

Colorado Science & Engineering Fair Press Release

Congratulations to all of the students who participated in the virtual CSEF this year! I am so happy that we were able to make that work for you and let's hope we can gather in person next April!

In this press release are the grand award winners (previously announced). As a reminder, the judges in each of the 12 categories and 2 divisions were allowed to award 1st, 2nd, 3rd and up to 2 Honorable Mentions. The awards students receive (per project) for these are:

1st - \$225; certificate; blue ribboned CSEF medallion

2nd - \$125; certificate; red ribboned CSEF medallion

3rd - \$75; certificate; white ribboned CSEF medallion

Honorable Mention – certificate; HM ribbon

From the 1st place winners in each category, the judging captains selected a 1st, 2nd and 3rd place Best-of-CSEF winners. These students (per project) received an additional cash amount as listed above for the respective place, a certificate, and a plaque. The Senior Division winners were also encouraged to submit their projects to the Regeneron ISEF to be published in their online abstract database, even though the competition was cancelled for this year.

Also in this press release is the list of special award winners for the following awards:

- Junior & Senior Division Technical Writing Award
- US Navy & Marine Corp Awards
- American Statistical Association Awards
- US Department of Commerce Award
- American Meteorological Awards
- American Psychological Association Awards
- ASM Materials Education Foundation Awards
- Association for Women Geoscientists Awards
- Lemelson Foundation Award
- Mu Alpha Theta Awards
- NASA Awards
- NOAA Awards
- Ricoh USA Awards
- Society for In Vitro Biology Awards
- US Agency for International Development Awards
- US Metric Association Awards
- Water Environment Federation Awards
- Yale Science & Engineering Association Award

Also included are the official Broadcom MASTERS competition nominations, which go to all of the 1st and 2nd place junior division category winners. This year, however, Broadcom has extended the nominations to all of our middle school participants. So while only the 1st and 2nd place category winners will receive the Broadcom nomination packets, I will be sending instructions to all of our 6th, 7th and 8th grade participants and encourage them to complete the nomination process by the June deadline.

We are also proud to still be able to award the CSEF Teacher of the Year! This year we had 3 outstanding teachers nominated: Yajaira Fentes-Tauber from Northridge High School in Greeley; Paul Strode from Fairview High School in Boulder and Marguerite Yowel from Genoa-Hugo School in Hugo. Each of the teachers will receive a certificate and \$75 Doug Steward Memorial Teacher Award and the winner will receive a grant to their school as well as a plaque.

This year's CSEF Teacher of the Year goes to:

Marguerite Yowell from Genoa-Hugo School

The nominators had this to say about Mrs. Yowell:

- Marguerite's special passion is the biological sciences and she is a very active member of the Colorado Biology Teachers Association and has supported their vision by participating in numerous teacher workshops, acting as an association officer and judging at CSEF for special awards sponsored by CBTA. I am a 2016 graduate of Genoa Hugo School and I had the pleasure of having Mrs. Yowell as a science teacher throughout my high school years. She goes above and beyond to ensure that all of her students reach their potential and I owe much of my success to her.
- As my mentor, Mrs. Yowell has gone above and beyond to assist me in succeeding. She has provided me with a plethora of materials to organize my classroom and has helped me create a strong management plan. She has also always been available "on the fly" if I needed assistance.
- As a science teacher in a small, rural school, she has consistently provided quality instruction in multiple areas, including Physical Science, Biology, Chemistry, Physics, Geology and Environmental Science. Mrs. Yowell is organized, thorough and innovative in her teaching methods, always striving to improve the content and delivery for her students.

2020 Colorado Science and Engineering Fair

Grand Awards Press Release

Junior Division Animal Sciences

First Place

Deena Safiulla 8th grade
The Mightiest Creatures of All
Challenge School Denver

Second Place

Tatum Duvall 6th grade
A Study on the Prevalence of Salmonella in the Saliva of Vizsla Dogs Fed Raw vs. Cooked Diet
Thomas MacLaren School Colorado Springs

Third Place

Annette Bechtolt 7th grade
Stifle Joint Replacement in Equines
St. Columba Catholic School Durango

Honorable Mention

Bonnie Koehn 8th grade
SandRid: Does It Really Rid Sand?
Cardinal Community Academy Keenesburg

Senior Division Animal Sciences

First Place

Madison Miller 9th grade
Whoa! You're Stressing Me Out! The Effects of Transportation on a Horse's Stress Levels
Monte Vista High School Monte Vista

Second Place

Anna Meunier 11th grade
Olivia Gibson 11th grade
Drosophila melanogaster as a Model Organism for CBD Research as Indicated by Anxious Behavior
Rock Canyon High School Highlands Ranch

