

COLORADO SCIENCE AND ENGINEERING FAIR

APRIL 9 - 11, 2015



Artwork by Tayler Rocha
Monte Vista High School

FOR COLORADO STUDENTS IN GRADES 6 - 12
HOSTED BY THE COLLEGE OF NATURAL SCIENCES
EDUCATION & OUTREACH CENTER
AT COLORADO STATE UNIVERSITY
FORT COLLINS, COLORADO



Colorado State Science Fair, Inc.

2015 ANNUAL REPORT

The highly successful Colorado Science and Engineering Fair was enabled once again by the infrastructure, coordination, and management resources provided by the College of Natural Sciences Education & Outreach Center (EOC) of Colorado State University. EOC is a center with the mission of improving teaching and enhancing learning for all students, K-16, by developing high quality programs, and dynamic partnerships with K-12 schools, higher education, government, and business. We are most grateful for the roles of EOC for making both talented people and logistics available to the Colorado Science and Engineering Fair.

The Board of Directors
Colorado State Science Fair Inc.

August 31, 2015
Colorado State Science Fair, Inc.
College of Natural Sciences
Education & Outreach Center
Colorado State University
Campus Delivery 1802
Fort Collins, CO 80523-1802
Tel (970) 498-4121
Fax (970) 491-2005
e-mail: csef@lamar.colostate.edu
<http://www.csef.colostate.edu>

Executive Director and Registered Agent:
Courtney Butler, (970) 491-7716

2015 ANNUAL REPORT



The Colorado State Science Fair, Inc. was established in 1977 as a private, non-profit organization to run the Colorado Science and Engineering Fair (CSEF). The CSEF has actually been held annually since 1955 and is the state-level event in a year-long process of local and regional science fairs. More than three thousand students participate in science fair programs statewide. The purpose of the CSEF is to stimulate student interest and encourage students in science and engineering through recognition of their research knowledge, ability, and achievement.

Each year, a number of experiences are made available to the student finalists who participate in the CSEF. Tours of the university and local corporate research facilities provide opportunities for students and their families to see research in action. Additionally, the judges' interviews allow the finalists a chance to interact with professional scientists and engineers. Over the years, many students have said that having the chance to meet and speak with their

peers about their science projects is the most beneficial aspect of the Colorado Science and Engineering Fair.

In addition to getting the opportunity to interact with working scientists, CSEF finalists compete for awards in the categories of Animal Sciences; Behavioral & Social Sciences; Chemistry; Earth & Space Sciences; Energy & Transportation; Engineering; Environmental Sciences; Mathematics & Computer Sciences; Medicine & Health; Microbiology; Physics; and Plant Sciences – either as an individual or as a team project. Recognition for outstanding research in each of these categories as well as an award for technical writing are presented each year at the CSEF Awards Ceremony. The top four Senior Division projects are awarded trips to compete at the Intel International Science and Engineering Fair (Intel ISEF) each year.

From start to finish, and at all levels of participation, the science fair experience is one not only of competition, but also of camaraderie, creativity, cooperation, and education. This is the essence of the logo for the Colorado Science and Engineering Fair.

2015 COLORADO SCIENCE AND ENGINEERING FAIR

The sixtieth Colorado Science and Engineering Fair was held at the newly renovated Lory Student Center on the Colorado State University campus in Fort Collins from Thursday, April 9, 2015 to Saturday, April 11, 2015

This year, CSEF winners were chosen from among 339 projects represented by 391 finalists from 114 schools and 13 regional science fairs. More than 190 professional scientists, engineers and mathematicians interviewed the students and evaluated their projects before selecting the Grand Award winners. In addition, at least 70 businesses, professional societies, government agencies and individuals provided more than 150 of their own representatives to judge exhibits based on their own criteria. They judged the student finalists and conferred Special Awards, worth over \$130,000, which represented an aspect of the bestowing organization. These included college scholarships, offers of summer employment, field trips, cash, savings bonds, and scientific equipment. Over 1,100 people attended the Awards Ceremony this year.

The 2015 Colorado Science and Engineering Fair had 34 sponsors. These included 3 Diamond Sponsors (providing over \$10,000), 3 Platinum Sponsors (providing between \$5,000 - \$9,999), 3 Gold Sponsors (providing between \$2,500 - \$4,999), 7 Silver Sponsor (providing between \$1,000 - \$2,499), and 9 Copper Sponsors (providing between \$500 - \$749). In addition, there were 32 Contributors (individuals and companies providing less than \$500).

Scholarships from several Colorado universities were also presented. Adams State University awarded thirteen one-year full resident tuition and fees scholarships. The Colorado School of Mines awarded seven \$1,000 renewable tuition scholarships. Colorado State University awarded eleven

\$1,000 renewable tuition scholarships to each of the 1st place senior division category winners who were eligible. The College of Natural Sciences at CSU also awarded four \$1,000 tuition scholarships to each of the Senior Division CSEF Best Project award winners. Colorado State University-Pueblo awarded one \$1,000 tuition scholarship. The University of Colorado, Boulder awarded eight \$500 renewable scholarships. The Colorado Science and Engineering Fair also awarded a \$2,000 scholarship to a twelfth grader in the name of Ryan Patterson (Intel ISEF top winner in 2001) for use at the college or university of their choice.

This year, the CSEF was honored to have Mr. Steve Struna, the president of Bayswater Exploration & Production as the guest speaker.



(See Appendix 1 – 2014 CSEF Schedule)

2015 CSEF GENDER RATIOS

With the 2010 Annual Report, the CSSF, Inc. began to report statistics from across the spectrum of participation in the CSEF. Through time, these numbers may show trends and allow for identification of areas in need of improvement. The goal is to ensure that the students who participate are a reflection of the student population from across Colorado. The CSSF, Inc. mission is to make the CSEF accessible to all of Colorado's students regardless of gender and ethnicity.

(Please note that team projects are identified by the gender & ethnicity of the Team Leader. Also, all statistics include both Junior and Senior Divisions together.)

Percentage of Projects

Male – 42%
Female – 58%

Percentage of Awards

Male – 48%
Female – 52%

Percentage of Projects by Category

Animal Sciences

Male – 30.4%
Female – 69.6%

Behavioral & Social Sciences

Male – 31.8%
Female – 68.2%

Chemistry

Male – 31.8%
Female – 68.2%

Earth & Space Sciences

Male – 50.0%
Female – 50.0%

Energy & Transportation

Male – 65.4%
Female – 34.6%

Engineering

Male – 83.3%
Female – 16.7%

Environmental Sciences

Male – 27.9%
Female – 72.1%

Mathematics & Computer Sciences

Male – 85.0%
Female – 15.0%

Medicine & Health

Male – 25.0%
Female – 75.0%

Microbiology

Male – 25.0%
Female – 75.0%

Physics

Male – 65.6%
Female – 34.4%

Plant Sciences

Male – 28.6%
Female – 71.4%

Percentage of Awards by Category

Animal Sciences

Male – 25.9%
Female – 74.1%

Behavioral & Social Sciences

Male – 12.0%
Female – 88.0%

Chemistry

Male – 39.5%
Female – 60.5%

Earth & Space Sciences

Male – 62.2%
Female – 37.8%

Energy & Transportation

Male – 57.7%
Female – 42.3%

Engineering

Male – 67.3%
Female – 32.7%

Environmental Sciences

Male – 41.3%
Female – 58.7%

Mathematics & Computer Sciences

Male – 80.0%
Female – 20.0%

Medicine & Health

Male – 43.9%
Female – 56.1%

Microbiology

Male – 43.5%
Female – 56.5%

Physics

Male – 62.8%
Female – 37.2%

Plant Sciences

Male – 25.0%
Female – 75.0%

2015 CSEF ETHNICITY RATIOS

(Please note that team projects are identified by the ethnicity of the Team Leader.)

Percentage of Projects

Caucasian – 71.6%
Hispanic – 5.6%
Asian – 7.7%
African American – 0.3%
Native American – 0.5%
Other/Unknown – 14.3%

Percentage of Awards

Caucasian – 70.2%
Hispanic – 5.9%
Asian – 8.5%
African American – 0.3%
Native American – 0.6%
Other/Unknown – 14.5%

2015 CSEF GRADE LEVEL RATIOS

(Please note that team projects are identified by the grade level of the Team Leader.)

Percentage of Students

Junior Division – 61.1%
6th grade – 11%
7th grade – 22%
8th grade – 28.1%
Senior Division – 38.9%
9th grade – 7.4%
10th grade – 11.3%
11th grade – 11.3%
12th grade – 8.9%

Percentage of Projects

Junior Division – 62.5%
6th grade – 10.6%
7th grade – 22.4%
8th grade – 29.5%
Senior Division – 37.5%
9th grade – 7.7%
10th grade – 11.2%
11th grade – 10.7%
12th grade – 7.9%

Percentage of Grand Awards per Division

Junior Division – 55%
6th grade – 10/85 awards – 12%
7th grade – 31/85 awards – 36%
8th grade – 44/85 awards – 52%
Senior Division – 45%
9th grade – 11/68 awards – 16%
10th grade – 15/68 awards – 22%
11th grade – 25/68 awards – 37%
12th grade – 17/68 awards – 25%

Percentage of Students Winning Grand Awards

Junior Division – 37%
6th grade – 9/43 students – 21%
7th grade – 32/86 students – 37%
8th grade – 48/110 students – 44%
Senior Division – 50%
9th grade – 11/29 students – 38%
10th grade – 16/44 students – 36%
11th grade – 30/44 students – 68%
12th grade – 19/35 students – 54%

Percentage of Special Awards per Division

Junior Division – 47%
6th grade – 13/300 awards – 4%
7th grade – 45/300 awards – 15%
8th grade – 83/300 awards – 28%
Senior Division – 53%
9th grade – 23/300 awards – 8%
10th grade – 44/300 awards – 15%
11th grade – 52/300 awards – 17%
12th grade – 40/300 awards – 13%

Percentage of Students Winning Special Awards

Junior Division – 35%
6th grade – 10/43 students – 24%
7th grade – 25/86 students – 29%
8th grade – 48/110 students – 44%
Senior Division – 53%
9th grade – 14/29 students – 48%
10th grade – 22/44 students – 50%
11th grade – 23/44 students – 52%
12th grade – 21/35 students – 60%

2015 COLORADO SCIENCE AND ENGINEERING FAIR AWARDS

The top four Senior Division project exhibitors (individual or team) won a trip to compete in the Intel International Science and Engineering Fair held in Pittsburgh, Pennsylvania May 10 – 15, 2015. First place went to **Mary Hood**, Sargent High School in Monte Vista, grade 11, for the project *SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly*. Second place went to **Logan Collins**, Fairview High School in Boulder, grade 12, for the project *An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance*. Third place went to **Elliot Gorokhovsky**, Fairview High School in Boulder, grade 10, for the project *A Novel Algorithm for Model Counting*. Fourth place went to **Samuel Scheeres**, Fairview High School in Boulder, grade 12, for the project *Rigorous Constraints on Exchange for the 3-body Problem*.

