  
 Summit Middle Charter School Boulder

#### Second Place

Madison Miller 8th grade  
*Fowl Play: How Different Types of Recreational "Play" Affects the Flush Response of Waterfowl*  
 Monte Vista Middle School Monte Vista

#### Third Place

Sophia Dickey 7th grade  
*The Amazing Mouse Maze: A Test of Memory*  
 Mancos Middle School Mancos

#### Honorable Mention

Deeksha Elango 8th grade  
*Effects of Surface Geometry on *L. vannamei* Habitats and Substrate Preference*  
 SkyView Academy Highlands Ranch

#### Honorable Mention

Trisha Balani 8th grade  
*Hotter, Hungrier . . . Hornworms?!*  
 Challenge School Denver

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### Senior Division Animal Sciences

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#### First Place

Nariah Smith 11th grade  
*Pigeon Training: Sociability, Innovation, and Ability to Learn*  
 La Junta High School La Junta

#### Second Place

Camille Rawinski 9th grade  
*UnBEElievable Pollination: Examining the Effects of Air Pollutants on Bumble Bee Pollination*  
 Monte Vista High School Monte Vista

#### Third Place

Anuradha Prakash 10th grade  
*Two-Bottle Choice Test: Alcohol Consumption and Preference in Mice Selectively Bred for High Activity Low Anxiety Compared to Mice Selectively Bred for Low Activity High Anxiety*  
 Fairview High School Boulder

#### Honorable Mention

Jenny Galvan 10th grade  
*Eradication of *Pomacea Canaliculata* Using Novel Water Treatment Methods*  
 Limon Schools Limon

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### Junior Division Behavioral & Social Sciences

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#### First Place

Marissa Martinez 8th grade  
*Imagine the Perfect Title!*  
 Monte Vista Middle School Monte Vista

#### Second Place

Brakelle Westphal 8th grade  
*How Distracted Do You Drive?*  
 Springfield Jr/Sr High School Springfield

**Third Place**

Kate Mastrolia 8th grade  
*Analyzing the Effect of Lifestyle on Problem Solving*  
 The Classical Academy Colorado Springs

**Honorable Mention**

Averi Ulibarri 7th grade  
*Chromatic Adaptation: Now You See It, Now You Don't*  
 St. John the Evangelist Catholic School Loveland

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**Senior Division Behavioral & Social Sciences**

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**First Place**

Shreya Naik 11th grade  
 Callandra Peters 12th grade  
 Kezia Dick 12th grade  
*Effect of TBI on Learning and Memory in D. melanogaster and the Efficacy of Piracetam as a Treatment*  
 Rock Canyon High School Highlands Ranch

**Second Place**

Amada Quintana 9th grade  
*The Effects of Stress on Teenage Substance Use*  
 Monte Vista High School Monte Vista

**Third Place**

Gigi Keziah 12th grade  
*Feature Weighting in Multimodal Affect Prediction and Emotion Inference*  
 Fairview High School Boulder

**Honorable Mention**

Angel Castillo 11th grade  
*Reviving Recycling Through Art*  
 West Grand High School Kremmling

**Honorable Mention**

Ariel Bowden 12th grade  
*iSpy: Malevolent Observation*  
 Miami-Yoder High School Rush

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**Junior Division Chemistry & Biochemistry**

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**First Place**

Benjamin Homan 8th grade  
*Does Pressure Affect Carbon Dioxide Absorption by Polyethyleneimine?*  
 Monument Charter Academy Monument

**Second Place**

Courtney Croom 8th grade  
*The Separation of DNA by Applying Thermal Heat*  
 The Classical Academy Colorado Springs

**Third Place**

Chloe Sebek 6th grade  
*What's Poppin?*  
 Sacred Heart of Jesus Catholic School Boulder

**Honorable Mention**

Kaiden Box 8th grade  
*pH and Fermentation*  
 Imagine Charter School Firestone

**Honorable Mention**

Kailas Cassidy 6th grade  
*Mummifying Hot Dogs*  
 St. Columba Catholic School Durango

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**Senior Division Chemistry & Biochemistry**

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**First Place**

Charles Wang 10th grade  
 Suhaas Narayanan 11th grade  
*A Novel Synthesis of 3,5-Disubstituted  $\Delta^2$ -Isoxazoline as a Precursor to Various Diabetic Medications*  
 Fossil Ridge HS & Fort Collins HS Fort Collins

**Second Place**

Calvin Ewing 12th grade  
 Olivia Cesarone 12th grade  
 Sarah Mellett 12th grade  
*Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization*  
 Rock Canyon High School Highlands Ranch

**Third Place**

Nikhila Narayana 9th grade  
*Does Adding Coconut Oil to Rice Reduce Its Calorific*  
 Rock Canyon High School Lone Tree

**Honorable Mention**

Akber Shaikh 10th grade  
*Degradation, Stabilization, and Delivery of Immune System Targeted Drugs*  
 Cherry Creek High School Greenwood Village

**Honorable Mention**

Stephen McDonald 12th grade  
 Nizhoni Valdez 12th grade  
*SPROSIN*  
 Central High School Pueblo

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**Junior Division Earth & Space Sciences**

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**First Place**

Samantha Cerniglia 7th grade  
*Shields Up: Wilson Cloud Chamber Study of High Energy Subatomic-Particle Shield Materials*  
 The Classical Academy Colorado Springs

**Second Place**

Abigail Ross 8th grade  
*Detecting Flares*  
 Lamar Middle School Lamar

**Third Place**

Claire Heeley 8th grade  
*Predicting High Intensity Solar Flares*  
 Summit Middle Charter School Boulder

**Honorable Mention**

Serenity Foutz 8th grade  
*Explanation of Land Reclamation*  
 Ignacio Middle School Ignacio

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**Senior Division** **Earth & Space Sciences**

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**First Place**

Max Warnock 11th grade  
*Spatial Analysis of the Glaciers in Grand Teton National Park Between 1994 and 2015*  
Poudre Global Academy Fort Collins

**Second Place**

Sarah Tang 11th grade  
*Ground-Based Followups of TESS Exoplanet Candidates*  
Fairview High School Boulder

**Third Place**

Jenna Salvat 12th grade  
*A Geochemical and Petrographic Analysis of Metamorphic Lithologies Proximal to the CC&V Diatreme*  
Coronado High School Colorado Springs

**Honorable Mention**

Nicholas Entin 12th grade  
*Variability in the Thermosphere of Mars*  
Peak to Peak Charter School Lafayette

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**Junior Division** **Energy**

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**First Place**

Michael Wu 7th grade  
*LED Lights: Hero or Zero*  
The Classical Academy Colorado Springs

**Second Place**

Theodore Duarte 8th grade  
*Life's a Breeze: What Wind Turbine Blade Shape & Angle Will Produce Energy Most Effectively?*  
Homyak PK-8 School Dacono

**Third Place**

Tristan May-Ostendorp 7th grade  
*Energy Implications of Smart Devices*  
St. Columba Catholic School Durango

**Honorable Mention**

Maxwell Benedict 7th grade  
*The Effect of Air Pollution on Solar Panel Yield*  
Grant Beacon Middle School Denver

**Honorable Mention**

Judah Hartman 7th grade  
*The Magnetic Highway*  
Home School Durango

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**Senior Division** **Energy**

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**First Place**

Kevin Yang 11th grade  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*  
Fairview High School Boulder

**Second Place**

Mark Bloomfield 11th grade  
*Charged Up: Testing Lithium Ion Battery Performance Using a Raspberry Pi Load Cell*  
Coronado High School Colorado Springs

**Third Place**

Mohamed Ibrahim 9th grade  
*Microbial Fuel Cells in the Initiation of Electrolysis in River Water*  
Wiggins Jr/Sr High School Wiggins

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**Junior Division** **Engineering**

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**First Place**

Amanda Castillo-Lopez 7th grade  
*Grey Water Recycling System Using Arduinos*  
Challenge School Denver

**Second Place**

Austin Cantor 8th grade  
*Hail! No!*  
The Classical Academy Colorado Springs

**Third Place**

Thomas Ferrell 8th grade  
*Homemade Air Quality Monitors Fast, Cheap and Out of Control*  
Home School Durango

**Honorable Mention**

David Campbell 8th grade  
*The Weakest Link: The Affect of Infill Pattern & Density on the Tensile Strength of a 3D-Printed Part*  
Summit Middle Charter School Boulder

**Honorable Mention**

Maddox Shull 6th grade  
*Breaking Bridges*  
Eagle County Charter Academy Edwards

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**Senior Division** **Engineering**

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**First Place**

Krithik Ramesh 11th grade  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*  
Cherry Creek High School Greenwood Village

**Second Place**

Tate Schrock 9th grade  
*Agriculture Soil Probe Rover*  
Arickaree School Anton

**Third Place**

Alyssa Keirn 11th grade  
*Solar Powered UVC and Ozone-Based Decontaminator*  
Rocky Mountain High School Fort Collins

**Honorable Mention**

Katelynn Salmon 12th grade  
Josh Nakka 11th grade  
*Engineering a Low-Cost, Portable Braille Display for Developing Countries*  
Palmer Ridge High School Monument

**Honorable Mention**

Jasmine Li 11th grade  
*The Future of Microrobots: Development of a Bio-inspired Synthetic Swarm Network*  
Fairview High School Boulder

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**Junior Division Environmental Sciences**

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**First Place**

Hudson Kruse 8th grade  
*The Influence of Drought and Frequent Wildfires on the Chaparral*  
Home School Colorado Springs