Third Place

Blaine Gillespie 11th grade
Effect of Different Concentrations of Cannabidiol (CBD) on Terrestrial Snails
Monte Vista High School Monte Vista

Junior Division Behavioral & Social Sciences

First Place

Julianne Vega 6th grade
Who's Got the Upper Hand?
Dolores Elementary School Dolores

Second Place

Kelly Young 8th grade
Multitasking in the Brain
Summit Middle Charter School Boulder

Third Place

Malaika Burkholder 8th grade
Mental Music
St. John the Evangelist Catholic School Loveland

Honorable Mention

Dakota Cheesman 8th grade
Case of Mistaken Identity
Bromley East Charter School Brighton

Honorable Mention

Aeneas McBrayer 7th grade
Misperceptions
St. Columba Catholic School Durango

Senior Division Behavioral & Social Sciences

First Place

Sierra Zeller 11th grade
Helena Harezlak 11th grade
Stressmap: The Effect of a Coordinated Exam Schedule on Student Stress
Fairview High School Boulder

Second Place

Ethan Gavin 9th grade
Analyzing the Effects of Micro-Sleep on Adolescent Brains Correlated to the Amount of Sleep Received
The Classical Academy Colorado Springs

Third Place

Lilly Figueroa 9th grade
Ethical Responsibilities in Relation to Human-Pig Chimeras
Mancos High School Mancos

Honorable Mention

Reese Titensor 11th grade
Reagan Oates 11th grade
Identifying the Most Prevalent Sources of Stress in Adolescent Teens at Rock Canyon High School
Rock Canyon High School Highlands Ranch

Junior Division Chemistry & Biochemistry

First Place

Anjana Radha 8th grade
Coffee: An Amylase Activator or Inhibitor?
Peak to Peak Charter School Lafayette

Second Place

Bradin Gurule 6th grade
Clean Cents
St. Columba Catholic School Durango

Third Place

Moriah Ashley 8th grade
Oh Burn!
Ignacio Middle School Ignacio

Honorable Mention

Emma Sewell 7th grade
The Heat Is On
Sargent Jr/Sr High School Monte Vista

Senior Division
Chemistry & Biochemistry

First Place

Charles Wang 11th grade
Making AI Smarter: A Novel Approach to Creating a New Generation of Smart Chemical Sensors
Fossil Ridge High School Fort Collins

Second Place

Kylie Guiles 11th grade
Creating Crosslinking Compounds to Cure Cancer
Mancos High School Mancos

Third Place

Ana Barovic 12th grade
The Effect of Light on Black Tea
Colorado Springs Early Colleges Colorado Springs

Honorable Mention

Sophia Westerkamp 12th grade
Carlina Wharton-Bucher 12th grade
Three Dimensional Surface Models: An Innovative Method of Thermodynamics Education
Monarch High School Louisville

Honorable Mention

Chinmay Jayanty 10th grade
Pure or Impure: Rapid Test for Adulteration in Milk-Part 2
Sargent Jr/Sr High School Monte Vista

Junior Division
Earth & Space Sciences

First Place

Samantha Schaefer 8th grade
Cactus, Tree, or Flower . . . Which Has More CO2 Reduction Power
The Classical Academy Colorado Springs

Second Place

Averi Ulibarri 8th grade
Schoolyard Resistivity: What Lies Beneath?
St. John the Evangelist Catholic School Loveland

Third Place

Benjamin Sundheim 7th grade
How Hot Are Your Rocks?
St John the Evangelist Catholic School Loveland

Honorable Mention

Angelina Foutz 7th grade
Hemp Hemp Hooray
St. Columba Catholic School Durango

Senior Division
Earth & Space Sciences

First Place

Sarah Tang 12th grade
Orbit Determination and Projection of Potentially Hazardous Asteroid 12538 (1998 OH)
Fairview High School Boulder

Second Place

Rory Sweedler 12th grade
Investigating One of Colorado's Last Brontotheres
Monarch High School Louisville

Third Place

Leah Clayton 12th grade
Climate Is Changing & Permafrost Is Thawing
Evergreen High School Evergreen

Honorable Mention

Max Warnock 12th grade
Gravitational Field Mapping of the Bellvue Dome Fault with a Pendulum
PSD Global Academy Fort Collins

Honorable Mention

Kathryn Kummel 11th grade
Investigating Urban Heat Islands Using Mathematical Models, Satellite Data, and On-Site Measurements
Palmer High School Colorado Springs

Junior Division
Energy

First Place

Megan Wagner 8th grade
Investigation of Electrode Materials for Batteries
Peak to Peak Charter School Lafayette

Second Place

Braeleigh MacAskill 7th grade
Raise the Roof
Holy Family Catholic School Grand Junction