The winner of the Ralph F. Desch Memorial Technical Writing Award was **Margaret Preigh** from Fairview High School in Boulder, grade 12, for the project *Pulsing Electromagnetic Radiation at 50/60Hz as a Pest Repellant in Insects*.

The winners of the Senior Division Student Choice Award was **Stephen Parish**, home schooled, grade 12, for the project *Cyber Automated Report Linker (C.A.R.L): Minimizing Expansion of Catastrophic Cyber Infiltrations*. The Junior Division Student Choice winners were **Kaybree Keating, Emilee Wells & Kaytlyn Keating** from Weldon Valley School, grades 8 & 6, for the project *Zapped Electro-Culture: The Effect of Electricity on Germination and Growth of Seedlings*.

The winner of the Poster Art Contest was **Morgan Voss**, from Beulah School of Natural Sciences.

The winners of the Pioneers of Science Awards were **Avi Swartz, Tyler Giallanza & Ian Johnson**, Cherry Creek High School in Greenwood Village, grades 10 & 12, for the project *Developing a Class Scheduling Program with Minimum Conflicts for Large Schools*; **Emma Hackett**, St. Columba Catholic School in Durango, grade 8, for the project *Daily Dose*; **Paige Newman**, North Arvada Middle School in Arvada, grade 7 for the project *The Effect of Air Pressure on Different Brands of Duct Tape*; **Grace Varga**, American Academy in Parker, grade 7, for the project *Brush It or Buzz It: The Comparison of Rotating and Vibrating Toothbrushes*; **Robin Bahrami**, Summit Charter Middle School in Boulder, grade 8, for the project *The Soundasaurus: Digital Sound Analysis Using Signal Processing Algorithms*; **William Highfill**, Corwin International Magnet School in Pueblo, grade 6, for the project *Spoiled Rotten*; **Nichole Miller**, Ortega Middle School in Alamosa, grade 7, for the project *Blue Bottle Blues*; **Kale Hall**, Cortez Middle School in Cortez, grade 8, for the project *Put Me in Coach*; **Orian Wagers**, Woodlin School in Woodrow, grade 7, for the project *Turn Down That Sound*; **Greg Watts**, Sargent Junior High School in Monte Vista, grade 7, for the project *Are All Pellets Created Equally?*; **Jacob Wright**, Walsh Jr/Sr High School in Walsh, grade 8, for the project *Wind in My Mane*; **Katelynn Salmon**, Monument Academy in Monument, grade 8, for the project *Effect of Microbeads on Daphnia Heart Rate*; **Cassandra Blew**, La Veta Jr/Sr High School in La Veta, grade 8, for the project *Beneath the Ashes: How to Reduce Flash Flooding Rates on Hydrophobic Soil Layers After a Fire*; **Jessica Fiala**, St. Columba Catholic School in Durango, grade 8, for the project *Disinfecting Power*; and **Alexandra MacAskil**, Holy Family Catholic School in Grand Junction, grade 8, for the project, *Rock On!*

2015 COLORADO SCIENCE AND ENGINEERING FAIR

SCHOLARSHIP AWARDS

ADAMS STATE UNIVERSITY

Merritt Singley, Brush High School in Brush, grade 11, for the project *The Influence of Omega-3 Fatty Acids on Lipid Microdomains Obtained from Bovine Luteal Cells*

Sarena Wells, Fort Morgan High School in Fort Morgan, grade 12, for the project *Frustration Responses: An Analysis of Dispositional Learning*

Shelly Steinert, Sargent High School in Monte Vista, grade 11, for the project *Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash*

Wyatt Wiening, Trinidad High School in Trinidad, grade 9, for the project *Expanding Clays*

Kelsey Lindbloom, Salida High School in Salida, grade 11, for the project, *Fueling the Future Phase 4: Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell*

Brandon Navratil, Animas High School in Durango, grade 11, for the project *Portable Conductivity Probe*

Jessalyn Bay-Voit, Durango High School in Durango, grade 10, for the project *Fire Ready OR Not?*

Derrick Zanoni, Silverton High School in Silverton, grade 10, for the project *Multi-Purpose Robo Glove*

Collins Leonard, Springfield Jr/Sr High School in Springfield, grade 10, for the project *Gatorade's Effect on Heart Rate*

Rebecca Bloomfield, Palmer High School in Colorado Springs, grade 10, for the project *Competence Dependent Chemotaxis and Genomic Repair in Acinetobacter baylyi*

Gabriella Tolan, Brush High school in Brush, grade 11, for the project *Vertical Motion to Rotational Movement of a Rectangular Wing*

Joel Wagner, Arickaree School in Anton, grade 10, for the project *Effects of Water Contaminants on Plants*

Aubrey Wells & Kaitlin Wells, Fort Morgan High School in Fort Morgan, grades 10 & 9, for their project *Electromagnetic Spectrum: Absorption Measurements and Their Applications to Energy Analysis*

COLORADO SCHOOL OF MINES

Trevor Jordan, Animas High School in Durango, grade 11, for the project *A Wing of the Future: Part II*

Madeline Goosman, Fairview High School in Boulder, grade 11, for the project *Mandarin Tone Perception in Simulations of Electro-Acoustic and Cochlear-Implant Hearing*

Haley Weinstein, Fairview High School in Boulder, grade 11, for the project *Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing*

Mary Hood, Sargent High School in Monte Vista, grade 11, for the project *SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly*

Brandon Navratil, Animas High School in Durango, grade 11, for the project *Portable Conductivity Probe*

Hannah Langford & Molly Dickinson, Animas High School in Durango, grade 11, for the project *The Effects of Technology on Teenagers' Sleep Patterns*

Emily Zislis, Cherry Creek High School in Greenwood Village, grade 11, for the project *The Effect of Genetically Modified Soybean Consumption on Mouse Weight*

COLORADO STATE UNIVERSITY

Margaret Preigh, Fairview High School in Boulder, grade 12, for the project *Pulsing Electromagnetic Radiation at 50/60Hz as a Pest Repellant in Insects*

Serena Rusk, Fairview High School in Boulder, grade 11, for the project *An Analysis of Risk Factors for Developing Low Body Satisfaction in Adolescents*

Sirisha Gudavalli, Fairview High School in Boulder, grade 10, for the project *Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals*

Jesse Zhang, Fairview High School in Boulder, grade 12, for the project *Effect of the Atlantic Ocean on Sudden Stratospheric Warming*

Trevor Jordan, Animas High School in Durango, grade 11, for the project *A Wing of the Future: Part II*

Mary Hood, Sargent High School in Monte Vista, grade 11, for the project *SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly*

Hannah Hartung, Fairview High School in Boulder, grade 12, for the project *Effects of Parasites from Long Term Invasive Fish on Native Amphibians in the California Bay Area*

Elliot Gorkhovsky, Fairview High School in Boulder, grade 10, for the project *A Novel Algorithm for Model Counting*

Jonathan Snedeker, Fairview High School in Boulder, grade 12, for the project *Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy for Acute Myeloid Leukemia*

Samuel Scheeres, Fairview High School in Boulder, grade 12, for the project *Rigorous Constraints on Exchange for the 3-body Problem*

Jessica Shand, Discovery Canyon Campus in Colorado Springs, grade 10, for the project *Analysis of Spermatophyte Divergence to Expedite Identification of Novel Drug Candidates*

COLORADO STATE UNIVERSITY

COLLEGE OF NATURAL SCIENCES

Mary Hood, Sargent High School in Monte Vista, grade 11, for the project *SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly*

Logan Collins, Fairview High School in Boulder, grade 12, for the project *An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance*

Elliot Gorkhovsky, Fairview High School in Boulder, grade 10, for the project *A Novel Algorithm for Model Counting*

Samuel Scheeres, Fairview High School in Boulder, grade 12, for the project *Rigorous Constraints on Exchange for the 3-body Problem*

COLORADO STATE UNIVERSITY - PUEBLO

Kelsey Lindbloom, Salida High School in Salida, grade 11, for the project, *Fueling the Future Phase 4: Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell*

UNIVERSITY OF COLORADO, BOULDER

Molly Nehring, Monte Vista Middle School in Monte Vista, grade 8, for the project, *Genetic Algorithms: Solving Math Problems Using Ideas from Nature*

Michelle Kummel, Palmer High School in Colorado Springs, grade 9, for the project *A Spoonful of Sugar Helps the Nitrate Go Down: Denitrification in Wetland Soil*

Sirisha Gudavalli, Fairview High School in Boulder, grade 10, for the project *Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals*

Mary Hood, Sargent High School in Monte Vista, grade 11, for the project *SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly*

Haley Weinstein, Fairview High School in Boulder, grade 11, for the project *Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing*

Madeline Goosman, Fairview High School in Boulder, grade 11, for the project *Mandarin Tone Perception in Simulations of Electro-Acoustic and Cochlear-Implant Hearing*

Shelly Steinert, Sargent High School in Monte Vista, grade 11, for the project *Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash*

Areefa Rahman, Cherry Creek High School in Greenwood Village, grade 11, for the project *Saving the World with One Feather at a Time: The Amalgamation of Polymers using Chicken Feathers*

RYAN PATTERSON SCHOLARSHIP

The Ryan Patterson Scholarship is named in honor of the Intel ISEF top winner of 2001. This year's winner was **Logan Collins**, Fairview High School in Boulder, grade 12, for the project *An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance*.