**Second Place**

Luke Nielsen 8th grade  
*Delta Irrigation*  
The Classical Academy Colorado Springs

**Third Place**

Luci Bruchez 6th grade  
*Fire Frenzy*  
West Grand Middle School Kremmling

**Honorable Mention**

Owen Doherty 7th grade  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods for Rangeland Soil Erosion Control*  
Branson School Branson

**Honorable Mention**

Alexandra Flint 8th grade  
*Examining Electric Charges as a Method for Cleaning Microplastics from the Oceans*  
Peak to Peak Charter School Lafayette

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**Senior Division Environmental Sciences**

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**First Place**

Alyssa Rawinski 12th grade  
*Tracking Microplastics Through a Food Chain to Determine the Effectiveness of Plastic Biodegradation*  
Monte Vista High School Monte Vista

**Second Place**

Madeleine Nagle 11th grade  
*Radiation at Rocky Flats National Wildlife Refuge*  
Fairview High School Boulder

**Third Place**

Amber Michel 12th grade  
*Rock On: Limestone's Potential to Improve Water Quality in the Alamosa River Drainage*  
Monte Vista High School Monte Vista

**Honorable Mention**

Andres Villa 10th grade  
*Examining the Toxicity of Herbicides and Fungicides on Aquatic and Terrestrial Environments*  
Monte Vista High School Monte Vista

**Honorable Mention**

Emma Stone 10th grade  
Reiley Leake 10th grade  
*Orange Is the New Black: Methylene Blue Adsorption Using Citrus Peels*  
Brush High School Brush

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**Junior Division Mathematics & Computer Sciences**

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**First Place**

Henry Westfall 8th grade  
*Predicting Influenza Genome Mutations Using Neural Networks*  
Summit Middle Charter School Boulder

**Second Place**

Luke Weber 8th grade  
*Safe Ride*  
Flagstaff Charter Academy Longmont

**Third Place**

Cullen Aasmundstad-Williams 8th grade  
*Do Different Computer Programming Languages Have Different Efficiency Rates?*  
Imagine Charter School Firestone

**Honorable Mention**

Kai Morton 7th grade  
*A Game for All Eyes*  
The Classical Academy Colorado Springs

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**Senior Division Mathematics & Computer Sciences**

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**First Place**

Sara Nehring 10th grade  
*Pattern Recognition Using Neural Networks in the MATLAB Programming Environment*  
Monte Vista High School Monte Vista

**Second Place**

William Hofgard 11th grade  
*Optimal Switching Between Egocentric and Geocentric Navigation for *Scarabaeus lamarcki**  
Fairview High School Boulder

**Third Place**

Austen Mazenko 11th grade  
*Cop Strategy and Cop Number Analysis of  $k$ -Regular, Fully Active Cops and Robber Games*  
Cherry Creek High School Greenwood Village

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**Junior Division Medicine & Health**

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**First Place**

Hailey Kressin 8th grade  
*A Sixth Sense: Omni-Directional Presence Detection System*  
The Classical Academy Colorado Springs

**Second Place**

Ava Steger 8th grade  
*Agenesis of the Corpus Callosum, and Epilepsy, and the Effectiveness of Anticonvulsant Drugs*  
Webber Middle School Fort Collins

**Third Place**

Rithi Prabhu 8th grade  
*Can a Dissociation Enzyme Like Papain, Solve Celiac Disease?*  
Summit Middle Charter School Boulder

**Honorable Mention**

Ethan Gavin 8th grade  
*Shining a Light on Cross-Contamination*  
The Classical Academy Colorado Springs

<b>Honorable Mention</b>	
Logan Haffele	6th grade
<i>The Science of Yuck!</i>	
Eagle County Charter Academy	Edwards

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<b>Senior Division</b>	<b>Medicine &amp; Health</b>
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<b>First Place</b>	
Shreya Shubhangi	12th grade
<i>Effect of Maternal Weight on Insulin Sensitivity in Infant Umbilical Cord Mesenchymal Stem Cells</i>	
Rock Canyon High School	Lone Tree

<b>Second Place</b>	
Edwin Bodoni	12th grade
<i>Bruxism: A Novel Diagnostic Approach - Part II</i>	
Cherry Creek High School	Greenwood Village

<b>Third Place</b>	
Evelyn Bodoni	11th grade
<i>The Role of NGAL as a Biomarker for Acute Kidney Injury</i>	
Cherry Creek High School	Greenwood Village

<b>Honorable Mention</b>	
Emily Idler	11th grade
<i>Blood Clotting Agent: The Development of an Improved Blood Clotting Agent</i>	
Liberty School	Joes

<b>Honorable Mention</b>	
Megan Starkey	11th grade
<i>Scrambled</i>	
Greeley West High School	Greeley

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<b>Junior Division</b>	<b>Microbiology &amp; Molecular Biology</b>
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<b>First Place</b>	
Tori Plett	7th grade
<i>Germ on a Roll</i>	
The Classical Academy	Colorado Springs

<b>Second Place</b>	
Mary Ryan	7th grade
<i>Bacteria Be Gone</i>	
St. Mary Catholic School	Greeley

<b>Third Place</b>	
Norah Quirk	8th grade
<i>An Old Remedy Given New Life</i>	
The Classical Academy	Colorado Springs

<b>Honorable Mention</b>	
Una Basta	8th grade
<i>How Spices Effect Bacterial Growth</i>	
Summit Middle Charter School	Boulder

<b>Honorable Mention</b>	
Nishita Kotlapati	7th grade
Brenna Toll	7th grade
<i>Diabolical Detergent</i>	
Challenge School	Denver

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<b>Senior Division</b>	<b>Microbiology &amp; Molecular Biology</b>
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<b>First Place</b>	
Anudeep Golla	11th grade
<i>Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site</i>	
Fairview High School	Boulder

<b>Second Place</b>	
Danae Beauprez	12th grade
<i>The Antibacterial Properties of Breastmilk and Its Comparison to Antibiotics</i>	
Yuma High School	Yuma

<b>Third Place</b>	
W. Hall Matthews	9th grade
<i>Algistatic Effects of Retail Barley Extract Applied in Reduced Dosage Rates as a Treatment for Lake Okeechobee,</i>	
Home School	Bellvue

<b>Honorable Mention</b>	
Fathima Thathey	11th grade
<i>Effectiveness of Turmeric as an Antibiotic against E. coli</i>	
Cherry Creek High School	Greenwood Village

<b>Honorable Mention</b>	
Kathryn Broderius	11th grade
<i>Metals in the Fight Against Bacteria</i>	
Greeley West High School	Greeley

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<b>Junior Division</b>	<b>Physics</b>
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<b>First Place</b>	
Xander Duvall	8th grade
<i>Variable Scintillation Frequencies in Muon Detection</i>	
Thomas MacLaren School	Colorado Springs

<b>Second Place</b>	
Annette Bechtolt	6th grade
<i>Invisible Levitation</i>	
St. Columba Catholic School	Durango

<b>Third Place</b>	
Sam Morgan	8th grade
<i>Angle and Range: Checking What We Know</i>	
Orchard Mesa Middle School	Grand Junction

<b>Honorable Mention</b>	
Bryan Williams	7th grade
<i>Tesla Coil: The Physics of Electromagnetism</i>	
Hoehne Schools	Hoehne

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<b>Senior Division</b>	<b>Physics</b>
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<b>First Place</b>	
Joy Ma	11th grade
<i>Nanoscale Optical Probing of Two-Dimensional Heterostructures Suspended on Nano-Slits</i>	
Fairview High School	Boulder

<b>Second Place</b>	
Kyle Shi	11th grade
<i>Polarized Light Microscopy on the B7 Phase of Methyl Heptyl Oxy Tail Bow Shaped Mesogen (MHOBOW)</i>	
Fairview High School	Boulder

**Third Place**

Aria Mundy 12th grade  
*Characterizing Linear and Nonlinear Ultrafast Pulse  
 Propagation in Optical Fibers*  
 Fairview High School Boulder

**Honorable Mention**

Hope Dannar 12th grade  
*Designing and Testing an Oscillator System for Pilot Wave  
 Hydrodynamics*  
 University Schools Evans

**Junior Division** **Plant Sciences**

**First Place**

Tyler Kester 7th grade  
*Little Marvel: A Comparative Study of Plant Growth*  
 Sierra Grande Jr/Sr High School Blanca

**Second Place**

Hazel Cleaves 7th grade  
*Rooted*  
 St. Columba Catholic School Durango

**Third Place**

Grazia Novak 8th grade  
*Growing with Greywater: Gross or Great?*  
 Turner Middle School Berthoud

**Honorable Mention**

Jamie Hume 6th grade  
*The Grey Effect*  
 Walsh Elementary School Walsh

**Honorable Mention**

Molly Best 6th grade  
*What's the Matter?*  
 St. Columba Catholic School Durango

**Senior Division** **Plant Sciences**

**First Place**

Gabriel Lorenz 10th grade  
*Optimizing Mangrove Root Structure by Using 3D Printed  
 Mangrove Models to Prevent Hurricane Waves*  
 SkyView Academy Highlands Ranch

**Second Place**

Kathryn Kummel 10th grade  
*Fractals & Catastrophic Bifurcation: Exploring Treeline  
 Structure Using Drones and Math Models in R*  
 Palmer High School Colorado Springs

**Third Place**

Ashlyn Rockey 9th grade  
*Physiological Yield and Tolerance Response to Managed  
 Irrigation in *Chenopodium Quinoa**  
 Sargent Jr/Sr High School Monte Vista