Third Place

Diego Gutierrez- 7th grade
Turning Heat into Electricity
Escuela De Guadalupe Denver

Senior Division
Energy

First Place

Julia Warnock 10th grade
Biomimetic Screen-Printed Photoanodes in Dye-Sensitized Solar Cells
PSD Global Academy Fort Collins

Second Place

Rithwik Mylavarapu 12th grade
Utilizing Deep Learning and Edge Cloud Computing for Efficient Road Surface Condition Classification
Fairview High School Boulder

Third Place

Jasmine Li 12th grade
Applying a Novel Hot-Casting Technique to Increase Perovskite Solar Cell Stability & Efficiency
Fairview High School Boulder

Honorable Mention

Mohamed Ibrahim 10th grade
Utilizing an Alkali Catalyst to Help Identify Alternative Feedstocks in Biodiesel Synthesis
Wiggins Jr/Sr High School Wiggins

Junior Division
Engineering

First Place

Rithvik Ijju 8th grade
Neuroplasticity: Enabling Stroke Patients to Repair Motor Skills by Imitating Motion Between Hands
Challenge School Denver

Second Place

Genevieve Carter 8th grade
Effect of Tool Path on Strength of 3D Printed Parts
Home School Lafayette

Third Place

Nathaniel Ellis 8th grade
Human Biomechatronics: Strength Augmentation and Improving Muscle Communication
Escalante Middle School Durango

Honorable Mention

Owen Doherty 8th grade
Brace Yourself: Pipe Fence Brace Design Stability Comparison
Brason School Branson

Honorable Mention

Oliver Knowles 6th grade
The Effects of Wing Camber on Air Turbulence
Frontier Academy Greeley

Senior Division
Engineering

First Place

Matthew Anderson 10th grade
Real-Time Seizure Forecasting for Epileptics on a Consumer Product
Cherry Creek High School Greenwood Village

Second Place

Siddharth Bharthulwar 11th grade
An Eye in the Fog: Development of a Novel Navigational and Visual Guidance System for Aircraft Operations in Low Visibility Conditions
Fairview High School Boulder

Third Place

Tate Schrock 10th grade
Autonomous Glider for Radiosonde Recovery
Arickaree School Anton

Honorable Mention

Max Witwer 11th grade
Alexander Grisak 11th grade
Designing an Affordable EKG Using Neural Networks for Computer Aided Diagnoses
Caprock Academy Grand Junction

Honorable Mention

Steven Lewis 10th grade
Cybersecurity Engineering for Aircraft
Pine Creek High School Colorado Springs

Junior Division
Environmental Sciences

First Place

Emily Hume 7th grade
Reduction of Nitrates in Drinking Water: What Works?
Walsh Jr/Sr High School Walsh

Second Place

Naomi Kruse 6th grade
I Speak for the Trees: The Use of Tree-Ring Analysis of Pinus ponderosa To Detect A Local Climate History
Schullandheim Colorado Springs

Third Place

Ezra Voth 8th grade
Measuring Water Flow Through Specific Placements of Rocks on Varying Slopes to Reduce Soil Attrition
The Classical Academy Colorado Springs

Honorable Mention

Cecelia Houseweart 8th grade
Temperatures Affect Microscopic Organisms
Hotchkiss K-8 School Hotchkiss

Honorable Mention

Liam Doherty 6th grade
Ice Ice Baby: A Comparison of Stock Tank Ice Formation Reduction Methods
Branson School Branson

Senior Division
Environmental Sciences

First Place

Andres Villa 11th grade
Analysis of Gambel's Oak Spread and Influence within Gunnison's Sage-grouse Habitat, Poncha Pass, CO
Monte Vista High School Monte Vista

Second Place

Mikailah Feinman 10th grade
Nathan Nash 10th grade
Shifting to a New Normal: A Statistical Analysis of Colorado's Observed Climatological Variability from 1895 to the Present
Primero Jr/Sr High School Weston

Third Place

Alden Kruse 11th grade
Mysteries in the Mud: Tracking Human Impact and Environmental Change By Heat Pressure Extracted Pond Sediment Core
Schullandheim Colorado Springs

Honorable Mention

Katy Sun 12th grade
Source Apportionment Using 7-Wavelength Aethalometer Measurements
Monarch High School Louisville

Honorable Mention

Estelle Brewer 12th grade
Cody Martin 12th grade
Beef Cattle Methane Emissions in Feedlots: A Sequestration Plan Utilizing Pressure Swing Adsorption
Nederland Middle-Senior High School Nederland

Junior Division
Mathematics & Computer Sciences

First Place

Margaret Arthur 8th grade
*Creating More Efficient Neural Networks Used to Find
Exoplanets Using SVD and Compression Techniques*
Summit Middle Charter School Boulder