(See Appendix 2 – CSEF Press Release)



2015 INTEL INTERNATIONAL SCIENCE AND ENGINEERING FAIR

The Intel International Science and Engineering Fair, the world's largest pre-college science fair, brings approximately 1,700 of the most curious and capable young science pioneers from over 75 countries to share ideas, showcase cutting-edge science and compete for over \$3 million in awards and scholarships. The Intel ISEF is the world's only international science fair representing all sciences for students in grades 9 through 12. The Intel ISEF has been coordinated for over 60 years by Society for Science & the Public one of the most respected non-profit organizations advancing the cause of science.

Colorado students from around the state were among the award winners at the 65th Intel ISEF held in Pittsburgh, PA, May 10 - 15, 2015.

GRAND AWARDS

Eliot Gorokhovsky from Boulder, CO won \$3,000 (1st Place) in Systems Software.

Logan Collins from Boulder, CO won \$1,500 (2nd Place) in Microbiology.

Jesse Zhang from Boulder, CO won \$1,000 (3rd Place) in Earth & Environmental Sciences.

Trevor Jordan from Durango, CO won \$500 (4th Place) in Engineering Mechanics.

Stephen Parish from Colorado Springs, CO won \$500 (4th Place) in Systems Software.

SPECIAL AND GOVERNMENT AWARDS

Logan Collins from Boulder, CO won \$400 (5th Place) from the American Society for Microbiology.

Eliot Gorokhovsky from Boulder, CO won \$3,000 (1st Place) from the NSA Research Directorate as well as \$500 (2nd Place) from the Association for Computing Machinery. He also received an Honorable Mention from the Association for the Advancement of Artificial Intelligence.

Trevor Jordan from Durango, CO won a renewable scholarship from West Virginia University.

Stephen Parish from Colorado Springs, CO won \$5,000 from the Oracle Academy.

Jesse Zhang from Boulder, CO won \$500 from the National Oceanic and Atmospheric Administration (NOAA) as well as \$500 from the Society of Exploration Geophysicists. He also received an Honorable Mention from the American Meteorological Society.

ORGANIZATION

The success of the yearly Colorado Science and Engineering Fair is directly dependent upon the support of public and private organizations, government agencies, school districts and universities, as well as the efforts of hundreds of committed volunteers. It is no exaggeration to say that CSEF volunteers indeed make the event possible. At the state level, there is the Board of Directors (which is comprised of volunteers from the sponsoring organizations and oversees the operation of the CSEF and the non-profit organization); the Advisory Council (volunteers from around the state who are on the CSEF Working Committees to make sure everything operates smoothly at the event); judges (both for Grand and Special Awards who interview the finalists and choose the winners); and hundreds of on-site volunteers who do the actual work of the CSEF. Prior to the state event, thirteen regional science fairs and a large number of local school science fairs are conducted throughout the state, and each of these is supported and promoted by hardworking and dedicated educators. And before a student's project even makes it to a local science fair, it requires the encouragement and support from individual teachers, adult sponsors, and parents to help students see their projects through from inception to finished exhibit. The Colorado Science and Engineering Fair is a product of all of these people.

MISSION STATEMENT

Colorado State Science Fair, Inc. honors excellence in science, technology, engineering and mathematics; providing opportunities for students from all regions of the state to create and present their research in environments that nurture interests in science and technology; promoting professional skills, high ethical standards, diversity and continuing intellectual development.

GOALS AND OBJECTIVES

The Colorado State Science Fair, Inc. is an organization that:

- Organizes the infrastructure of the Colorado Science and Engineering Fair for students from all regions of the state of Colorado to present science projects to judges, representatives of scientific organizations, the public and their peers;
- Honors winners from Colorado regional science fairs at the annual Colorado Science and Engineering Fair;
- Sends finalists from the state of Colorado to the Intel International Science and Engineering Fair (Intel ISEF);
- Provides experiences for Colorado students to interact with their peers, Colorado science teachers and Colorado scientists and engineers in professional and social settings;
- Promotes science, engineering and technology as careers, inspiring excellence, high ethical standards and emphasizing the immense satisfaction that comes from confronting and solving intellectual problems that serve societal needs;
- Reinforces in students the wonder nature instills, wherever and however possible, empowering them to follow their questions and dreams; and
- Encourages a culture that values and nurtures diversity.

We support regional science fairs by:

- Acting as an alternative to the Science Service affiliation as a means of attending the Intel ISEF;
- Providing a forum where regional science fairs can influence policies, rules and by-laws for the state science fair;
- Providing rules and requirements for participation in the Colorado Science and Engineering Fair;
- Facilitating communication, where practical, between regional science fairs and their participants;
- Providing information and resources to the regional fair directors, teachers and students which will promote interest in science, engineering and technology, and excellence in scientific research;
- Increasing public awareness and appreciation of science, engineering and technology in the schools.

CSEF SPONSORS

DIAMOND SPONSORS

(Providing over \$10,000 in support of CSEF)

Bayswater Exploration & Production, LLC

Colorado State University

Provost/Senior Vice President

College of Natural Sciences

CNS Education & Outreach Center

Intel Foundation

PLATINUM SPONSORS

(Providing \$5,000 - \$9,999 in support of CSEF)

Black & Veatch Building a World of Difference Foundation

Lockheed Martin

US Department of Commerce/NOAA

GOLD SPONSORS

(Providing \$2,500 - \$4,999 in support of CSEF)

Colorado Dental Association

Seagate Technology

Society of Petroleum Engineers

SILVER SPONSORS

(Providing \$1,000 - \$2,499 in support of CSEF)

CableLabs

Coloradans for Responsible Energy Development

Colorado Medical Society

Education Foundation

Goodrich Foundation

Google

IEEE, Denver Section

Nathan B. & Florence R. Burt Foundation

COPPER SPONSORS

(Providing \$500 - \$749 in support of CSEF)

AREVA Federal Services

Colorado Engineering Council

Exponential Engineering

Galvanic Engineering

IEEE, High Plains Section

Jill Rickards & Company, CPAs

Optimal Schedule

San Luis Valley Regional Science Fair

Vaughan Web Works LLC

COMPANY CONTRIBUTORS

(Providing up to \$500 in support of CSEF)

AceTivity, LLC

Colorado Association of Science Teachers

Colorado BioScience Institute

Kristi Mountain Sports

Pro-Sports

Scheevel Geo Technologies, LLC

Sigma Xi – CSU Chapter

Southern Colorado Orthodontic Specialists

SparkFun Electronics

INDIVIDUAL CONTRIBUTORS

(Providing up to \$500 in support of CSEF)

Ed & Lucy Adams
Sam & Eileen Bartlett
Alfred Bedard Jr.
Michael Bemski
Elena Bodoni
Lars Burnham
Tim & Courtney Butler
Russell & Pattye Chadwick
Polly Fielder
Nancy Glissmann
Carol Hoffman
Gina Holland & Isaac Britton
Dr. David & Vonda Holm
Dan Kowal
Robert Lampereur
Esther Langmack
Lori Leyh
Lale Lovell
Gerald & Maria Lyne
Ron McDaniel
Jennifer & Jeffrey Meuer
Woody Moss
Jody & Floyd Oaks
Russell Ragsdale
Jennie Ridgley
Mary Schultz
Brad Scriber
Dr. Larry & Carol Sveum
The Voss Family
David & Pattye Volz

DOOR PRIZE CONTRIBUTORS

Michael Bemski
Colorado Geographic Alliance
Colorado Geological Survey
Colorado State University Bookstore
Colorado State University College of Natural Sciences
Denver Botanic Gardens
Denver Broncos
Dinosaur Resource Center
Durango/Silverton Narrow Gauge Railroad
Infinity Park Village of Glendale
Mesa Verde Museum Association
RAFT Colorado
Rio Grande Scenic Railroad
Texas Instruments
Western National Parks Association – Great Sand Dunes National Park
Wolf Creek Ski Area

Thank you so much to the incredible donors
who make this event possible!

CSEF ADVISORY COUNCIL

The CSEF Advisory Council is comprised of the Board of Directors, the Regional Fair Directors and Assistant Directors, and many at-large members.