**Honorable Mention**

Tyson Lichty 12th grade  
*Dry Distiller Grains: Ethanol By-Products as a Source of  
 Fertilizer*  
 Liberty School Joes

# 2019 Colorado Science and Engineering Fair

## Special Awards Press Release

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### Colorado Science & Engineering Fair

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#### *Elemer Bernath Technical Writing Award*

Cora Schrock 8th grade  
 \$100, certificate  
 Arickaree School Anton  
*Grass vs. Grain Fed: A Comparison of TAC*

#### *Ralph Desch Memorial Technical Writing Award*

Madeleine Nagle 11th grade  
 \$100, certificate  
 Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

#### *Poster Art Contest*

Angel Castillo 11th grade  
 \$100, certificate  
 West Grand High School Kremmling

#### *Student Choice Award*

Carson Mead 7th grade  
 \$100, trophy, certificate  
 Turner Middle School Berthoud  
*Time Dripping Away*

Abby Klapp 9th grade  
 \$100, trophy, certificate  
 Palmer Ridge High School Monument  
*Sport Climbing: The Impact on Spatial Awareness*

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### Pioneers of Science

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#### *Temple Grandin Award*

Kaylee Anderson 8th grade  
 \$50, certificate, poster of pioneer scientist  
 Cardinal Community Academy Keenesburg  
*Color Me Hungry*

#### *Margaret Mead Award*

Eliazar Maldonado 8th grade  
 \$50, certificate, poster of pioneer scientist  
 Pueblo School for Arts and Sciences Pueblo  
*Abstract Art*

#### *Tracy Caldwell Dyson Award*

Shelby Nice 7th grade  
 \$50, certificate, poster of pioneer scientist  
 The Classical Academy Colorado Springs  
*Do Granite Countertops Affect the Shelf Life of Produce?*

#### *Dorothy Metcalf-Lindenburger Award*

Erica Miller 6th grade  
 \$50, certificate, poster of pioneer scientist  
 Home School Sanford  
*Where ON the World Am I?*

#### *James D. Halsell Award*

Zora Malone 6th grade  
 \$50, certificate, poster of pioneer scientist  
 Corwin International Magnet School Pueblo  
*Gardener's Cell Phone Battery*

#### *Michael James Massimino Award*

Teagan Archer 6th grade  
 \$50, certificate, poster of pioneer scientist  
 Mancos Middle School Mancos  
*Clean Teeth Candy*

#### *Mary Cleave Award*

Luci Bruchez 6th grade  
 \$50, certificate, poster of pioneer scientist  
 West Grand Middle School Kremmling  
*Fire Frenzy*

#### *Steven Ray Swanson Award*

Chance Hill 8th grade  
 \$50, certificate, poster of pioneer scientist  
 Walt Clark Middle School Loveland  
*Hey Google, Are You Spying on Me?*

#### *Kjell N. Lindgren Award*

Ethan Augerot 6th grade  
 \$50, certificate, poster of pioneer scientist  
 Corwin International Magnet School Pueblo  
*How Sweet Is It?*

#### *Kathleen "Kate" Rubins Award*

Talia Moore 8th grade  
 \$50, certificate, poster of pioneer scientist  
 Blevins Middle School Fort Collins  
*Comparison of Household Pet Saliva Bacteria*

#### *Sally Kristen Ride Award*

M J Kenney 7th grade  
 \$50, certificate, poster of pioneer scientist  
 Arickaree School Anton  
*Pongs Away!*

#### *Luther Burbank Award*

Trenton Paskett 7th grade  
 \$50, certificate, poster of pioneer scientist  
 Sargent Jr/Sr High School Monte Vista  
*Wildfires to Wild Flowers*

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### Military

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#### United States Air Force

#### *Air Force ROTC Award*

Jasmine Li 11th grade  
 certificate, over-the-shoulder sling pack, power bank charger,  
 dog tag USB flash drive, dual USB car charger  
 Fairview High School Boulder  
*The Future of Microrobots: Development of a Bio-inspired  
 Synthetic Swarm Network*



Akshunna Vaishnav 12th grade  
certificate, over-the-shoulder sling pack, power bank charger,  
dog tag USB flash drive, dual USB car charger  
Cherry Creek High School Greenwood Village  
*Computer Modeling, Simulation, and Calculation of GPS Error  
Due to Fluctuations in Space Weather*

Cole Tedder 7th grade  
certificate, over-the-shoulder sling pack, power bank charger,  
dog tag USB flash drive, dual USB car charger  
Walsh Jr/Sr High School Walsh  
*Redneck Rocketry*

### **United States Navy & Marine Corps**

#### *Office of Naval Research Award*

Alexandra Flint 8th grade  
letter of congratulations, ONR medallion, certificate  
Peak to Peak Charter School Lafayette  
*Examining Electric Charges as a Method for Cleaning  
Microplastics from the Oceans*

Aditya Gonella 7th grade  
letter of congratulations, ONR medallion, certificate  
Discovery Canyon Campus Middle Colorado Springs  
*Water Me When I'm Thirsty*

Trenton Paskett 7th grade  
letter of congratulations, ONR medallion, certificate  
Sargent Jr/Sr High School Monte Vista  
*Wildfires to Wild Flowers*

Jared Ingmire 8th grade  
letter of congratulations, ONR medallion, certificate  
Imagine Charter School Firestone  
*Taking Flight*

Madeleine Nagle 11th grade  
letter of congratulations, ONR medallion, certificate, \$75 gift  
card (to be mailed)  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

Alyssa Keirn 11th grade  
letter of congratulations, ONR medallion, certificate, \$75 gift  
card (to be mailed)  
Rocky Mountain High School Fort Collins  
*Solar Powered UVC and Ozone-Based Decontaminator*

Rahul Thomas 10th grade  
letter of congratulations, ONR medallion, certificate, \$75 gift  
card (to be mailed)  
Cherry Creek High School Greenwood Village  
*A Comparative Study of Neural Networks vs. Classical  
Methods for Solving Differential Equations*

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### **Organizational**

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#### **Air & Waste Management Association**

##### **Rocky Mountain States Section**

##### *Air & Waste Management Award*

Thomas Ferrell 8th grade  
\$50  
Home School Durango  
*Homemade Air Quality Monitors Fast, Cheap and Out of  
Control*

Owen Doherty 7th grade  
\$100  
Branson School Branson  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods  
for Rangeland Soil Erosion Control*

Mikailah Feinman 9th grade  
\$50  
Primero Jr/Sr High School Weston  
*Repurposing Produced Gas Well Water as an Alternative  
Water Source for Agriculture Year III*

Emma Stone 10th grade  
Reiley Leake 10th grade  
\$100  
Brush High School Brush  
*Orange Is the New Black: Methylene Blue Adsorption Using  
Citrus Peels*

#### **American Association of University Women**

##### *AAUW Award for Women in STEM*

Avril Pagano 7th grade  
Chanel Martinez 7th grade  
Amiyah Arellano 7th grade  
\$100  
Goodnight School Pueblo  
*Quickest Dissolving Painkiller*

Nikhila Narayana 9th grade  
\$100  
Rock Canyon High School Lone Tree  
*Does Adding Coconut Oil to Rice Reduce Its Calorific*

#### **American Chemical Society**

##### **Colorado Local Section**

##### *ACS's Excellence in Chemistry Award*

Benjamin Homan 8th grade  
certificate, \$50  
Monument Charter Academy Monument  
*Does Pressure Affect Carbon Dioxide Absorption by  
Polyethyleneimine?*

Dominic Moser 6th grade  
certificate, \$50  
Notre Dame Parish School Denver  
*Shocking Water*

Max Zenk 8th grade  
certificate, \$50  
St. Mary Catholic School Greeley  
*Dyeing to Learn*

Kailas Cassidy 6th grade  
certificate, \$50  
St. Columba Catholic School Durango  
*Mummifying Hot Dogs*

Courtney Croom 8th grade  
certificate, \$150  
The Classical Academy Colorado Springs  
*The Separation of DNA by Applying Thermal Heat*

Akber Shaikh 10th grade  
certificate, \$50  
Cherry Creek High School Greenwood Village  
*Degradation, Stabilization, and Delivery of Immune System  
Targeted Drugs*

Calvin Ewing 12th grade  
Olivia Cesarone 12th grade  
Sarah Mellett 12th grade  
certificate, \$50

Rock Canyon High School Highlands Ranch  
*Efficacy of Triton X-100 as a Candidate for Whole Organ  
Decellularization*

Stephen McDonald 12th grade  
Nizhoni Valdez 12th grade  
certificate, \$50  
Central High School Pueblo  
*SPROSIN*

Charles Wang 10th grade  
Suhaas Narayanan 11th grade  
certificate, \$150

Fossil Ridge HS & Fort Collins HS Fort Collins  
*A Novel Synthesis of 3,5-Disubstituted  $\Delta^2$ -Isoxazoline as a  
Precursor to Various Diabetic Medications*

### **American Industrial Hygiene Association Rocky Mountain Section**

*Excellence in Protection of Occupational Health and  
Safety Award*

Matthew Anderson 9th grade  
\$50  
Cherry Creek High School Greenwood Village  
*Reduction of Aircraft Noise Via Landing Gear Surface  
Controls*

Brakelle Westphal 8th grade  
\$50  
Springfield Jr/Sr High School Springfield  
*How Distracted Do You Drive?*

Thomas Ferrell 8th grade  
\$50  
Home School Durango  
*Homemade Air Quality Monitors Fast, Cheap and Out of  
Control*