Second Place

Sam Forsberg 8th grade
From Saddness to Gladness!
Good Shepherd Catholic School Denver

Third Place

Nathan Yang 8th grade
*Prioritization of Type 2 Diabetes Genetic Risk Factors Based
on Functional Relevance*
Challenge School Denver

Honorable Mention

Kai Morton 8th grade
Chemical Problem? Chemical Solution.
The Classical Academy Colorado Springs

Honorable Mention

Shurya Hooda 7th grade
Abhinav Krishna 7th grade
*You Sunk My Battleship! Examining Probability Density in
Battleship*
Challenge School Denver

Senior Division
Mathematics & Computer Sciences

First Place

Siddarth Ijju 12th grade
*Predicting the Onset of Alzheimer's Disease Using Graph
Neural Networks and Diffusion Tensor Imaging*
Cherry Creek High School Greenwood Village

Second Place

Sara Nehring 11th grade
Predicting Geomagnetic Storms Using Artificial Intelligence
Monte Vista High School Monte Vista

Third Place

Austen Mazonko 12th grade
*Feasibility of Determining Markov Model Dynamics from
Equilibria*
Cherry Creek High School Greenwood Village

Honorable Mention

Mikyla Bowen 12th grade
*Applying Machine Learning Algorithms for Classification
Using Breast Cancer Data Research Binder*
Northridge High School Greeley

Honorable Mention

Edward Wawrzynek 10th grade
*A Compiler Supporting the Differing Syntactic Representation
of Programs*
Fairview High School Boulder

Junior Division
Medicine & Health

First Place

Geo Raguraman 8th grade
RUN For Your LIFE
Discovery Canyon Campus Colorado Springs

Second Place

Cedar Wine 8th grade
Devin Farahani 7th grade
*The Purr-fect Pet: The Relationship Between Pets and Human
Blood Pressure*
Friends Middle School Boulder

Third Place

Joshua Ho 8th grade
Here Comes the Sun Run!!!
Summit Middle Charter School Boulder

Honorable Mention

Asha Thompson 6th grade
Rub-a-Dub-Dub-Apple in the Tub
Limon Schools Limon

Honorable Mention

Christopher Wood 7th grade
Bug Off!
Flagstaff Academy Longmont

Senior Division
Medicine & Health

First Place

Cooper Hanley 11th grade
Liam Barnes 12th grade
Cosmo Mitchell 12th grade
*Applying Gold Nanoparticles to Denature Proteins
Characteristic of Alzheimer's Disease*
Monarch High School Louisville

Second Place

Evelyn Bodoni 12th grade
*Novel Preventative Strategies for Acute Kidney Injury &
Chronic Kidney Disease*
Cherry Creek High School Greenwood Village

Third Place

Krithik Ramesh 12th grade
*Determining Gene Interactions in Congenital Heart Disease
for Development of a Comprehensive Fetal Cardiac
Diagnostics Platform*
Cherry Creek High School Greenwood Village

Honorable Mention

Cora Schrock 9th grade
A CAE Case Study: EEG & ECG Correlation
Arickaree School Anton

Honorable Mention

Tyler Gregg 10th grade
Bos Taurus Protein Deterioration (Frozen vs. Refrigerated)
Miami-Yoder School Rush

Junior Division
Microbiology & Molecular Biology

First Place

Chloe Pennington 6th grade
Baffling Bacteria
Friends Middle School Boulder

Second Place

Daniel Strevett 8th grade
An Analysis on the Effect of Varied Tooth Disinfectants on Streptococcus Mutans
The Classical Academy Colorado Springs

Third Place

Autumn Schulz 6th grade
Can A D.I.Y. Filter Make River Water Safe To Drink?
Ignacio Middle School Ignacio

Honorable Mention

Garret Drullinger 7th grade
Does Treated Seed Corn Effect Soil Microbes?
Liberty School Joes

Honorable Mention

Armaan Gill 7th grade
Coliphage to the Rescue
Lamar Middle School Lamar

Senior Division
Microbiology & Molecular Biology

First Place

Gitanjali Rao 9th grade
A Novel Approach To Early Directional Diagnosis of Prescription Opioid Addiction
STEM School Highlands Ranch Highlands Ranch

Second Place

Chloe Henry 12th grade
Using Bioreactors to Eliminate Hazards to Coral Reefs
Golden High School Golden

Third Place

Harrison Whittlemore 12th grade
Studying the Effects of Use of Chemically Synthesised crRNA on CRISPR-Cas12a Nucleic Acid Detection
Fairview High School Boulder

Honorable Mention

Sarah Bian 11th grade
Targeting Threonine Kinases in Enterobacteriaceae Using CRISPR cas9
Cherry Creek High School Greenwood Village