CSSF BOARD OF DIRECTORS

Executive Committee:

President- Dr. Russell Chadwick

Vice President- Mr. Brian Scriber

Treasurer- Mr. Dan Kowal

Secretary- Mr. Ryan Patterson

Past President- Dr. Carol Morrow

Executive Director- Ms. Courtney Butler

AREVA Federal Services

Gwyneth Glissmann

Mike Bemski

Bayswater Exploration & Production

Robert Carney

Megan Miller

Colorado Dental Association

Dolly Morrow

Dr. Robert Morrow

Colorado Engineering Council

Sam Bartlett

Colorado Medical Society

Dean Holzkamp

Colorado State University

Dr. Jan Nerger

Dr. Andrew Warnock

IEEE, Denver Section

Pat Kendrick

David Young

Galvanic Engineering

Ryan Patterson

Katlin Hornig

Lockheed Martin

Ed Scholz

Optimal Schedule

Brian Scriber

San Luis Valley Regional Sciences Fair

Dr. David Holm

Dr. Larry Sveum

Society of Petroleum Engineers

Perter Erard

US Department of Commerce/NOAA

Dr. Russell Chadwick

Dan Kowal

Vaughan Web Works

Nancy Glissmann

Peter Teasdale

Associate/Alternative Members

Elemer Bernath - Historian

Dr. Alfred Bedard- NOAA

Jody Oaks - SLV RSF

Doug Steward - SRC Chair

REGIONAL FAIR DIRECTORS

Arkansas Valley Regional Science Fair

Wayne Beadles

Boulder Valley Regional Science Fair

Jennifer Barr and Marlys Lietz

Denver Metro Regional Science Fair

Jennifer Hellier

East Central Regional Science Fair

William Mallory and Marguerite Yowell

Longs Peak Regional Science Fair

Lori Ball

Morgan/Washington Regional Science Fair

Darline Miner

Northeast Regional Science Fair

Sonya Shaw

Pikes Peak Regional Science Fair

Georgia Matteson

San Juan Basin Regional Science Fair

Sandra Corbitt

San Luis Valley Regional Science Fair

Lucy Adams

Southeast Regional Science Fair

Valerie Reifschneider

Southern Colorado Regional Science Fair

Lori Leyh

Western Colorado Regional Science Fair

Kevin Hoskin

MEMBERS AT LARGE

David Clark

Brian Geiss

Joel Gray

Steve Iona

Kim Melville-Smith

Amanda Parker

Katie Propst

Jim Sites

Laura Ussery

Tracy Webb

Doug Everett

Nancy Gettman

Steve Hiebert

Ron Kollars

Candus Muir

Judy Prester

Rod Simpson

Doug Steward

Julia Veir

Wendy Wempe

CSEF DIRECTORS

* *Charles Bragaw*

1956 – 1967

* *Calvin Fisher*

1968 – 1974

* *Sam Shushan*

1975 – 1977

Gordon Moore

1978 – 1979

* *Russell B. Stoner*

1979 – 1981

Virgil A. Sandborn

1982 – 1983

James R. Sites

1984 – 1985

Lloyd Walker

1986 – 1988

Connie Vader-Lindholm

1989 – 1990

Lynn Butler

1991 – 1992

Kate Taylor

1992 – 1994

1997 - 1998

Christal McDougall

1995 – 1996

Lucy Adams

1999

Courtney Butler

2000 – present

* *Director Emeritus for outstanding contributions to CSEF and more than two years of service as CSEF Director.*

WORKING COMMITTEES

Alumni

The focus of this committee is to create ways in which CSEF Alumni can continue to be active in the fair each year (i.e.: recruiting them as judges, volunteers, and/or sponsors) by keeping in contact with graduated seniors.

Awards Ceremony

The focus of this committee is the smooth running of the Awards Ceremony and winner recognition.

Display & Safety

The focus of this committee is to oversee the volunteers who check Finalists' projects for display and safety rules compliance.

Grand Awards Judging

The focus of this committee is to coordinate the recruitment and category assignments of judges. The committee also oversees the work of the judges during the fair, collects and reports the results to the Awards Ceremony committee.

Photography

The focus of this committee is to coordinate the volunteers who take the official photo of Finalists at their projects and the photo of winners at the Awards Ceremony. This committee is also responsible for sending a copy of the official photo to the Finalist, their Regional Fair Director and the CSEF Director.

Publicity

The focus of this committee is to maintain a current list of media contacts around the state of Colorado and to send out press releases to these contacts as deemed appropriate to gain exposure for CSEF. This committee is also responsible for inviting VIPs and media contacts to CSEF for interaction with the Finalists.

Registration

The focus of this committee is to maintain and prepare Finalist registration materials for SRC review and check-in at CSEF.

Room Set-Up

The focus of this committee is to design the layout of the exhibit hall space, taking into account electrical, floor and table space requirements. This committee is also responsible for coordinating with the Lory Student Center for room and material needs and to coordinate the exhibit space set-up at CSEF.

Scholarships

This committee is comprised of representatives from the colleges, universities and organizations providing scholarship money to Finalists through CSEF. Members are responsible for updating the scholarship descriptions each year and advising their institutions of any changes made by CSEF that might affect the number or type of scholarships given.

Scientific Review

The focus of this committee is to review Finalist paperwork for compliance with the ISEF rules and guidelines for student scientific research. The SRC must be comprised of a biomedical scientist (Ph.D., MD, DVM, DDS or DO), a science teacher, and at least one other person.

Special Awards

The focus of this committee is to solicit organizations to give special awards to Finalists based on criteria that the organization sets. This committee is also responsible for overseeing the special award judging process during the fair and report the results to the Awards Ceremony committee.

Student Activities

The focus of this committee is to arrange for the pizza party on Saturday and the guest speaker on Friday.

Tours

The focus of this committee is to arrange for tours and/or presentations of local/university science labs for the Finalists.

Volunteer Coordination

The focus of this committee is to arrange for volunteers to help with photography, display & safety, registration, room set-up, door monitoring, and the awards ceremony. This committee is also responsible for directing volunteers at CSEF.

Appendix 1
60th Annual Colorado Science and Engineering Fair

All 2015 CSEF Events will be held at the Lory Student Center on the Colorado State University – Fort Collins campus. The CSEF Headquarters will be the Registration Booth on the 3rd floor of the LSC.

Thursday, April 9, 2015

Finalist Schedule

8:30 a.m. – 11:30 a.m.	SRC Interviews – <i>Interviews must be completed BEFORE a project may be set up.</i>	Room 308/310
9:00 a.m. – 11:00 a.m.	Junior and Senior Division Finalist Check-In	Main Ballroom Foyer
<i>Finalists MUST stay with their exhibit until Display & Safety Inspection has been done and an Official Photo has been taken. Finalists must be out of the exhibit areas by 11:30 a.m.</i>		
1:30 p.m. – 5:00 p.m.	Judging – <i>Students must be at their exhibits for interviews.</i>	Main Ballroom

Adult Schedule

1:30 – 2:00 p.m.	ISEF Rules Update & Discussion	Room 312
2:00 – 4:00 p.m.	Project Learning Tree Professional Development for Secondary Teachers <i>(pre-registration required)</i>	Room 312

Judging Schedule

9:15 a.m. – 9:45 a.m.	Grand Awards Judge Captains' Briefing	LSC Theater
10:00 a.m. – 11:00a.m.	Grand Awards Judges' Briefing	LSC Theater
11:00 a.m. – 12:00 noon	Grand Awards Judges' Luncheon	LSC Theater
12:15 p.m. – 12:30 p.m.	Special Awards Judges' Briefing	North Ballroom
12:00 noon – 5:00 p.m.	Judging	Main Ballroom
12:00 – 12:30 p.m.	Grand Award Judges <u>only</u> may enter the exhibit area. <u>Judges only</u> in the exhibit area.	
12:00- 1:30 p.m.	Special Award Judges may enter the exhibit area. <u>Judges only</u> in the exhibit area.	
1:30- 5:00 p.m.	Students will be at their exhibits for interviews	
5:30 p.m.	Exhibit area is locked. Final judging continues. <i>Only Judging Captains and SRC Members are permitted in the exhibit area at this time.</i>	

Friday, April 10, 2015

10:30 a.m. – 5:00 p.m.	CSEF Finalist Exhibits Open to the Public and the Media	Main Ballroom
9:00 a.m. – 10:00 a.m.	Guest Speaker – Mr. Steve Struna, Bayswater Exploration & Production	LSC Theater
10:30 a.m. – 3:00 p.m.	Tours – <i>Everyone is invited to participate in the tours and presentations – registration required.</i>	
2:00 p.m.	Finalist Ballots for Student Choice and Poster Contest are due.	Registration Booth
6:00 p.m.	Awards Ceremony	Timberline Church

Saturday, April 11, 2015

9:00 a.m. – 11:00 a.m.	CSEF Finalist Exhibits Open to the Public and the Media <i>Finalists MUST be at their projects for interaction with the public.</i>	Main Ballroom
9:00 a.m. – 11:00 a.m.	Advisory Council & Regional Fair Directors Meeting – <i>open to all</i>	Room 322
11:00 a.m. – 12:00 noon	Pizza Party - <i>Finalists, adult sponsors, family members and judges are invited.</i> <i>Finalists must be present to win door prizes!</i>	Main Ballroom
12:00 noon – 1:00 p.m.	Exhibit Dismantling - <i>Everything must be removed by 1:00 p.m.</i>	Main Ballroom
12:00 noon – 2:00 p.m.	Board of Directors Meeting – <i>open to all</i>	Room 322

The upcoming Intel International Science and Engineering Fair will be in Pittsburgh, PA May 10 – 15, 2015.
 Next year's Colorado Science and Engineering Fair will be April 7 – 9, 2016 at Colorado State University
 (Dates are subject to change.)