Joshua Decker 7th grade  
\$50  
The Classical Academy Colorado Springs  
*No More Bike Crashes! Using Ultrasonic and ToF Sensors to  
Prevent Car to Bike Accidents*

Lilly Figueroa 8th grade  
\$50  
Mancos Middle School Mancos  
*Contaminants, Contagions and Critical Care: The Impacts of  
North Carolina's Anaerobic Swine Lagoons*

Madison Robson 8th grade  
\$50  
Eaton Middle School Eaton  
*How to Keep the Sound Down*

Barrett Aronson 7th grade  
\$50  
St. Columba Catholic School Durango  
*A Breath of Fresh Air*

Cody Robinson 12th grade  
Emmanuel Fierro Bustillos 12th grade  
\$50  
Yuma High School Yuma  
*An Acetone Specific Breathalyzer for T1D*

Logan Van Grinsven 12th grade  
Jessica Gregory 11th grade  
\$50  
West Grand High School Kremmling  
*The Light of Sounds*

Madeleine Nagle 11th grade  
\$50  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

### **American Institute of Aeronautics and Astronautics, Rocky Mountain Section AIAA Prize**

Levi Archambault 7th grade  
certificate, Arduino Kit & 1 Year AIAA student membership  
The Classical Academy Colorado Springs  
*This Will Blow You Away*

Maddox Shull 6th grade  
certificate, Arduino Kit & 1 Year AIAA student membership  
Eagle County Charter Academy Edwards  
*Breaking Bridges*

Matthew Anderson 9th grade  
certificate, Arduino Kit & 1 Year AIAA student membership  
Cherry Creek High School Greenwood Village  
*Reduction of Aircraft Noise Via Landing Gear Surface  
Controls*

Sarah Tang 11th grade  
certificate, Arduino Kit & 1 Year AIAA student membership  
Fairview High School Boulder  
*Ground-Based Followups of TESS Exoplanet Candidates*

### **American Institute of Chemical Engineers Rocky Mountain Section**

*Excellence in Chemical Engineering Award*

Benjamin Homan 8th grade  
\$75  
Monument Charter Academy Monument  
*Does Pressure Affect Carbon Dioxide Absorption by  
Polyethyleneimine?*

Gabriela Ferrell 6th grade  
\$100  
Home School Durango  
*Hot Under the Collar? Massive Blow Up? Or Chill Out?  
What's the Right Reaction?*

Nathan Nash 9th grade  
\$75  
Primero Jr/Sr High School Weston  
*Testing Water pH Up/Downstream from Mines to Determine If  
They Are Changing the Purgatoire*

Sophia Markuson DiPrince 12th grade  
\$100  
Central High School Pueblo  
*Anaerobic Digestion of Food Waste Part 4: Does Temperature Affect the Production of Food Waste*

**American Institute of Professional Geologists  
Colorado Section**

*AIPG Certificate of Excellence in the Geosciences*  
Alexandra Flint 8th grade  
\$50  
Peak to Peak Charter School Lafayette  
*Examining Electric Charges as a Method for Cleaning Microplastics from the Oceans*  
Owen Doherty 7th grade  
\$100  
Branson School Branson  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods for Rangeland Soil Erosion Control*  
Max Warnock 11th grade  
\$50  
Poudre Global Academy Fort Collins  
*Spatial Analysis of the Glaciers in Grand Teton National Park Between 1994 and 2015*  
Madeleine Nagle 11th grade  
\$100  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

**American Meteorological Society  
Denver/Boulder Chapter**

*Award for Excellence in Atmospheric Science  
Research*

Luke Nielsen 8th grade  
certificates, gift certificates  
The Classical Academy Colorado Springs  
*Delta Irrigation*  
Amber Michel 12th grade  
certificates, gift certificates  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in the Alamosa River Drainage*

**American Statistical Association  
Colorado/Wyoming Chapter**  
*David Young Memorial Award*

Alexandra Flint 8th grade  
\$200, student membership in the American Statistical Association, acknowledgment at chapter spring meeting and on chapter website  
Peak to Peak Charter School Lafayette  
*Examining Electric Charges as a Method for Cleaning Microplastics from the Oceans*

Krithik Ramesh 11th grade  
\$200, student membership in the American Statistical Association, acknowledgment at chapter spring meeting and on chapter website  
Cherry Creek High School Greenwood Village  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*

**American Vacuum Society  
Rocky Mountain Chapter**

*Excellence in Physical Sciences & Engineering  
Award*

Gabriela Ferrell 6th grade  
\$50, \$50 matching award to teacher/sponsor  
Home School Durango  
*Hot Under the Collar? Massive Blow Up? Or Chill Out? What's the Right Reaction?*  
Samantha Cerniglia 7th grade  
\$100, \$100 matching award to teacher/sponsor  
The Classical Academy Colorado Springs  
*Shields Up: Wilson Cloud Chamber Study of High Energy Subatomic-Particle Shield Materials*  
Nicholas Entin 12th grade  
\$50, \$50 matching award to teacher/sponsor  
Peak to Peak Charter School Lafayette  
*Variability in the Thermosphere of Mars*  
Kevin Yang 11th grade  
\$50, \$50 matching award to teacher/sponsor  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*  
Camille Rawinski 9th grade  
\$100, \$100 matching award to teacher/sponsor  
Monte Vista High School Monte Vista  
*UnBEElievable Pollination: Examining the Effects of Air Pollutants on Bumble Bee Pollination*

**ASM International**

*ASM Materials Education Foundation Award*

David Campbell 8th grade  
\$100  
Summit Middle Charter School Boulder  
*The Weakest Link: The Affect of Infill Pattern & Density on the Tensile Strength of a 3D-Printed Part*  
Kathryn Broderius 11th grade  
\$150  
Greeley West High School Greeley  
*Metals in the Fight Against Bacteria*

**Biomedical Engineering Society  
Colorado State University Chapter**

*Excellence in Biomedical Engineering Award*

Inbha Roshan Raguraman 7th grade  
Bluetooth Speaker, BMES 2019 T-shirt, swag from the School of Biomedical Engineering at CSU  
Discovery Canyon Campus Middle Colorado Springs  
*D-Watch: Smart Tracker for Vitamin-D*

**Biophysical Society**  
*Biophysics Award*

Anudeep Golla  
certificate, \$100  
Fairview High School  
*Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site*

11th grade  
Boulder

**Colorado Association of Science Teachers**  
*CAST Award*

Benjamin Homan  
\$100  
Monument Charter Academy  
*Does Pressure Affect Carbon Dioxide Absorption by Polyethyleneimine?*

8th grade  
Monument

Julian Kramer  
\$100  
Good Shepherd Catholic School  
*Growing with Color*

6th grade  
Denver

Calvin Ewing  
Olivia Cesarone  
Sarah Mellett  
\$100

12th grade  
12th grade  
12th grade

Rock Canyon High School  
*Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization*

Highlands Ranch

Camille Rawinski  
\$100  
Monte Vista High School  
*UnBEElievable Pollination: Examining the Effects of AirPollutants on Bumble Bee Pollination*

9th grade  
Monte Vista

**Colorado Biology Teachers' Association**  
*CBTA Best Biology Project*

Raeya Schrock  
certificate, \$50  
Arickaree School  
*Cow Sense: Does Water Quality Affect Intake?*

6th grade  
Anton

Lia Dino  
certificate, \$100  
Skinner Middle School  
*The Effect of Biosolid Sludge on the Growth Curve of Escherichia Coli and the Impact of Antibiotics*

8th grade  
Denver

Gabriel Lorenz  
certificate, \$50  
SkyView Academy  
*Optimizing Mangrove Root Structure by Using 3D Printed Mangrove Models to Prevent Hurricane Waves*

10th grade  
Highlands Ranch

Mikailah Feinman  
certificate, \$100  
Primero Jr/Sr High School  
*Repurposing Produced Gas Well Water as an Alternative Water Source for Agriculture Year III*

9th grade  
Weston

**Colorado BioScience Institute**  
*BioGENEius Challenge*

Spoorthy Reddy  
All-expense paid trip to compete at the International competition held in Philadelphia, PA June 2019 during the International BIO Convention  
Fairview High School  
*Determining the Cytotoxicity and Mechanism of Novel Piperlongumine Analogs in Acute Myeloid Leukemia*

12th grade  
Boulder

**Colorado Chemistry Teachers' Association**  
*CCTA Chemistry Award*

Kailas Cassidy  
\$100  
St. Columba Catholic School  
*Mummifying Hot Dogs*

6th grade  
Durango

Akber Shaikh  
\$100  
Cherry Creek High School  
*Degradation, Stabilization, and Delivery of Immune System Targeted Drugs*

10th grade  
Greenwood Village

**Colorado Dental Association**  
*CDA Excellence in Oral Health Award*

Teagan Archer  
\$100 gift card  
Mancos Middle School  
*Clean Teeth Candy*

6th grade  
Mancos

Edwin Bodoni  
\$100 gift card  
Cherry Creek High School  
*Bruxism: A Novel Diagnostic Approach - Part II*

12th grade  
Greenwood Village

**Colorado Earth System Science Collaborative**  
*Colorado ESS Best Data Use Award*

Logan Breyer  
bluetooth pocket weather meter  
Liberty School  
*The Pressure's On: Does Barometric Pressure Influence Calving?*

8th grade  
Joes

Skylar Gale  
bluetooth pocket weather meter  
Evergreen High School  
*Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma*