Honorable Mention

Riley England 12th grade
Camryn Allen 11th grade
Shelbie Johnson 12th grade
The Effect of Microplastic Water Contamination on Phagocytosis in Tetrahymena thermophila
Rock Canyon High School Highlands Ranch

Junior Division
Physics

First Place

Ayan Vaishnav 8th grade
What's Up Th-air? Utilizing a Simulation to Design the Impeccable Airfoil for a Commercial Airliner
Campus Middle School Greenwood Village

Second Place

Quinn Burns 8th grade
Tennis Ball Bounce
Peak to Peak Charter School Lafayette

Third Place

Bryan Williams 8th grade
Walking the Planck of Quantum Mechanics
Hoehne Jr/Sr High School Hoehne

Senior Division
Physics

First Place

Eleanor Gentry 12th grade
How the Toroidal Magnetic Field Distribution in a Hot Accretion Flow Affects the Flow's Evolution
Peak to Peak Charter School Lafayette

Second Place

Olivia Odle 11th grade
Brady Sanchez 11th grade
Dancing Drops
Brush High School Brush

Third Place

Mark Reamon 10th grade
The Ponderomotive Force of Plasmas and the Conversion Potential of Low Ionization Energies
Fairview High School Boulder

Honorable Mention

Eastin Hastings 11th grade
Beyond the Weld
Liberty School Joes

Junior Division
Plant Sciences

First Place

Jordan Rockey 8th grade
Does Purple Skin Affect Greening In Potatoes?
Sargent Jr/Sr High School Monte Vista

Second Place

Kate Bachrach 8th grade
Algae and Nutrients: Bloom or Doom?
Summit Middle Charter School Boulder

Third Place

Karson Harbison 6th grade
Plant Senses: Exploring How Plants Sense Water
St. Columba Catholic School Durango

Honorable Mention

Grant Weaber 8th grade
Aiden Adams 8th grade
Fast and Furious Growth
Eaton Middle School Eaton

Senior Division
Plant Sciences

First Place

Derek Fearon 12th grade
Hope James 12th grade
Sage Wheeler 12th grade
*Nitrogen Fixation Efficacy of Trifolium repens with Various
Rhizobia Inoculant Treatments*
Rock Canyon High School Highlands Ranch

Second Place

Carlos Ochoa-Marquez 9th grade
*Growing Growing Gone!: Chemical Leaching and Its Effects
on Plant Life*
Monte Vista High School Monte Vista

Third Place

Peyton Leyendecker 12th grade
Hunter Leyendecker 12th grade
*Enriched Cyanoacrylate as a Transdermal Nutrient Transfer
and Attachment Method for Gracilaria sp.*
SkyView Academy Highlands Ranch

Junior Division
Best of CSEF Project

First Place

Margaret Arthur 8th grade
*Creating More Efficient Neural Networks Used to Find
Exoplanets Using SVD and Compression Techniques*
Summit Middle Charter School Boulder

Second Place

Rithvik Ijju 8th grade
*Neuroplasticity: Enabling Stroke Patients to Repair Motor
Skills by Imitating Motion Between Hands*
Challenge School Denver

Third Place

Julianne Vega 6th grade
Who's Got the Upper Hand?
Dolores Elementary School Dolores

Senior Division
Best of CSEF Project

First Place

Matthew Anderson 10th grade
*Real-Time Seizure Forecasting for Epileptics on a Consumer
Product*
Cherry Creek High School Greenwood Village

Second Place

Sarah Tang 12th grade
*Orbit Determination and Projection of Potentially Hazardous
Asteroid 12538 (1998 OH)*
Fairview High School Boulder

Third Place

Derek Fearon 12th grade
Hope James 12th grade
Sage Wheeler 12th grade
*Nitrogen Fixation Efficacy of Trifolium repens with Various
Rhizobia Inoculant Treatments*
Rock Canyon High School Highlands Ranch

2020 Colorado Science and Engineering Fair Special Awards Press Release

CSEF

Colorado Science & Engineering Fair

Elemer Bernath Memorial Technical Writing Award

Megan Wagner certificate	8th grade
Peak to Peak Charter School <i>Investigation of Electrode Materials for Batteries</i>	Lafayette
Kelly Young certificate	8th grade
Summit Middle Charter School <i>Multitasking in the Brain</i>	Boulder
Willow Schulz \$100, certificate	8th grade
Ignacio Middle School <i>Vaping - Credible Crisis?</i>	Ignacio