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Junior Division Best CSEF Project

First Place

Kathryn Kummel 6th grade
*The Danger of Drinking Water: How Mountain Lions Affect
Elk Behavior and Aspen Regeneration*
North Middle School Colorado Springs

Second Place

Avery Lin 7th grade
*War on Waves: A Study of Different Coastal Defenses and
Their Effectiveness Against Tsunamis*
Stanley British Primary School Denver

Third Place

Emhyr Subramanian 7th grade
*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*
Cherry Creek Challenge School Denver

Senior Division Best CSEF Project

First Place

Mary Hood 11th grade
*SMART Cane: A Technology Integrated Device to Reduce the
Fall Susceptibility of the Elderly*
Sargent Jr/Sr High School Monte Vista

Second Place

Logan Collins 12th grade
*An RK2 Mediated Bacterial Conjugation Delivery System for
Artificial Genes Coding for Antimicrobial Polypeptides: A
Novel Synthetic Biology Approach to Antibiotic Resistance*
Fairview High School Boulder

Third Place

Elliot Gorokhovskiy 10th grade
A Novel Algorithm for Model Counting
Fairview High School Boulder

Fourth Place

Sam Scheeres 12th grade
Rigorous Constraints on Exchange for the 3-body Problem
Fairview High School Boulder

Junior Division Animal Sciences

First Place

Kathryn Kummel 6th grade
*The Danger of Drinking Water: How Mountain Lions Affect
Elk Behavior and Aspen Regeneration*
North Middle School Colorado Springs

Second Place

Felix Channiago 8th grade
*The Effect of Temperature on Hunting Response Time of Fe-
male Habronattus Jumping Spiders*
West Jefferson Middle School Conifer

Third Place

Dovvie Knowlton 7th grade
Got Doggy Drool
Fowler Junior High School Fowler

Fourth Place

Jacob Wright 8th grade
Wind in My Mane
Walsh Jr/Sr High School Walsh

Honorable Mention

Quinn McConnell 8th grade
The Magic of Enzymes
Peak to Peak Charter School Lafayette

Honorable Mention

Sydnee Roth 8th grade
*Take the Bull by the Heart: The Effects of Energy Drinks on
Heart rate of Daphnia*
Liberty School Joes

Senior Division Animal Sciences

First Place

Margaret Preigh 12th grade
*Pulsing Electromagnetic Radiation at 50/60Hz as a Pest Re-
pellant in Insects*
Fairview High School Boulder

Second Place

Emily Zislis 11th grade
*The Effect of Genetically Modified Soybean Consumption on
Mouse Weight*
Cherry Creek High School Greenwood Village

Third Place

Katie Sanko 11th grade
*The Effects of Imidacloprid Insecticide on Wolf Spiders (Lyc-
sidae): A Pilot Study*
Fairview High School Boulder

Fourth Place

Kaitlyn Dumm 10th grade
*Leftovers to Livestock: Turning Human Food Waste into Live-
stock Feed with Consistent Nutrient Values*
Windsor High School Windsor

Honorable Mention

Jeremiah Etter 11th grade
*Fields for Flight: Effects of Magnetic Fields on Butterfly Nav-
igation*
Monte Vista High School Monte Vista

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Junior Division Behavioral & Social Sciences

First Place

Caroline Jennings 8th grade
Ask Me Twice
 The Classical Academy Colorado Springs

Second Place

Elora Smith 8th grade
The Sweet Smell of You
 Sargent Jr/Sr High School Monte Vista

Third Place

Grace Abraham 8th grade
The Bunny Effect
 Aspen Middle School Aspen

Fourth Place

Clara Foisie 8th grade
Books or Nooks?
 The Classical Academy Colorado Springs

Honorable Mention

Evelyn Bodoni 7th grade
Whatever It Takes
 Cherry Creek Challenge School Denver

Honorable Mention

Amelia Greene 8th grade
*Happy, Sad, Curious, Scared: Which Are You? Children's
 Emotional Response to Musical Chords & Varied Images*
 The Classical Academy Colorado Springs

Honorable Mention

Mia Cravitz 8th grade
 Jane Doherty 8th grade
What Engenders A Leader?
 Stanley British Primary School Denver

Honorable Mention

Meredith Neid 7th grade
 Grace Fuselier 7th grade
Inferiority Inquiry
 Stanley British Primary School Denver

Senior Division Behavioral & Social Sciences

First Place

Serena Rusk 11th grade
*An Analysis of Risk Factors for Developing Low Body Satis-
 faction in Adolescents*
 Fairview High School Boulder

Second Place

Sarena Wells 12th grade
Frustration Responses: An Analysis of Dispositional Learning
 Fort Morgan High School Fort Morgan

Third Place

Carmen Ruggles 11th grade
Can We Recycle That?
 Center High School Center

Fourth Place

Alexandria Sinker 11th grade
 Alan Pence 11th grade
Are Pueblo Vehicle Repair Shops Sexist?
 Dolores Huerta Preparatory High School Pueblo

Honorable Mention

Johanna Mackay 10th grade
 Bryanna Davis 10th grade
*Shooting Accuracy of an Individual Within Varying Tempera-
 tures*
 Edison High School Yoder

Honorable Mention

Kaleb Mora 11th grade
 Angela Nelson 11th grade
 Bryan Adams-Colon 11th grade
How Fast Are You?
 Central High School Pueblo

Junior Division Chemistry

First Place

Emhyr Subramanian 7th grade
*Potential Biodegradable Alternatives to Current Petroleum-
 Based Surfactants for Oil Spill Cleanup*
 Cherry Creek Challenge School Denver

Second Place

Calista Law 7th grade
Eco-Plastics
 Boulder Country Day School Boulder

Third Place

Nicole Miller 7th grade
Blue Bottle Blues
 Ortega Middle School Alamosa

Fourth Place

Nethaniel Kiraly 7th grade
Fire Reducers
 Knowledge Quest Academy Milliken

Honorable Mention

Connor McCauley 7th grade
Vitamin C in Vegetables
 Blessed Sacrament Catholic School Denver

Honorable Mention

Dustin Medina 6th grade
Extracting Strawberry DNA
 Corwin International Magnet School Pueblo

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Senior Division Chemistry

First Place

Sirisha Gudavalli 10th grade
Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals
Fairview High School Boulder

Second Place

Annie Chen 10th grade
Determining the Stiffness Threshold of a PEG Hydrogel for Motor Neuron Axon Extension
Boulder High School Boulder

Third Place

Sofia Antal 11th grade
Growth and Testing of New Cocrystals, Part 2
Cherry Creek High School Greenwood Village

Fourth Place

Shelly Steinert 11th grade
Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash
Sargent Jr/Sr High School Monte Vista

Honorable Mention

Richard Mallory 11th grade
Hazardous Waste to Renewable Energy
The Classical Academy College Pathways Colorado Springs

Junior Division Earth & Space Sciences

First Place

Sara Nehring 6th grade
The Moon Is So Bright: Do You Need Sunglasses at Night?
Monte Vista Middle School Monte Vista

Second Place

Max Warnock 7th grade
Testing the Viking Sunstone Legend
Home School Fort Collins

Third Place

Jordyn Hall 8th grade
Temperamental Twisters
Peak to Peak Charter School Lafayette

Fourth Place

Elani Frantz 8th grade
Paige Lessig 8th grade
What's the Weather Forecast in Space?
North Middle School Colorado Springs

Honorable Mention

William Highfill 6th grade
Spoiled Rotten
Corwin International Magnet School Pueblo

Honorable Mention

Antonio Campos 8th grade
Why Is Venice Sinking?
Cherry Creek Challenge School Denver

Honorable Mention

Joshua Miller 6th grade
What Type of Soil Best Supports a House During a Liquefaction Event?
Skinner Middle School Denver

Senior Division Earth & Space Sciences

First Place

Jesse Zhang 12th grade
Effect of the Atlantic Ocean on Sudden Stratospheric Warming
Fairview High School Boulder

Second Place

Casey Zhang 11th grade
The QBO and Solar Cycle Modulation in the Lower Atmosphere
Fairview High School Boulder

Third Place

Ivo Erben 11th grade
The Effect of Climate on a Glacier's ELA and Ablation Gradient
Boulder High School Boulder

Junior Division Energy & Transportation

First Place

Mark Bloomfield 7th grade
Blow Out: Scaling Down Compressed Air Energy Storage for Household Use
Holmes Middle School Colorado Springs

Second Place

Maia Drugmand 8th grade
Dirty Energy
Peak to Peak Charter School Lafayette

Third Place

Parker Randolph 8th grade
Potential Pitch: The Effect of Sound Frequency on Electricity Generation
Monte Vista Middle School Monte Vista

Fourth Place

Kendrick Castillo 8th grade
Isn't Electricity "Grey?"
Notre Dame Catholic School Denver

Honorable Mention

Joe Haase 6th grade
Easy Breezy
Eads Middle School Eads

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Senior Division Energy & Transportation

First Place

Trevor Jordan 11th grade
A Wing of the Future: Part II
 Animas High School Durango

Second Place

Kelsey Lindbloom 11th grade
*Fueling the Future Phase 4: Constructing an Aqueous Vehicle
 Powered by a Microbial Fuel Cell*
 Salida High School Salida

Third Place

Sanjna Bhartiya 12th grade
 Apoorva Krishnan 11th grade
Preventing the Degradation of Dye-Sensitized Solar Cells
 Cherry Creek High School Greenwood Village

Fourth Place

Max Markuson DiPrince 9th grade
*Windmill Efficiency: Using a 3D Printer to Engineer More
 Efficient Windmill Blades*
 Central High School Pueblo

Honorable Mention

Austin Katzer 11th grade
 Cameron Van Vleet 11th grade
 Noah Haswell 11th grade
Is Biodiesel Really Green?
 Paonia Jr/Sr High School Paonia

Junior Division Engineering

First Place

Cristian Granados 8th grade
Put A Little Spring in Your Step
 North Middle School Colorado Springs

Second Place

Pranav Subramanian 8th grade
*Ultrasonic-Based Optics Utilized for the Blind and Visually
 Impaired*
 Campus Middle School Greenwood Village