12th grade  
Evergreen

**Colorado Environmental Health Association**  
*Environmental Health Award*

Ethan Gavin  
framed certificate, \$75  
The Classical Academy  
*Shining a Light on Cross-Contamination*

8th grade  
Colorado Springs

Camille Rawinski  
framed certificate, \$150, invitation to exhibit at the CEHA Annual Educational Conference (valued at \$400)  
Monte Vista High School  
*UnBEElievable Pollination: Examining the Effects of Air Pollutants on Bumble Bee Pollination*

9th grade  
Monte Vista

## Colorado Foundation for Agriculture

### Jack Fenwick Award for Agricultural Science

Ava Warner 8th grade  
certificate, \$50  
Branson School Branson  
*Animal, Vegetable, Mineral*

Chyera Robert 7th grade  
certificate, \$50  
The Classical Academy Colorado Springs  
*People Love Fruit, But Do They Really Love Each Other?*

Camille Rawinski 9th grade  
certificate, \$50  
Monte Vista High School Monte Vista  
*UnBEElievable Pollination: Examining the Effects of Air  
Pollutants on Bumble Bee Pollination*

Tyson Lichty 12th grade  
certificate, \$50  
Liberty School Joes  
*Dry Distiller Grains: Ethanol By-Products as a Source of  
Fertilizer*

## Colorado Medical Society

### CMS Education Foundation Award

Willow Schulz 7th grade  
\$100, invitation to the winners and their parents to exhibit at the  
Colorado Medical Society Annual Meeting and attendance at  
the Presidential Inaugural Dinner with a paid overnight stay  
Ignacio Middle School Ignacio  
*Effective Communication to Adolescents About Vaping*

Demi Brown 12th grade  
Grace Hardwick 12th grade  
\$100, invitation to the winners and their parents to exhibit at the  
Colorado Medical Society Annual Meeting and attendance at  
the Presidential Inaugural Dinner with a paid overnight stay  
Monarch High School Louisville  
*A Method for Preventing Heart Failure by Switching  
Substrates to Strengthen Mitochondrial Function*

## Colorado Mineral Society

### Best Earth Science Award

Elizabeth Ingmire 6th grade  
\$35, mineral specimen, book, certificate  
Coal Ridge Middle School Firestone  
*Can Plants Grow on Mars?*

Owen Doherty 7th grade  
\$50, mineral specimen, book, certificate  
Branson School Branson  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods  
for Rangeland Soil Erosion Control*

Amber Michel 12th grade  
\$35, mineral specimen, book, certificate  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in  
the Alamosa River Drainage*

Skylar Gale 12th grade  
\$50, mineral specimen, book, certificate  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

## Colorado Mycological Society

### Excellence in Mycological Research Award

Emma Purvis 8th grade  
\$100, CMS membership for 2019, certificate  
Challenge School Denver  
*The Erosion Is Real: Comparing the Effectivity of Mycelium  
and Plant Roots on Soil Erosion*

## Colorado Native Plant Society

### Colorado Native Plants Award for Students

Hazel Cleaves 7th grade  
\$50  
St. Columba Catholic School Durango  
*Rooted*

Laura Zhang 12th grade  
Brooke Newell 12th grade  
\$50  
Monarch High School Louisville  
*Impact of *Rhinocyllus conicus* on the Native Thistle in the  
Colorado Front Range*

## Colorado Scientific Society

### Excellence in Geology Award

Alia Morris 7th grade  
\$50  
Frontier Academy Secondary School Greeley  
*Soil Liquefaction*

Lily Klapp 7th grade  
Kelsea Hall 7th grade  
\$75  
Lewis Palmer Elementary School Monument  
*Leaky Yellow Boy*

Skylar Gale 12th grade  
\$75  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

Amber Michel 12th grade  
\$100  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in  
the Alamosa River Drainage*

## Colorado State University

### College of Agricultural Sciences

#### Innovations in the Science of Agriculture Award

Jamie Hume 6th grade  
\$500  
Walsh Elementary School Walsh  
*The Grey Effect*

Kevin Yang 11th grade  
\$500  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*

**Colorado State University**

**Colorado Natural Heritage Program**

*Colorado Natural Heritage Program Conservation Award*

Madison Miller 8th grade  
summer field excursion to experience hands-on conservation biology in the field with all expenses paid  
Monte Vista Middle School Monte Vista  
*Fowl Play: How Different Types of Recreational "Play" Affects the Flush Response of Waterfowl*

**Colorado State University**

**Dept. of Biochemistry & Molecular Biology**

*Excellence in Biochemistry & Molecular Biology Award*

Anudeep Golla 11th grade  
certificate, \$100  
Fairview High School Boulder  
*Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site*

**Colorado State University**

**Department of Chemistry**

*Excellence in Chemistry Award*

Benjamin Homan 8th grade  
certificate, \$100  
Monument Charter Academy Monument  
*Does Pressure Affect Carbon Dioxide Absorption by Polyethyleneimine?*

Calvin Ewing 12th grade  
Olivia Cesarone 12th grade  
Sarah Mellett 12th grade  
certificate, \$100  
Rock Canyon High School Highlands Ranch  
*Efficacy of Triton X-100 as a Candidate for Whole Organ Decellularization*

**Colorado State University**

**Dept. of Horticulture & Landscape Architecture**

*Excellence in Horticulture Award*

Julian Kramer 6th grade  
\$100  
Good Shepherd Catholic School Denver  
*Growing with Color*

Grazia Novak 8th grade  
\$100  
Turner Middle School Berthoud  
*Growing with Greywater: Gross or Great?*

Gurleen Kaur 11th grade  
\$100  
Alamosa High School Alamosa  
*Detection of Compounds in the PVY Infected Phloem of Solanum Tuberosum Using GC-MS*

Aubrey Stevens 12th grade  
Jacob Carlson 12th grade  
\$100  
Rock Canyon High School Highlands Ranch  
*The Efficacy for Varying Methods for the Genetic Engineering of *I. purpurea* with the AtPCSI Gene*

**Colorado State University, Energy Institute**

*Energy Achievement Award*

Kevin Yang 11th grade  
certificate, \$250  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*

**Colorado Veterinary Medical Association**

*Veterinary Science Award*

Raeya Schrock 6th grade  
certificate, \$100  
Arickaree School Anton  
*Cow Sense: Does Water Quality Affect Intake?*

Sydnee Roth 12th grade  
certificate, \$100  
Liberty School Joes  
*The Future of Farrowing*

**Colorado's Electric Cooperatives**

*The Colorado EnergyWise Award*

Theodore Duarte 8th grade  
\$250  
Homyak PK-8 School Dacono  
*Life's a Breeze: What Wind Turbine Blade Shape & Angle Will Produce Energy Most Effectively?*

Sophia Markuson DiPrince 12th grade  
\$250  
Central High School Pueblo  
*Anaerobic Digestion of Food Waste Part 4: Does Temperature Affect the Production of Food Waste*

**Colorado-Wyoming Society of American**

**Foresters**

*Excellence in Forestry Research Award*

Hudson Kruse 8th grade  
\$200  
Home School Colorado Springs  
*The Influence of Drought and Frequent Wildfires on the Chaparral*

Kathryn Kummel 10th grade  
\$200  
Palmer High School Colorado Springs  
*Fractals & Catastrophic Bifurcation: Exploring Treeline Structure Using Drones and Math Models in R*

**Comstock Family**

*Heather Comstock Memorial Award*

Kathryn Broderius 11th grade  
\$200  
Greeley West High School Greeley  
*Metals in the Fight Against Bacteria*

### **Constant Family**

#### *Award for Excellence in Computer Science*

Luke Weber 8th grade  
certificate, \$100  
Flagstaff Charter Academy Longmont  
*Safe Ride*

Siddarth Ijju 11th grade  
certificate, \$200  
Cherry Creek High School Greenwood Village  
*Fast MRI: Reconstructing MR Images Using Undersampled  
K-Space and a GAN*

### **Fort Collins Conservation District**

#### *Conservation District Award*

Hudson Kruse 8th grade  
plaque, \$50  
Home School Colorado Springs  
*The Influence of Drought and Frequent Wildfires on the  
Chaparral*

12th grade  
plaque, \$100  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in  
the Alamosa River Drainage*

### **Frank Armbruster Foundation**

#### *Armbruster Memorial Award*

Augustus Miller 7th grade  
\$50  
Monte Vista Middle School Monte Vista  
*Device for the Ice!*

### **Geological Society of America**

#### *GSA Awards in Environmental Geology*

Owen Doherty 7th grade  
plaque, certificate, \$50 gift card, GSA items  
Branson School Branson  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods  
for Rangeland Soil Erosion Control*

Skylar Gale 12th grade  
plaque, certificate, \$75 gift card, GSA items  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

Jenna Salvat 12th grade  
plaque, certificate, \$100 gift card, GSA items  
Coronado High School Colorado Springs  
*A Geochemical and Petrographic Analysis of Metamorphic  
Lithologies Proximal to the CC&V Diatreme*

### **Gromko Family**

#### *Gerald Gromko Memorial Award*

Katelynn Salmon 12th grade  
Josh Nakka 11th grade  
\$150  
Palmer Ridge High School Monument  
*Engineering a Low-Cost, Portable Braille Display for  
Developing Countries*

### **Human Factors & Ergonomics Society**

#### **Rocky Mountain Chapter**

*Excellence in Human Factors & Ergonomics Award*  
Kai Morton 7th grade  
\$100  
The Classical Academy Colorado Springs  
*A Game for All Eyes*