Ralph Desch Memorial Technical Writing Award

Matthew Anderson certificate	10th grade
Cherry Creek High School <i>Real-Time Seizure Forecasting for Epileptics on a Consumer Product</i>	Greenwood Village
Sam Haggans certificate	11th grade
Fairview High School <i>Development of a Novel UAV-Based Target Tracking Algorithm</i>	Boulder
Jason Cui \$100, certificate	10th grade
Fairview High School <i>Sodium Benzoate, A Common Preservative, Induces Premature Aging and Accelerates Neurodegeneration</i>	Boulder

Military

United States Navy & Marine Corps

Office of Naval Research Award

Bryan Williams letter of congratulations, ONR medallion, certificate	8th grade
Hoehne Jr/Sr High School <i>Walking the Planck of Quantum Mechanics</i>	Hoehne
Corbyn Wright letter of congratulations, ONR medallion, certificate	8th grade
Sargent Jr/Sr High School <i>Drop Speed</i>	Monte Vista
Sara Wilson letter of congratulations, ONR medallion, certificate	8th grade
The Classical Academy <i>Mind Your Message</i>	Colorado Springs
Saige Hostetter letter of congratulations, ONR medallion, certificate	8th grade
Sargent Jr/Sr High School <i>Schools, Clean Up Your Act!</i>	Monte Vista

Tate Schrock letter of congratulations, ONR medallion, certificate; \$50 gift card	10th grade
Arickaree School <i>Autonomous Glider for Radiosonde Recovery</i>	Anton

Urianna Acosta letter of congratulations, ONR medallion, certificate; \$50 gift card	9th grade
Monte Vista High School <i>Do You Need a Hand? A Robotic Device Designed to Assist Physically-Disabled People with Eating</i>	Monte Vista

Mohamed Ibrahim letter of congratulations, ONR medallion, certificate; \$50 gift card	10th grade
Wiggins Jr/Sr High School <i>Utilizing an Alkali Catalyst to Help Identify Alternative Feedstocks in Biodiesel Synthesis</i>	Wiggins

Charles Wang letter of congratulations, ONR medallion, certificate; \$50 gift card	11th grade
Fossil Ridge High School <i>Making AI Smarter: A Novel Approach to Creating a New Generation of Smart Chemical Sensors</i>	Fort Collins

Organizational

American Statistical Association,

Colorado/Wyoming Chapter

David Young Memorial Award

Siddharth Nareddy \$200, student membership in the American Statistical Association, acknowledgment at chapter fall meeting and on chapter web site	8th grade
Peak to Peak Charter School <i>Utilizing Surfactants for Microplastic Removal</i>	Lafayette

Kathryn Kummel \$200, student membership in the American Statistical Association, acknowledgment at chapter fall meeting and on chapter web site	11th grade
Palmer High School <i>Investigating Urban Heat Islands Using Mathematical Models, Satellite Data, and On-Site Measurements</i>	Colorado Springs

Colorado Medical Society

CMS Education Foundation Award

Giovanni Aguilar & Brooke Hoffstaetter \$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	8th grade
Sargent Jr/St High School <i>Battle of the Burgers</i>	Monte Vista

McKinze Vaughn 11th 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
 Genoa-Hugo School Hugo
Something Attractive: The Effects of Magnets on Cellular Regeneration

United States Department of Commerce
Award for Excellence in Science and Engineering

Katy Sun 12th grade
 plaque, alternate for summer internship at DOC labs in Boulder
 Monarch High School Louisville
Source Apportionment Using 7-Wavelength Aethalometer Measurements

Leah Clayton 12th grade
 plaque, summer internship at DOC labs in Boulder
 Evergreen High School Evergreen
Climate Is Changing & Permafrost Is Thawing

SSP

American Meteorological Society
Outstanding Achievement in Atmospheric Sciences Award

Keeley Miles, Kirsten Stringer & Chaz Childress 8th grade
 certificate
 Goodnight School Pueblo
The Real Result: Pollution and Marine Life

Samantha Schaefer 8th grade
 certificate
 The Classical Academy Colorado Springs
Cactus, Tree, or Flower . . . Which Has More CO2 Reduction Power

Mattie Singley 12th grade
 Emily Stratman 12th grade
 certificate
 Brush High School Brush
A Simplified Method to Measure Ground-Level Ozone in the Atmosphere

Kate Kaczmarek 10th grade
 certificate
 The Classical Academy Colorado Springs
The Effect of Organism Based Calcium Carbonate on Ocean Acidification

American Psychological Association
Outstanding Achievement in Psychological Sciences Award

Kelly Young 8th grade
 certificate
 Summit Middle Charter School Boulder
Multitasking in the Brain
 Camille Rawinski 10th grade
 certificate
 Monte Vista High School Monte Vista
Is a Busy Life a Happy Life? Analyzing Student Activity Involvement and Its Effect on Mental Health

ASM Materials Education Foundation
ASM Materials Science Award

Genevieve Carter 8th grade
 certificate
 Home School Lafayette
Effect of Tool Path on Strength of 3D Printed Parts

Nicole Hankovszky 12th grade
 certificate
 Cherry Creek High School Greenwood Village
Optimizing Metal Detection Capabilities in a Pulse Induction Circuit

Association for Women Geoscientists
Outstanding Achievement in Geosciences Award

Kenia Hansen Guzman & Presley Siebrands 8th grade
 certificate
 Fort Morgan Middle School Fort Morgan
Ruined Rocks!