Third Place

Ethan Gearhart 8th grade
*The Great Color Sort: Developing an Arduino Based Laundry
 Sorter*
 Sargent Jr/Sr High School Monte Vista

Fourth Place

Cole Palmer 7th grade
Catch E'm If You Can
 The Classical Academy Colorado Springs

Honorable Mention

Finn Stowers 8th grade
*Frac Fluid Friction: Does Sand Grain Size Affect the Viscosity
 of Hydraulic Fracturing Fluid?*
 St. Columba Catholic School Durango

Honorable Mention

Devin Conn 6th grade
Sound Propagation Sensing in the Stratosphere
 Corwin International Magnet School Pueblo

Honorable Mention

Scott Prieve 6th grade
*Let It Flow: What Rate Will Different Volumes of Water Travel
 Down Different Shaped Channels?*
 North Middle School Colorado Springs

Senior Division Engineering

First Place

Mary Hood 11th grade
*SMART Cane: A Technology Integrated Device to Reduce the
 Fall Susceptibility of the Elderly*
 Sargent Jr/Sr High School Monte Vista

Second Place

Ian Wilkins 12th grade
*Optimizing 3D CAD Scanning Algorithms Through Multi-
 Sensor Data Input*
 Fairview High School Boulder

Third Place

Kevyn Kelso 10th grade
Automatic Trombone Tuner
 The Classical Academy Colorado Springs

Fourth Place

Leighton Burt 10th grade
*Life Saving Locating: Developing Autonomous Avalanche
 Rescue*
 Sargent Jr/Sr High School Monte Vista

Honorable Mention

Isaac Jordan 9th grade
Save the World, Bomb the Forest
 Animas High School Durango

Junior Division Environmental Sciences

First Place

Avery Lin 7th grade
*War on Waves: A Study of Different Coastal Defenses and
 Their Effectiveness Against Tsunamis*
 Stanley British Primary School Denver

Second Place

Advaita Singh 8th grade
Effects of Ultraviolet Radiation on Planaria
 Cherry Creek Challenge School Denver

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Third Place

Jonathan Haerr 7th grade
Dead in the Water
The Classical Academy Colorado Springs

Fourth Place

Vanessa Haggans 8th grade
Can I Drink It?: Backcountry Water Quality in Boulder County and Its Safety for Runners
Summit Charter Middle School Boulder

Honorable Mention

Jordan Elder 7th grade
McKenzy Howerton 7th grade
Got Dirt? Coagulation Experimentation
Dolores Middle School Dolores

Honorable Mention

Dylan Dorskocil 8th grade
Biochar and Fungus to the Rescue: Acid Mine Soil Reclamation
Bayfield Middle School Bayfield

Honorable Mention

Claire McHenry 8th grade
Water Stabilization
Knowledge Quest Academy Milliken

Honorable Mention

Lacey Niccoli 8th grade
Denatured: The Effects of pH on Germination
Liberty School Joes

Honorable Mention

Katelynn Salmon 8th grade
Effect of Microbeads on Daphnia Heart Rate
Monument Academy Monument

Senior Division Environmental Sciences

First Place

Hannah Hartung 12th grade
Effects of Parasites from Long Term Invasive Fish on Native Amphibians in the California Bay Area
Fairview High School Boulder

Second Place

Casey Shaw 9th grade
Arrested Development: Glyphosate-Based Herbicides on the Embryonic Development of Zebra Danios
Liberty School Joes

Third Place

Michelle Kummel 9th grade
A Spoonful of Sugar Helps the Nitrate Go Down: Denitrification in Wetland Soil
Palmer High School Colorado Springs

Fourth Place

Parker Revers 11th grade
Transmission of Ichthyophthirius Multifiliis in Aquatic Environment Dependent on Varying Temperature
Cherry Creek High School Greenwood Village

Honorable Mention

Anne Cox 12th grade
Modeled and Observed Coupling of Climate Change on Aedes aegypti
Nederland Middle/Senior High School Nederland

Honorable Mention

Hannah Fischer 10th grade
Pharmacoenvironmentology: Developing a Baseline for PPCP Contaminant Levels at the MVNWR
Sierra Grande Jr/Sr High School Blanca

Honorable Mention

Emma Scholz 12th grade
Geographical Correlation Maps of Malaria Hemoglobin SS Disease Allele Frequency and Eco. of Ethiopia
Sterling High School Sterling

Honorable Mention

Colby Self 9th grade
How Did the Papoose Fire Affect the Timber Volume on the Rio Grande National Forest?
Monte Vista High School Monte Vista

Junior Division

Mathematics & Computer Sciences

First Place

Jack Stade 8th grade
Modeling Parasitic Relations Using Computer Models
Nevin Platt Middle School Boulder

Second Place

Molly Nehring 8th grade
Genetic Algorithms: Solving Math Problems Using Ideas from Nature
Monte Vista Middle School Monte Vista

Third Place

Joshua Bennett 8th grade
Cracking the Code
Pueblo School for Arts and Sciences Pueblo

Fourth Place

Chase Cromwell 7th grade
Raspberry Pi Password Cracker
Lamar Middle School Lamar

Honorable Mention

Benjamin Ferraro 8th grade
The Ultimate Goal: How Angles and Placement Affect Goal Scoring Probability
American Academy Castle Pines

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Senior Division

Mathematics & Computer Sciences

First Place

Elliot Gorokhovsky 10th grade
A Novel Algorithm for Model Counting
 Fairview High School Boulder

Second Place

Avi Swartz 10th grade
 Tyler Giallanza 10th grade
 Ian Johnson 12th grade
Developing a Class Scheduling Program with Minimum Con-
flicts for Large Schools
 Cherry Creek High School Greenwood Village

Third Place

Eric Sun 11th grade
Measuring Aging Rates in the SardiNIA Population Using
Pattern Recognition
 Pueblo West High School Pueblo West

Fourth Place

Robert Meikle 9th grade
Graphing Calculator Application
 Sand Creek High School Colorado Springs

Honorable Mention

Andrew Barlow 12th grade
 Ryan Bennett 12th grade
Solar Mapping; Sunspot Variability and Irradiance
 Monarch High School Louisville

Junior Division

Medicine & Health

First Place

Sam Duarte 7th grade
Bagpipes and Earplugs: Should Great Highland Bagpipe
Players Use Earplugs When Practicing?
 Quest Academy Dacono

Second Place

Edwin Bodoni 8th grade
Dental Implants: The Healthier Alternative
 Cherry Creek Challenge School Denver

Third Place

Maia Garby 8th grade
Honey and Glycerin: A Natural Antibacterial Agent
 Summit Charter Middle School Boulder

Fourth Place

Laura Clark 7th grade
Paper Microfluidics: Medical Diagnostics for the Developing
World
 St. Columba Catholic School Durango

Honorable Mention

Olivia Jacobsen 7th grade
Weapons of Mass Percussion
 The Classical Academy Colorado Springs

Honorable Mention

Kyrie Milliron 8th grade
To Vitamin D or Not To Vitamin D
 The Classical Academy Colorado Springs

Honorable Mention

Isla Anderson 7th grade
The Affects of Antibiotics and Antiseptics on Skin Staphylo-
coccus Species
 Skinner Middle School Denver

Honorable Mention

Madeline Steinle 8th grade
The Effects of Aspartame on Cognitive Abilities
 Trinity Lutheran School Pueblo

Honorable Mention

Cody Robinson 8th grade
The Effects of Laser Therapy on Cell Regeneration
 Liberty School Joes

Honorable Mention

Brooke Younger 7th grade
 Amy Weisensee 7th grade
An Energetic "Eggs"periment
 Limon Schools Limon

Senior Division

Medicine & Health

First Place

Jonathan Snedeker 12th grade
Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy
for Acute Myeloid Leukemia
 Fairview High School Boulder

Second Place

Sirey Zhang 11th grade
Multiarray Data Analysis to Map the Cellular Interaction in a
Mouse Model of Familial ALS
 Cherry Creek High School Greenwood Village

Third Place

Alison Weinberger 11th grade
Is Homeopathy More Than A Placebo? Assessing Homeo-
pathic Principles Using A Fruit Fly Model
 Cherry Creek High School Greenwood Village

Fourth Place

Hari Sowrirajan 9th grade
Nanoparticle-Induced Macrophage Atherogenesis
 Cherry Creek High School Greenwood Village

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Honorable Mention

Madeline Goosman 11th grade
Mandarin Tone Perception in Simulations of Electro-Acoustic and Cochlear-Implant Hearing
Fairview High School Boulder

Honorable Mention

Jayden Durbin 12th grade
Vitamin D Stimulates the mRNA Expression of ACPP in LNCaP Cells
Haxtun High School Haxtun

Junior Division Microbiology

First Place

Taylor Dower 8th grade
Playground Bacterial Levels Comparison
Turner Middle School Berthoud

Second Place

Madison Searles 7th grade
A Comparison of Antibacterial Hand Cleansing Solutions and Their Effectiveness on Killing Bacteria
STEM Academy Highlands Ranch

Third Place

Camryn Haines 8th grade
Sophie Supenor 8th grade
Dirty Dollar
Knowledge Quest Academy Milliken

Fourth Place

Dominique Bear 8th grade
Lilly Kinsella 8th grade
School Scare
Knowledge Quest Academy Milliken

Honorable Mention

Nicholas Entin 8th grade
Bacterial Growth Inhibition
Peak to Peak Charter School Lafayette

Senior Division Microbiology

First Place

Logan Collins 12th grade
An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance
Fairview High School Boulder