### **Institute of Electrical & Electronics Engineer**

#### **High Plains Section**

#### *IEEE Award*

Thomas Ferrell 8th grade  
\$100 cash card  
Home School Durango  
*Homemade Air Quality Monitors Fast, Cheap and Out of  
Control*

Alyssa Keirn 11th grade  
\$150 cash card  
Rocky Mountain High School Fort Collins  
*Solar Powered UVC and Ozone-Based Decontaminator*

### **Koppa Research, LLC**

#### *Koppa Research's Einstein Award for Achievements in Modern Physics*

Annette Bechtolt 6th grade  
certificate, \$50  
St. Columba Catholic School Durango  
*Invisible Levitation*

Joy Ma 11th grade  
certificate, \$100  
Fairview High School Boulder  
*Nanoscale Optical Probing of Two-Dimensional  
Heterostructures Suspended on Nano-Slits*

### **Little Shop of Physics**

#### *Matthew McCausland Memorial Award*

Kyler Harbison 6th grade  
science equipment/instruments  
St. Columba Catholic School Durango  
*Magnetostatic*

Jared Ingmire 8th grade  
science equipment/instruments  
Imagine Charter School Firestone  
*Taking Flight*

Bridger Lynch 7th grade  
science equipment/instruments  
Yuma Middle School Yuma  
*Bow Knows*

Kevin Yang 11th grade  
science equipment/instruments  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced  
Film to Promote Photosynthetic Activity and Crop Production*

Logan Klein 12th grade  
science equipment/instruments  
Yuma High School Yuma  
*The Reliever: An Exercise in Port Protection*

Tate Schrock 9th grade  
science equipment/instruments  
Arickaree School Anton  
*Agriculture Soil Probe Rover*

### **Lockheed Martin**

#### *Lockheed Martin Aerospace Award*

David Campbell 8th grade  
\$50  
Summit Middle Charter School Boulder  
*The Weakest Link: The Affect of Infill Pattern & Density on the Tensile Strength of a 3D-Printed Part*

Matthew Anderson 9th grade  
\$100  
Cherry Creek High School Greenwood Village  
*Reduction of Aircraft Noise Via Landing Gear Surface Controls*

### **National Centers for Environmental Information**

#### *NCEI Award of Scientific Achievement*

Claire Heeley 8th grade  
certificate, cash award from anonymous donor  
Summit Middle Charter School Boulder  
*Predicting High Intensity Solar Flares*

### **National Renewable Energy Laboratory**

#### *NREL Energy Award*

Kevin Yang 11th grade  
\$100  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*

### **National Security Agency, Colorado Section**

#### *NSA Award*

Krithik Ramesh 11th grade  
\$50 (to be mailed)  
Cherry Creek High School Greenwood Village  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*

Michelle Ren 12th grade  
Julianna O'Clair 12th grade  
\$150 (to be mailed)  
Brush High School Brush  
*Interpreting Physical Quantities of Data from an Air-Gapped System*

Siddarth Ijju 11th grade  
\$300 (to be mailed)  
Cherry Creek High School Greenwood Village  
*Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN*

### **Platte River Power Authority**

#### *Platte River Power Authority Special Award for Energy Innovation and Efficiency*

Levi Archambault 7th grade  
\$100  
The Classical Academy Colorado Springs  
*This Will Blow You Away*

Kevin Yang 11th grade  
\$150  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*

#### *Platte River Power Authority Special Award for Environmental Responsibility*

Maxwell Benedict 7th grade  
\$100  
Grant Beacon Middle School Denver  
*The Effect of Air Pollution on Solar Panel Yield*  
Madeleine Nagle 11th grade  
\$150  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

### **Rocky Mountain Association of Geologists**

#### *Excellence in Earth Science Award*

Max Warnock 11th grade  
\$150  
Poudre Global Academy Fort Collins  
*Spatial Analysis of the Glaciers in Grand Teton National Park Between 1994 and 2015*

Skylar Gale 12th grade  
\$350  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater Injection in Oklahoma*

Jenna Salvat 12th grade  
\$500  
Coronado High School Colorado Springs  
*A Geochemical and Petrographic Analysis of Metamorphic Lithologies Proximal to the CC&V Diatreme*

### **Rocky Mountain Water Environment**

#### **Association**

#### *Water Research Award*

Alexandra Flint 8th grade  
certificate, \$400  
Peak to Peak Charter School Lafayette  
*Examining Electric Charges as a Method for Cleaning Microplastics from the Oceans*

Mikailah Feinman 9th grade  
certificate, \$200  
Primero Jr/Sr High School Weston  
*Repurposing Produced Gas Well Water as an Alternative Water Source for Agriculture Year III*

Amber Michel 12th grade  
certificate, \$400  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in the Alamosa River Drainage*

### **Science Toy Magic, LLC**

#### *Physics Classroom Demonstration Award*

Annette Bechtolt 6th grade  
\$50  
St. Columba Catholic School Durango  
*Invisible Levitation*



Nico Martinez 8th grade  
\$100  
Pueblo Academy of Arts Pueblo  
*Transforming a Compact Disc into a Gyroscope*

Katelynn Salmon 12th grade  
Josh Nakka 11th grade  
\$50  
Palmer Ridge High School Monument  
*Engineering a Low-Cost, Portable Braille Display for Developing Countries*

Hope Dannar 12th grade  
\$100  
University Schools Evans  
*Designing and Testing an Oscillator System for Pilot Wave Hydrodynamics*

### **Society for Mining, Metallurgy & Exploration Colorado Section**

*Excellence in Mineral Science & Engineering Award*  
Lily Klapp 7th grade  
Kelsea Hall 7th grade  
\$100, plaque  
Lewis Palmer Elementary School Monument  
*Leaky Yellow Boy*

Benjamin Homan 8th grade  
\$200, plaque  
Monument Charter Academy Monument  
*Does Pressure Affect Carbon Dioxide Absorption by Polyethyleneimine?*

Amber Michel 12th grade  
\$200, plaque  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in the Alamosa River Drainage*

Jenna Salvat 12th grade  
\$400, plaque  
Coronado High School Colorado Springs  
*A Geochemical and Petrographic Analysis of Metamorphic Lithologies Proximal to the CC&V Diatreme*

### **Society of Manufacturing Engineers Colorado Chapter 354**

#### *Andy Keller Memorial Award*

Nicholas Weimer 7th grade  
\$100, recognition by the local chapter  
Flagstaff Charter Academy Longmont  
*Brains to Brawn*

Alyssa Keirn 11th grade  
\$150, recognition by the local chapter  
Rocky Mountain High School Fort Collins  
*Solar Powered UVC and Ozone-Based Decontaminator*

Tate Schrock 9th grade  
\$200, recognition by the local chapter  
Arickaree School Anton  
*Agriculture Soil Probe Rover*

### **Society of Women Engineers Rocky Mountain Section SWE Award**

Amanda Castillo-Lopez 7th grade  
certificate, \$75  
Challenge School Denver  
*Grey Water Recycling System Using Arduinos*

Hailey Kressin 8th grade  
certificate, \$100  
The Classical Academy Colorado Springs  
*A Sixth Sense: Omni-Directional Presence Detection System*

Jasmine Li 11th grade  
certificate, \$75  
Fairview High School Boulder  
*The Future of Microrobots: Development of a Bio-inspired Synthetic Swarm Network*

Alyssa Keirn 11th grade  
certificate, \$100  
Rocky Mountain High School Fort Collins  
*Solar Powered UVC and Ozone-Based Decontaminator*

### **Soil & Water Conservation Society Colorado Chapter**

#### *Natural Resource Conservation Award*

Owen Doherty 7th grade  
certificate, \$100  
Branson School Branson  
*Blame It on the Rain: A Novel Use of Non-Mechanical Methods for Rangeland Soil Erosion Control*

Orion Pipersky 12th grade  
certificate, \$100  
Boulder High School Boulder  
*Initial Soil Testing of a Soil Binding Fertilizer*

### **SPIE, the international society for optics and photonics**

#### *SPIE Optics and Photonics Award*

Julian Kramer 6th grade  
\$50  
Good Shepherd Catholic School Denver  
*Growing with Color*

Maxwell Benedict 7th grade  
\$100  
Grant Beacon Middle School Denver  
*The Effect of Air Pollution on Solar Panel Yield*

Xander Duvall 8th grade  
\$150  
Thomas MacLaren School Colorado Springs  
*Variable Scintillation Frequencies in Muon Detection*

Krithik Ramesh 11th grade  
\$100  
Cherry Creek High School Greenwood Village  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*

Siddarth Ijju 11th grade  
\$150  
Cherry Creek High School Greenwood Village  
*Fast MRI: Reconstructing MR Images Using Undersampled  
K-Space and a GAN*

Joy Ma 11th grade  
\$250  
Fairview High School Boulder  
*Nanoscale Optical Probing of Two-Dimensional  
Heterostructures Suspended on Nano-Slits*

### **Trout Unlimited**

#### *Trout Unlimited River Conservation Award*

Spencer Eschallier 6th grade  
\$75  
Mancos Middle School Mancos  
*pHire Science*

Lily Klapp 7th grade  
Kelsea Hall 7th grade  
\$125  
Lewis Palmer Elementary School Monument  
*Leaky Yellow Boy*

Amber Michel 12th grade  
\$200  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in  
the Alamosa River Drainage*

### **United States Department of Commerce**

#### *Award for Excellence in Science and Engineering*

Molly Nehring 12th grade  
plaque, alternate for summer internship at DOC labs in Boulder  
Monte Vista High School Monte Vista  
*Galactic Outcasts: A Simulation and Study of the Interaction  
Between Stars Within Globular Clusters*