Serenity Foutz 9th grade
 certificate
 Ignacio High School Ignacio
Using Cannabis Sativa As A Phytoremediator To Purify Contaminated Soil With Heavy Metals

Broadcom
Broadcom MASTERS Nomination

Deena Safiulla 8th grade
 nomination to enter the 2020 Broadcom MASTERS competition for middle school students
 Challenge School Denver
The Mightiest Creatures of All

Julianne Vega 6th grade
 nomination to enter the 2020 Broadcom MASTERS competition for middle school students
 Dolores Elementary School Dolores
Who's Got the Upper Hand?

Anjana Radha 8th grade
 nomination to enter the 2020 Broadcom MASTERS competition for middle school students
 Peak to Peak Charter School Lafayette
Coffee: An Amylase Activator or Inhibitor?

Samantha Schaefer 8th grade
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 The Classical Academy Colorado Springs
Cactus, Tree, or Flower . . . Which Has More CO2 Reduction Power

Megan Wagner 8th grade
 nomination to enter the 2020 Broadcom MASTERS competition for middle school students
 Peak to Peak Charter School Lafayette
Investigation of Electrode Materials for Batteries

Rithvik Ijju 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Challenge School Denver
*Neuroplasticity: Enabling Stroke Patients to Repair Motor Skills
by Imitating Motion Between Hands*

Emily Hume 7th grade
nomination to enter the 2020 Broadcom MASTERS
competition for middle school students
Walsh Jr/Sr High School Walsh
Reduction of Nitrates in Drinking Water: What Works?

Margaret Arthur 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Summit Middle Charter School Boulder
*Creating More Efficient Neural Networks Used to Find
Exoplanets Using SVD and Compression Techniques*

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nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Discovery Canyon Campus Colorado Springs
RUN For Your LIFE

Chloe Pennington 6th grade
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for middle school students
Friends Middle School Boulder
Baffling Bacteria

Ayan Vaishnav 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Campus Middle School Greenwood Village
*What's Up Th-air? Utilizing a Simulation to Design the
Impeccable Airfoil for a Commercial Airliner*

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for middle school students
Sargent Jr/Sr High School Monte Vista
Does Purple Skin Affect Greening in Potatoes?

Tatum Duvall 6th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Thomas MacLaren School Colorado Springs
*A Study on the Prevalence of Salmonella in the Saliva of Vizsla
Dogs Fed Raw vs. Cooked Diet*

Kelly Young 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Summit Middle Charter School Boulder
Multitasking in the Brain

Bradin Gurule 6th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
St. Columba Catholic School Durango
Clean Cents

Averi Ulibarri 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
St. John the Evangelist Catholic Loveland
Schoolyard Resistivity: What Lies Beneath?

Braeleigh MacAskill 7th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Holy Family Catholic School Grand Junction
Raise the Roof

Genevieve Carter 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Home School Lafayette
Effect of Tool Path on Strength of 3D Printed Parts

Naomi Kruse 6th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Schullandheim Colorado Springs
*I Speak for the Trees: The Use of Tree-Ring Analysis of Pinus
ponderosa To Detect A Local Climate History*

Sam Forsberg 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Good Shepherd Catholic School Denver
From Sadness to Gladness!

Cedar Wine 8th grade
Devin Farahani 7th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Friends Middle School Boulder
*The Purr-fect Pet: The Relationship Between Pets and Human
Blood Pressure*

Daniel Strevett 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
The Classical Academy Colorado Springs
*An Analysis on the Effect of Varied Tooth Disinfectants on
Streptococcus Mutans*

Quinn Burns 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Peak to Peak Charter School Lafayette
Tennis Ball Bounce

Kate Bachrach 8th grade
nomination to enter the 2020 Broadcom MASTERS competition
for middle school students
Summit Middle Charter School Boulder
Algae and Nutrients: Bloom or Doom?