Second Place

Rebecca Bloomfield 10th grade
Competence Dependent Chemotaxis and Genomic Repair in Acinetobacter baylyi
Palmer High School Colorado Springs

Third Place

Anit Tyagi 9th grade
Diurnal Variation of E. coli in an Urban Stream
Cherry Creek High School Greenwood Village

Fourth Place

Jordan Nahabetian 12th grade
Riley Schroeder 12th grade
Abby Timmermeyer 12th grade
Rocky Waters Filtration
Sand Creek High School Colorado Springs

Honorable Mention

Eileen Xia 10th grade
Phosphatidylinositol-3 Kinase p110a Isoform Inhibits Anti-body Switch
Cherry Creek High School Greenwood Village

Junior Division Physics

First Place

Brendan Gould 7th grade
Analyzing the Effects of Various Materials on a Magnetic Field
The Classical Academy Colorado Springs

Second Place

John Quinn 8th grade
Wind, Wings, and Lift
Summit Charter Middle School Boulder

Third Place

Connor Voss 8th grade
Loop the Loop: Rollercoaster Physics
Beulah School of Natural Sciences Beulah

Fourth Place

Dylan Jessen 7th grade
The Effect of Voltage, Vacuum and Anode Material on Electron Acceleration
American Academy Castle Pines

Honorable Mention

Adam Vagle 7th grade
Avoiding Armageddon
Stanley British Primary School Denver

Honorable Mention

Jonathan Ballard 8th grade
Precision of an Ultrasonic Sensor
Eaton Middle School Eaton

Honorable Mention

Asher Hogan 7th grade
Sound Trap
The Classical Academy Colorado Springs

2015 Colorado Science and Engineering Fair Grand Awards Press Release

Honorable Mention

Paige Newman 7th grade
The Effect of Air Pressure on Different Brands of Duct Tape
North Arvada Middle School Arvada

Senior Division Physics

First Place

Sam Scheeres 12th grade
Rigorous Constraints on Exchange for the 3-body Problem
Fairview High School Boulder

Second Place

Haley Weinstein 11th grade
Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing
Fairview High School Boulder

Third Place

Daniel Sidman 9th grade
Radiant Heat 3 2 1 . . . Ignition
Palmer High School Colorado Springs

Fourth Place

Emma Frantz 12th grade
Harnessing the Marangoni Effect
Palmer High School Colorado Springs

Honorable Mention

Thomas Manuel 9th grade
Slow a Bullet To Save a Life
Walsh Jr/Sr High School Walsh

Honorable Mention

Ben Sheffer 11th grade
The Effects of Electron Beam Dose on the Visible Spectroscopic Signatures of Thin C60 Films
Eaglecrest High School Centennial

Junior Division Plant Sciences

First Place

Alicia Wu 8th grade
The Acidulous Truth About the Flora of Our Environment
Summit Charter Middle School Boulder

Second Place

Sarah Duzenack 6th grade
A Comparison of Endomycorrhizae and Commercial Fertilizer on Bent and Blue Grass
La Veta Jr/Sr High School La Veta

Third Place

Clay Kimberling 7th grade
Stop the Mold
Sargent Jr/Sr High School Monte Vista

Fourth Place

Riley Ruff 7th grade
Battle of the Elements: Water vs. Earth
North Arvada Middle School Arvada

Honorable Mention

Tyson Lichty 8th grade
All Hail! Hail Resistance?
Liberty School Joes

Honorable Mention

Soneva Scott 7th grade
Aquaponic Growth Speed vs Soil Growth Speed
STEM Academy Highlands Ranch

Senior Division Plant Sciences

First Place

Jessica Shand 10th grade
Analysis of Spermatophyte Divergence to Expedite Identification of Novel Drug Candidates
Discovery Canyon Campus Colorado Springs

Second Place

Mitchell Fosdick 10th grade
Phase III: Further Identification of Isolated Green Fuel Compounds.
Fowler High School Fowler

Third Place

Kaixin Cui 11th grade
Evolutionary Analysis of Cestrum in the Antilles Based on Phylogenetic Relationships and Time Axis
Fairview High School Boulder

Fourth Place

Shlok Rathi 9th grade
Antioxidant Activities in Colored Potato Tubers
Alamosa High School Alamosa

Honorable Mention

Abbey Brower 10th grade
Utilizing Crop Rotation for Nutrient Replacement
Sterling High School Sterling

2015 Colorado Science and Engineering Fair Special Awards Press Release

Pioneers of Science - Rosalie Barrow Edge

Cassandra Blew 8th grade
\$50, certificate
La Veta Jr/Sr High School La Veta
*Beneath the Ashes: How to Reduce Flash Flooding Rates on
Hydrophobic Soil Layers After a Fire*

Pioneers of Science - Rosalind Franklin

Jessica Fiala 8th grade
\$50, certificate
St. Columba Catholic School Durango
Disinfecting Power

Pioneers of Science - Sally Ride

Alexandra MacAskill 8th grade
\$50, certificate, poster of pioneer scientist
Holy Family Catholic School Grand Junction
Rock On!

Military

United States Air Force

US Air Force Award

Michael Nichols 8th grade
certificate, laptop backpack, rotating flash drive, portable ear-
buds, 4-port hub
Brush Middle School Brush
Predicting Aircraft Stealth with Light Waves

Isabel Kahler 8th grade
certificate, laptop backpack, rotating flash drive, portable ear-
buds, 4-port hub
Corwin International Magnet School Pueblo
Defying Gravity

Devin Conn 6th grade
certificate, laptop backpack, rotating flash drive, portable ear-
buds, 4-port hub
Corwin International Magnet School Pueblo
Sound Propagation Sensing in the Stratosphere

Sam Cuthbertson 12th grade
Jordan Hammer 12th grade
John Elliott 12th grade
certificate, messenger bag, card reader/writer, custom single
speaker, beta adapter set
Centaurus High School Lafayette
Phoenix Drone

Shepherd Kruse 10th grade
certificate, messenger bag, card reader/writer, custom single
speaker, beta adapter set
Home School Colorado Springs
*Designing and Evaluating an Aerospike Rocket Engine for
Increased Thrust*

United States Navy & Marine Corps

Office of Naval Research Award

Emhyr Subramanian 7th grade
certificate, medallion
Cherry Creek Challenge School Denver
*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*

Dovvie Knowlton 7th grade
certificate, medallion
Fowler Junior High School Fowler
Got Doggy Drool

Robin Bahrami 8th grade
certificate, medallion
Summit Charter Middle School Boulder
*The Soundasaurus: Digital Sound Analysis Using Signal Pro-
cessing Algorithms*

Avery Lin 7th grade
certificate, medallion
Stanley British Primary School Denver
*War on Waves: A Study of Different Coastal Defenses and
Their Effectiveness Against Tsunamis*

Cristian Granados 8th grade
certificate, medallion
North Middle School Colorado Springs
Put A Little Spring in Your Step

Connor Voss 8th grade
certificate, medallion
Beulah School of Natural Sciences Beulah
Loop the Loop: Rollercoaster Physics

Brendan Gould 7th grade
certificate, medallion
The Classical Academy Colorado Springs
*Analyzing the Effects of Various Materials on a Magnetic
Field*

Trevor Jordan 11th grade
certificate, medallion, \$75 gift certificate
Animas High School Durango
A Wing of the Future: Part II

Logan Collins 12th grade
certificate, medallion, \$75 gift certificate
Fairview High School Boulder
*An RK2 Mediated Bacterial Conjugation Delivery System for
Artificial Genes Coding for Antimicrobial Polypeptides: A
Novel Synthetic Biology Approach to Antibiotic Resistance*

Max Markuson DiPrince 9th grade
certificate, medallion, \$75 gift certificate
Central High School Pueblo
*Windmill Efficiency: Using a 3D Printer to Engineer More
Efficient Windmill Blades*

2015 Colorado Science and Engineering Fair Special Awards Press Release

Organizational

Air & Waste Management Association Rocky Mountain States Section

Dylan Doskocil \$100 Bayfield Middle school <i>Biochar and Fungus to the Rescue: Acid Mine Soil Reclamation</i>	8th grade Bayfield
Bridgit Hebner \$100 American Academy <i>Clear as Mud: BPA Found in Water Bottles at Varying Temperatures</i>	7th grade Parker
Vanessa Haggans \$50 Summit Charter Middle School <i>Can I Drink It?: Backcountry Water Quality in Boulder County and Its Safety for Runners</i>	8th grade Boulder
Ruggles \$100 Center High School <i>Can We Recycle That?</i>	11th grade Center
Anne Cox \$50 Nederland Middle/Senior High <i>Modeled and Observed Coupling of Climate Change on <i>Aedes aegypti</i></i>	12th grade Nederland
Mitchell Fosdick \$100 Fowler High School <i>Phase III: Further Identification of Isolated Green Fuel Compounds.</i>	10th grade Fowler

American Association of University Women AAUW Award for Women in STEM

Aubree Rybacki \$100 Alta Vista Charter School <i>Oh! It's OPI</i>	6th grade Lamar
Mary Hood \$100 Sargent Jr/Sr High School <i>SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly</i>	11th grade Monte Vista

American Chemical Society Colorado Local Section

ACS Colorado Local Section Award

Shelly Steinert certificate, \$25 Sargent Jr/Sr High School <i>Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash</i>	11th grade Monte Vista
Connor McCauley certificate, \$25 Blessed Sacrament Catholic <i>Vitamin C in Vegetables</i>	7th grade Denver
Rachelle Pierce certificate, \$25 Knowledge Quest Academy <i>Salt and Ice</i>	7th grade Milliken
Madison Luczak certificate, \$25 Windsor Charter Academy <i>Do You Have To See It To Believe?</i>	7th grade Windsor
Calista Law certificate, \$100 Boulder Country Day School <i>Eco-Plastics</i>	7th grade Boulder
Sofia Antal certificate, \$100 Cherry Creek High School <i>Growth and Testing of New Cocrytals, Part 2</i>	11th grade Greenwood Village