Skylar Gale 12th grade  
plaque, summer internship at the DOC labs in Boulder  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

### **United States Geological Survey**

#### *USGS Excellence in Geological Research Award*

Alexandra Flint 8th grade  
reference book, mineral specimen  
Peak to Peak Charter School Lafayette  
*Examining Electric Charges as a Method for Cleaning  
Microplastics from the Oceans*

Skylar Gale 12th grade  
reference book, mineral specimen  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

### **University of Northern Colorado**

#### *Mathematics and Science Teaching Institute Award*

Amanda Castillo-Lopez 7th grade  
\$50  
Challenge School Denver  
*Grey Water Recycling System Using Arduinos*

Sara Nehring 10th grade  
\$50  
Monte Vista High School Monte Vista  
*Pattern Recognition Using Neural Networks in the MATLAB  
Programming Environment*

### **Van Gorp Family**

#### *Dan Van Gorp Memorial Award*

Diamond Salas 10th grade  
certificate, \$100  
Northridge High School Greeley  
*Now You See Me, Now You Don't: The Effect of Artificial Light  
on Crickets*

### **Wilkins Family**

#### *Young Entrepreneur's Award*

Sara Nehring 10th grade  
\$500  
Monte Vista High School Monte Vista  
*Pattern Recognition Using Neural Networks in the MATLAB  
Programming Environment*

### **Wojtaszek Family**

#### *Paul Wojtaszek Memorial Award*

Megan Hupka 12th grade  
Tabitha Samuel 12th grade  
Seth Rohr 12th grade  
\$200 (The winning team or individual is asked to send a letter  
of appreciation to Mary Wojtaszek, the mother of Paul  
Wojtaszek.)  
Rock Canyon High School Highlands Ranch  
*Piracetam's Effect on Beta-Amyloid Plaque Formation and  
Paralysis on an Alzheimer's Model C. elegans*

### **Women in Physics**

#### **Colorado State University Chapter**

#### *Promising Young Woman in Science Award*

Annette Bechtolt 6th grade  
certificate, science gift bag  
St. Columba Catholic School Durango  
*Invisible Levitation*

### **Zonta Club of Boulder County**

#### *Amelia Earhart Award*

Claire Heeley 8th grade  
certificate, \$100  
Summit Middle Charter School Boulder  
*Predicting High Intensity Solar Flares*

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### **Scholarships**

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### **Adams State University**

#### *ASU Porter Scholarships*

Jenna Salvat 12th grade  
scholarships to attend ASU valued at \$5,000  
Coronado High School Colorado Springs  
*A Geochemical and Petrographic Analysis of Metamorphic  
Lithologies Proximal to the CC&V Diatreme*

Mark Bloomfield 11th grade  
scholarships to attend ASU valued at \$5,000  
Coronado High School Colorado Springs  
*Charged Up: Testing Lithium Ion Battery Performance Using a Raspberry Pi Load Cell*

Madeleine Nagle 11th grade  
scholarships to attend ASU valued at \$5,000  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

Megan Starkey 11th grade  
scholarships to attend ASU valued at \$5,000  
Greeley West High School Greeley  
*Scrambled*

Emily Idler 11th grade  
scholarships to attend ASU valued at \$5,000  
Liberty School Joes  
*Blood Clotting Agent: The Development of an Improved Blood Clotting Agent*

Amanda Avila 12th grade  
Trinady Gonzales 12th grade  
scholarships to attend ASU valued at \$5,000  
Monte Vista High School Monte Vista  
*Let There Be Light: The Effects of UV Rays on Bacteria Growth in Foods*

### Colorado School of Mines

#### Colorado School of Mines CSEF Scholarships

Sarah Tang 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Fairview High School Boulder  
*Ground-Based Followups of TESS Exoplanet Candidates*

Kevin Yang 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Fairview High School Boulder  
*From Greenhouse to Redhouse: Development of an Advanced Film to Promote Photosynthetic Activity and Crop Production*

Alyssa Keirn 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Rocky Mountain High School Fort Collins  
*Solar Powered UVC and Ozone-Based Decontaminator*

Madeleine Nagle 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Fairview High School Boulder  
*Radiation at Rocky Flats National Wildlife Refuge*

Siddarth Ijju 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Cherry Creek High School Greenwood Village  
*Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN*

Evelyn Bodoni 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Cherry Creek High School Greenwood Village  
*The Role of NGAL as a Biomarker for Acute Kidney Injury*

Joy Ma 11th grade  
\$1,000 Mines scholarship, renewable for up to 3 additional years for use toward undergraduate degree at Colorado School of Mines  
Fairview High School Boulder  
*Nanoscale Optical Probing of Two-Dimensional Heterostructures Suspended on Nano-Slits*

### Colorado State University, Fort Collins

#### CSU-Fort Collins Scholarships

Nariah Smith 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
La Junta High School La Junta  
*Pigeon Training: Sociability, Innovation, and Ability to Learn*

Shreya Naik 11th grade  
Callandra Peters 12th grade  
Kezia Dick 12th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Rock Canyon High School Highlands Ranch  
*Effect of TBI on Learning and Memory in *D. melanogaster* and the Efficacy of Piracetam as a Treatment*

Charles Wang 10th grade  
Suhaas Narayanan 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Fossil Ridge HS & Fort Collins HS Fort Collins  
*A Novel Synthesis of 3,5-Disubstituted  $\Delta^2$ -Isoxazoline as a Precursor to Various Diabetic Medications*

Max Warnock 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Poudre Global Academy Fort Collins  
*Spatial Analysis of the Glaciers in Grand Teton National Park Between 1994 and 2015*

Krithik Ramesh 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Cherry Creek High School Greenwood Village  
*Utilizing Computer Vision Systems and Machine Learning to Develop a Live Time Navigational and Surgical Aid for Spinal Reconstructions*

Sara Nehring 10th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Monte Vista High School Monte Vista  
*Pattern Recognition Using Neural Networks in the MATLAB Programming Environment*

Shreya Shubhangi 12th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Rock Canyon High School Lone Tree  
*Effect of Maternal Weight on Insulin Sensitivity in Infant Umbilical Cord Mesenchymal Stem Cells*

Anudeep Golla 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Fairview High School Boulder  
*Discovery of Hidden Gene Regulators: A Novel Machine Learning Approach to Transcriptional Pause Site*

Joy Ma 11th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
Fairview High School Boulder  
*Nanoscale Optical Probing of Two-Dimensional Heterostructures Suspended on Nano-Slits*

Gabriel Lorenz 10th grade  
\$1,000 scholarships to attend CSU, renewable for up to 3 additional years  
SkyView Academy Highlands Ranch  
*Optimizing Mangrove Root Structure by Using 3D Printed Mangrove Models to Prevent Hurricane Waves*

**Colorado State University, Pueblo**  
*CSU-Pueblo Scholarship*

Rithwik Mylavarapu 11th grade  
\$1,000 renewable scholarship to CSU, Pueblo  
Fairview High School Boulder  
*Leveraging Satellite Imagery and Convolutional Neural Networks to Classify Road Surface Conditions*

**Intel Foundation**  
*Ryan Patterson Scholarship*

Molly Nehring 12th grade  
certificate, \$2,000 non-renewable scholarship to the university/college of student's choice  
Monte Vista High School Monte Vista  
*Galactic Outcasts: A Simulation and Study of the Interaction Between Stars Within Globular Clusters*

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**SSP**

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**American Psychological Association**  
*Outstanding Achievement in Psychological Sciences Award*

Daniel Strevett 7th grade  
certificate  
The Classical Academy Colorado Springs  
*Sick of Stress*

Amada Quintana 9th grade  
certificate  
Monte Vista High School Monte Vista  
*The Effects of Stress on Teenage Substance Use*

**ASM Material Education Foundation**  
*ASM Materials Science Award*

Kevin Lester 7th grade  
certificate  
The Classical Academy Colorado Springs  
*Cheap, But Durable Shingles*

Brylie Thompson 11th grade  
certificate  
Limon Schools Limon  
*Pure and Udder Strength: Casein Plastic*

**Association for Women Geoscientists**  
*Outstanding Achievement in Geosciences Award*

Serenity Foutz 8th grade  
certificate  
Ignacio Middle School Ignacio  
*Explanation of Land Reclamation*

Jenna Salvat 12th grade  
certificate  
Coronado High School Colorado Springs  
*A Geochemical and Petrographic Analysis of Metamorphic Lithologies Proximal to the CC&V Diatreme*

**Broadcom**

*Broadcom MASTERS Nomination*

Edie Simecek 8th grade  
nomination to enter the 2018 Broadcom MASTERS competition for middle school students  
Summit Middle Charter School Boulder  
*Buzz Pollination: The Relationship Between Frequency and Pollen*

Marissa Martinez 8th grade  
nomination to enter the 2018 Broadcom MASTERS competition for middle school students  
Monte Vista Middle School Monte Vista  
*Imagine the Perfect Title!*

Benjamin Homan 8th grade  
nomination to enter the 2018 Broadcom MASTERS competition for middle school students  
Monument Charter Academy Monument  
*Does Pressure Affect Carbon Dioxide Absorption by Polyethyleneimine?*

Samantha Cerniglia 7th grade  
nomination to enter the 2018 Broadcom MASTERS competition for middle school students  
The Classical Academy Colorado Springs  
*Shields Up: Wilson Cloud Chamber Study of High Energy Subatomic-Particle Shield Materials*