Lemelson Foundation

The Lemelson Early Inventor Prize

Nathaniel Ellis 8th grade
certificate, \$100 (to be mailed)
Escalante Middle School Durango
*Human Biomechatronics: Strength Augmentation and Improving
Muscle Communication*

Mu Alpha Theta

Outstanding Achievement in Mathematics

Michael Crandall 12th grade
certificate
Brush High School Brush
Calculating the Volume of Icicles Using Calculus

Lily Cotty 11th grade
certificate
Compass Community Fort Collins
Patterns in a 3D Pascal's Triangle

NASA

NASA Earth System Science Award

Benjamin Sundheim 7th grade
certificate
St John the Evangelist Catholic Loveland
How Hot Are Your Rocks?

Xander Duvall 9th grade
certificate
Thomas MacLaren School Colorado Springs
Analysis of Neutral Hydrogen Radio Emissions in the Milky Way Galactic Plane

National Oceanic and Atmospheric Administration

Taking the Pulse of the Planet Award

Amanda Castillo-Lopez 8th grade
certificate
Challenge School Denver
Comparing Lead Removal by Hydroxide Precipitation vs. Fruit Waste Adsorption

Estelle Brewer & Cody Martin 12th grade
certificate
Nederland Middle-Senior High Nederland
Beef Cattle Methane Emissions in Feedlots: A Sequestration Plan Utilizing Pressure Swing Adsorption

Ricoh USA

Ricoh Sustainability Development Award

Kyra Keating & Benjamin Wells 7th grade
certificate
Weldon Valley Schools Weldona
Fuel 4 Future: From Trash to Gas- Biofuel

Cooper Godfrey 12th grade
certificate
Yuma High School Yuma
Mycelium Bricks: Building Blocks of the Future

Society for In Vitro Biology

Outstanding Achievement in In Vitro Biology Award

Srishti Jerath, Charlie Lemieux & Sarah Lombardi 11th grade
certificate
Rock Canyon High School Highlands Ranch
Effect of Ethanol Exposure on Heart and Brain Development in Danio rerio During the Embryonic Period

McKinze Vaughn 11th grade
certificate
Genoa-Hugo School Hugo
Something Attractive: The Effects of Magnets on Cellular Regeneration

United States Agency for International Development

USAID Science Champion Award

Marianna O'Connor 6th grade
certificate
Escuela de Guadalupe Denver
Can Nanotechnology Clean Up Oil Spills Faster?

Leah Clayton 12th grade
certificate
Evergreen High School Evergreen
Climate Is Changing & Permafrost Is Thawing

United States Metric Association

Outstanding Achievement in the Use of the International System Award

Haydan Drullinger 6th grade
certificate
Liberty School Joes
It's a Sticky Situation: The Effects of Particles on the Effectiveness of Grease

Jasmine Li 12th grade
certificate
Fairview High School Boulder
Applying a Novel Hot-Casting Technique to Increase Perovskite Solar Cell Stability & Efficiency

Water Environment Federation

Stockholm Junior Water Prize

Keaton Gregg 9th grade
certificate, nomination to enter the SJWP state competition
Monte Vista High School Monte Vista
LightWork: Solar Purification vs. Other Purification Methods

Gabriel Ellias 11th grade
certificate, nomination to enter the SJWP state competition
Cheyenne Mountain High School Colorado Springs
The Effects of Ozonated Water on Bacillus cereus on Soybeans

Riley England 12th grade
Camryn Allen 11th grade
Shelbie Johnson 12th grade
certificate, nomination to enter the SJWP state competition
Rock Canyon High School Highlands Ranch
The Effect of Microplastic Water Contamination on Phagocytosis in Tetrahymena thermophila

Kate Kaczmarek 10th grade
certificate, nomination to enter the SJWP state competition
The Classical Academy Colorado Springs
The Effect of Organism Based Calcium Carbonate on Ocean Acidification

Emmalie Byrne 11th grade
certificate, nomination to enter the SJWP state competition
Colorado Virtual Academy Vilas
Water, Magnets, & Microplastics

Evan Tweedie 9th grade
certificate, nomination to enter the SJWP state competition
Durango High School Durango
The Toxicity of the Lotic Water Bodies in the Silverton Caldera

Yale Science & Engineering Association

*Outstanding Achievement in Science & Engineering
Award*

Siddharth Bharthulwar 11th grade
certificate, medallion (to be mailed)
Fairview High School Boulder
*An Eye in the Fog: Development of a Novel Navigational and
Visual Guidance System for Aircraft Operations in Low
Visibility Conditions*

Teacher

Colorado Science & Engineering Fair

Doug Steward Memorial Teaching Award

Yajaira Fuentes-Tauber
\$75, certificate
Northridge High School Greeley

Paul Strode
\$75, certificate
Fairview High School Boulder

Marguerite Yowell
\$75, certificate
Genoa-Hugo School Hugo

Lockheed Martin

CSEF Teacher of the Year Award

Marguerite Yowell
monetary grant to school; plaque
Genoa-Hugo School Hugo