Michael Wu 7th grade  
nomination to enter the 2018 Broadcom MASTERS competition for middle school students  
The Classical Academy Colorado Springs  
*LED Lights: Hero or Zero*

Amanda Castillo-Lopez nomination to enter the 2018 Broadcom MASTERS competition for middle school students Challenge School <i>Grey Water Recycling System Using Arduinos</i>	7th grade   Denver	Abigail Ross nomination to enter the 2018 Broadcom MASTERS competition for middle school students Lamar Middle School <i>Detecting Flares</i>	8th grade   Lamar
Hudson Kruse nomination to enter the 2018 Broadcom MASTERS competition for middle school students Home School <i>The Influence of Drought and Frequent Wildfires on the Chaparral</i>	8th grade   Colorado Springs	Theodore Duarte nomination to enter the 2018 Broadcom MASTERS competition for middle school students Homyak PK-8 School <i>Life's a Breeze: What Wind Turbine Blade Shape &amp; Angle Will Produce Energy Most Effectively?</i>	8th grade   Dacono
Henry Westfall nomination to enter the 2018 Broadcom MASTERS competition for middle school students Summit Middle Charter School <i>Predicting Influenza Genome Mutations Using Neural Networks</i>	8th grade   Boulder	Austin Cantor nomination to enter the 2018 Broadcom MASTERS competition for middle school students The Classical Academy <i>Hail! No!</i>	8th grade   Colorado Springs
Hailey Kressin nomination to enter the 2018 Broadcom MASTERS competition for middle school students The Classical Academy <i>A Sixth Sense: Omni-Directional Presence Detection System</i>	8th grade   Colorado Springs	Luke Nielsen nomination to enter the 2018 Broadcom MASTERS competition for middle school students The Classical Academy <i>Delta Irrigation</i>	8th grade   Colorado Springs
Tori Plett nomination to enter the 2018 Broadcom MASTERS competition for middle school students The Classical Academy <i>Germ on a Roll</i>	7th grade   Colorado Springs	Luke Weber nomination to enter the 2018 Broadcom MASTERS competition for middle school students Flagstaff Charter Academy <i>Safe Ride</i>	8th grade   Longmont
Xander Duvall nomination to enter the 2018 Broadcom MASTERS competition for middle school students Thomas MacLaren School <i>Variable Scintillation Frequencies in Muon Detection</i>	8th grade   Colorado Springs	Ava Steger nomination to enter the 2018 Broadcom MASTERS competition for middle school students Webber Middle School <i>Agensis of the Corpus Callosum, and Epilepsy, and the Effectiveness of Anticonvulsant Drugs</i>	8th grade   Fort Collins
Tyler Kester nomination to enter the 2018 Broadcom MASTERS competition for middle school students Sierra Grande Jr/Sr High School <i>Little Marvel: A Comparative Study of Plant Growth</i>	7th grade   Blanca	Mary Ryan nomination to enter the 2018 Broadcom MASTERS competition for middle school students St. Mary Catholic School <i>Bacteria Be Gone</i>	7th grade   Greeley
Madison Miller nomination to enter the 2018 Broadcom MASTERS competition for middle school students Monte Vista Middle School <i>Fowl Play: How Different Types of Recreational "Play" Affects the Flush Response of Waterfowl</i>	8th grade   Monte Vista	Annette Bechtolt nomination to enter the 2018 Broadcom MASTERS competition for middle school students St. Columba Catholic School <i>Invisible Levitation</i>	6th grade   Durango
Brakelle Westphal nomination to enter the 2018 Broadcom MASTERS competition for middle school students Springfield Jr/Sr High School <i>How Distracted Do You Drive?</i>	8th grade   Springfield	Hazel Cleaves nomination to enter the 2018 Broadcom MASTERS competition for middle school students St. Columba Catholic School <i>Rooted</i>	7th grade   Durango
Courtney Croom nomination to enter the 2018 Broadcom MASTERS competition for middle school students The Classical Academy <i>The Separation of DNA by Applying Thermal Heat</i>	8th grade   Colorado Springs		

### Intel Corporation

#### *Intel Excellence in Computer Science Award*

Siddarth Ijju \$200 (to be mailed), certificate Cherry Creek High School <i>Fast MRI: Reconstructing MR Images Using Undersampled K-Space and a GAN</i>	11th grade   Greenwood Village
Sara Nehring \$200 (to be mailed), certificate	10th grade

Monte Vista High School Monte Vista  
*Pattern Recognition Using Neural Networks in the MATLAB  
Programming Environment*

### **Lemelson Foundation**

#### *Lemelson Early Inventor Prize*

Nicholas Weimer 7th grade  
certificate, \$100 (to be mailed)  
Flagstaff Charter Academy Longmont  
*Brains to Brawn*

### **Mu Alpha Theta**

#### *Outstanding Achievement in Mathematics*

William Hofgard 11th grade  
certificate  
Fairview High School Boulder  
*Optimal Switching Between Egocentric and Geocentric  
Navigation for Scarabaeus lamarcki*

Austen Mazenko 11th grade  
certificate  
Cherry Creek High School Greenwood Village  
*Cop Strategy and Cop Number Analysis of k-Regular, Fully  
Active Cops and Robber Games*

### **NASA**

#### *NASA Earth System Science Award*

Samantha Cerniglia 7th grade  
certificate  
The Classical Academy Colorado Springs  
*Shields Up: Wilson Cloud Chamber Study of High Energy  
Subatomic-Particle Shield Materials*

Max Warnock 11th grade  
certificate  
Poudre Global Academy Fort Collins  
*Spatial Analysis of the Glaciers in Grand Teton National Park  
Between 1994 and 2015*

### **National Oceanic and Atmospheric**

#### **Administration**

#### *Taking the Pulse of the Planet Award*

Hudson Kruse 8th grade  
certificate, medal  
Home School Colorado Springs  
*The Influence of Drought and Frequent Wildfires on the  
Chaparral*

Skylar Gale 12th grade  
certificate, medal  
Evergreen High School Evergreen  
*Relationships Between Induced Seismicity and Saltwater  
Injection in Oklahoma*

### **Ricoh**

#### *Ricoh Sustainability Development Award*

Cassidy Huber 6th grade  
certificate  
St. Columba Catholic School Durango  
*Hydroponic vs. Soil: An Experiment in Plant Growth*

Mikailah Feinman 9th grade  
certificate  
Primero Jr/Sr High School Weston  
*Repurposing Produced Gas Well Water as an Alternative  
Water Source for Agriculture Year III*

### **Society for In Vitro Biology**

#### *Outstanding Achievement in In Vitro Biology Award*

Anudeep Golla 11th grade  
certificate  
Fairview High School Boulder  
*Discovery of Hidden Gene Regulators: A Novel Machine  
Learning Approach to Transcriptional Pause Site*

Evelyn Bodoni 11th grade  
certificate  
Cherry Creek High School Greenwood Village  
*The Role of NGAL as a Biomarker for Acute Kidney Injury*

### **United States Metric Association**

#### *Outstanding Achievement in the Use of the International System Award*

Hailey Kressin 8th grade  
certificate  
The Classical Academy Colorado Springs  
*A Sixth Sense: Omni-Directional Presence Detection System*

Nicholas Entin 12th grade  
certificate  
Peak to Peak Charter School Lafayette  
*Variability in the Thermosphere of Mars*

### **Water Environment Federation**

#### *Stockholm Junior Water Prize*

Ian Gowen 9th grade  
certificate, nomination to enter the SJWP state competition  
Pueblo County High School Pueblo  
*Testing the Effectiveness of Electrolysis Being Used to Split  
Carbon Dioxide Molecules*

Mohamed Ibrahim 9th grade  
certificate, nomination to enter the SJWP state competition  
Wiggins Jr/Sr High School Wiggins  
*Microbial Fuel Cells in the Initiation of Electrolysis in River  
Water*

Amber Michel 12th grade  
certificate, nomination to enter the SJWP state competition  
Monte Vista High School Monte Vista  
*Rock On: Limestone's Potential to Improve Water Quality in  
the Alamosa River Drainage*

Paul Brophy 12th grade  
certificate, nomination to enter the SJWP state competition  
Yuma High School Yuma  
*Effects of Produced Water on Wisconsin Fast Plants*

Mikailah Feinman 9th grade  
certificate, nomination to enter the SJWP state competition  
Primero Jr/Sr High School Weston  
*Repurposing Produced Gas Well Water as an Alternative  
Water Source for Agriculture Year III*

Nathan Nash 9th grade  
certificate, nomination to enter the SJWP state competition  
Primer Jr/Sr High School Weston  
*Testing Water pH Up/Downstream from Mines to Determine If  
They Are Changing the Purgatoire*

**Yale Science & Engineering Association**  
*Outstanding Achievement in Science & Engineering  
Award*

Siddarth Ijju 11th grade  
certificate  
Cherry Creek High School Greenwood Village  
*Fast MRI: Reconstructing MR Images Using Undersampled  
K-Space and a GAN*

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**Teacher**

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*Doug Steward Memorial Award*

Yajaira Fuentes Tauber  
certificate. \$50  
Northridge High School Greeley

Annette Humphrey  
certificate. \$50  
Good Shepherd Catholic School Denver

Shawndra Fordham  
certificate. \$50  
Rock Canyon High School Highlands Ranch

*CSEF Teacher of the Year Award*

Annette Humphrey  
\$3,000, plaque  
Good Shepherd Catholic School Denver