American Industrial Hygiene Association Rocky Mountain Section

AIHA-RMS Excellence in Protection of Health & the Environment Award

Sam Duarte certificate Quest Academy <i>Bagpipes and Earplugs: Should Great Highland Bagpipe Players Use Earplugs When Practicing?</i>	7th grade Dacono
Hari Sowrirajan \$100 Cherry Creek High School <i>Nanoparticle-Induced Macrophage Atherogenesis</i>	9th grade Greenwood Village

American Institute of Aeronautics and Astronautics, Rocky Mountain Section

AIAA Rocky Mountain Section Award

John Quinn arduino kit, 1-year AIAA student membership Summit Charter Middle School <i>Wind, Wings, and Lift</i>	8th grade Boulder
---	--------------------------

2015 Colorado Science and Engineering Fair Special Awards Press Release

Devin Conn arduino kit, 1-year AIAA student membership Corwin International Magnet <i>Sound Propagation Sensing in the Stratosphere</i>	6th grade Pueblo	Ivo Erben \$100 Boulder High School <i>The Effect of Climate on a Glacier's ELA and Ablation Gradient</i>	11th grade Boulder
Shepherd Kruse arduino kit, 1-year AIAA student membership Home School <i>Designing and Evaluating an Aerospike Rocket Engine for Increased Thrust</i>	10th grade Colorado Springs	Hannah deKay Raelen Barr \$200 Silverton Schools <i>Investigating Innovative Tools and Techniques for Heavy Metal Mapping in Historic Mining District</i>	10th grade 10th grade Silverton
Derrick Zanoni arduino kit, 1-year AIAA student membership Silverton Schools <i>Multi-Purpose Robo Glove</i>	10th grade Silverton		

American Institute of Chemical Engineers Rocky Mountain Section

Finn Stowers \$75 St. Columba Catholic School <i>Frac Fluid Friction: Does Sand Grain Size Affect the Viscosity of Hydraulic Fracturing Fluid?</i>	8th grade Durango
Jocelyn Sanchez \$100 Corwin International Magnet <i>Candy Chromatography</i>	6th grade Pueblo
Liam Foster \$75 Animas High School <i>Testing the Water: A Review of Various Acid Mine Drainage Remediation Options</i>	9th grade Durango
Sofia Antal \$100 Cherry Creek High School <i>Growth and Testing of New Cocrystals, Part 2</i>	11th grade Greenwood Village

American Institute of Professional Geologists Colorado Section

AIPG Certificate of Excellence in the Geosciences

Joshua Miller \$100 Skinner Middle School <i>What Type of Soil Best Supports a House During a Liquefaction Event?</i>	6th grade Denver
Dylan Doscocil \$200 Bayfield Middle school <i>Biochar and Fungus to the Rescue: Acid Mine Soil Reclamation</i>	8th grade Bayfield

American Meteorological Society

Outstanding Achievement in Atmospheric Sciences

Elani Frantz Paige Lessig certificate, gift certificate North Middle School <i>What's the Weather Forecast in Space?</i>	8th grade 8th grade Colorado Springs
Casey Zhang certificate, gift certificate Fairview High School <i>The QBO and Solar Cycle Modulation in the Lower Atmosphere</i>	11th grade Boulder
Jesse Zhang certificate, gift certificate Fairview High School <i>Effect of the Atlantic Ocean on Sudden Stratospheric Warming</i>	12th grade Boulder

American Public Power Association

Demonstration of Energy Efficient Developments

DEED Energy & Efficiency Innovation Award

Alia Kraxberger \$50 Genoa-Hugo School <i>Number of Blades vs. Efficiency</i>	8th grade Hugo
Taylor Coons Dante Pasionek \$75 Nederland Middle/Senior High <i>The Ideal Energy Efficient Home: An Arduino Based Project</i>	12th grade 12th grade Nederland

DEED Environmental Innovation Award

Luke Rohlwing \$50 American Academy <i>Solar Cell Jenga: Increasing Energy Capacity with Stacked Photovoltaic Solar Panels</i>	8th grade Castle Pines
Richard Mallory \$75 The Classical Academy College <i>Hazardous Waste to Renewable Energy</i>	11th grade Colorado Springs

2015 Colorado Science and Engineering Fair Special Awards Press Release

American Statistical Association Colorado/Wyoming Chapter David Young Memorial Award

Amelia Greene 8th grade
\$200, student membership in the American Statistical Association, acknowledgement at chapter spring meeting and on chapter web site
The Classical Academy Colorado Springs
Happy, Sad, Curious, Scared: Which Are You? Children's Emotional Response to Musical Chords & Varied Images

Michelle Kummel 9th grade
\$200, student membership in the American Statistical Association, acknowledgement at chapter spring meeting and on chapter web site
Palmer High School Colorado Springs
A Spoonful of Sugar Helps the Nitrate Go Down: Denitrification in Wetland Soil

American Vacuum Society Rocky Mountain Chapter

Dylan Jessen 7th grade
\$50, \$50 to teacher/sponsor
American Academy Castle Pines
The Effect of Voltage, Vacuum and Anode Material on Electron Acceleration

Jordyn Hall 8th grade
\$100, \$100 to teacher/sponsor
Peak to Peak Charter School Lafayette
Temperamental Twisters

Emma Frantz 12th grade
\$50, \$50 to teacher/sponsor
Palmer High School Colorado Springs
Harnessing the Marangoni Effect

Sirisha Gudavalli 10th grade
\$100, \$100 to teacher/sponsor
Fairview High School Boulder
Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals

American Water Works Association Rocky Mountain Section & Rocky Mountain Water Environment Association

Katelynn Salmon 8th grade
certificate, \$200
Monument Academy Monument
Effect of Microbeads on Daphnia Heart Rate

Emhyr Subramanian 7th grade
certificate, \$400
Cherry Creek Challenge School Denver
Potential Biodegradable Alternatives to Current Petroleum-Based Surfactants for Oil Spill Cleanup

Hannah Fischer 10th grade
certificate, \$200
Sierra Grande Jr/Sr High School Blanca
Pharmacoenvironmentology: Developing a Baseline for PPCP Contaminant Levels at the MVNWR

Liam Foster 9th grade
certificate, \$400
Animas High School Durango
Testing the Water: A Review of Various Acid Mine Drainage Remediation Options

ASM International

ASM Materials Education Foundation Award

Haley Weinstein 11th grade
\$100
Fairview High School Boulder
Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing

Sirisha Gudavalli 10th grade
\$150
Fairview High School Boulder
Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals

Colorado Association of Meat Processors Meat Science/Food Safety Award

Kaitlyn Dumm 10th grade
certificate, \$70
Windsor High School Windsor
Leftovers to Livestock: Turning Human Food Waste into Livestock Feed with Consistent Nutrient Values

Colorado Association of Science Teachers

Grace Gulig 7th grade
\$75
Monument Academy Monument
Keeping Soil in Its Place

Madeline Steinle 8th grade
\$75
Trinity Lutheran School Pueblo
The Effects of Aspartame on Cognitive Abilities

Emma Scholz 12th grade
\$75
Sterling High School Sterling
Geographical Correlation Maps of Malaria Hemoglobin SS Disease Allele Frequency and Eco. of Ethiopia

Syree Gunnels 10th grade
\$75
Sargent Jr/Sr High School Monte Vista
Extraction of Health Benefiting Compounds in Colored Potato Tubers

2015 Colorado Science and Engineering Fair Special Awards Press Release

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

Kathryn Kummel 6th grade
certificate, \$75
North Middle School Colorado Springs
*The Danger of Drinking Water: How Mountain Lions Affect
Elk Behavior and Aspen Regeneration*

Logan Collins 12th grade
certificate, \$75
Fairview High School Boulder
*An RK2 Mediated Bacterial Conjugation Delivery System for
Artificial Genes Coding for Antimicrobial Polypeptides: A
Novel Synthetic Biology Approach to Antibiotic Resistance*

Colorado BioScience Institute *BioGENEius Challenge*

Jonathan Snedeker 12th grade
all-expense paid trip to compete at the US National competi-
tion held in Philadelphia, PA, June 2015
Fairview High School Boulder
*Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy
for Acute Myeloid Leukemia*

Colorado Chemistry Teachers Association *CCTA Chemistry Award*

Richard Mallory 11th grade
\$100
The Classical Academy College Colorado Springs
Hazardous Waste to Renewable Energy

Connor McCauley 7th grade
\$100
Blessed Sacrament Catholic Denver
Vitamin C in Vegetables

Colorado Dental Association

Grace Varga 7th grade
\$50 gift card
American Academy Parker
*Brush It or Buzz It: The Comparison of Rotating and Vibrat-
ing Toothbrushes*

Edwin Bodoni 8th grade
\$100 gift card
Cherry Creek Challenge School Denver
Dental Implants: The Healthier Alternative

Dakota Cook 8th grade
\$50 gift card
Walsh Jr/Sr High School Walsh
Dental Disintegration

Jenner Dunn 9th grade
Julia Mathews 9th grade
2 \$50 gift cards
Brush High School Brush
The Effects of Citric and Phosphoric Acid on Tooth Enamel

Colorado Division of Reclamation, Mining & Safety

Outstanding Earth Science Award

Dylan Dorskocil 8th grade
\$75
Bayfield Middle school Bayfield
*Biochar and Fungus to the Rescue: Acid Mine Soil Reclama-
tion*

Liam Foster 9th grade
\$75
Animas High School Durango
*Testing the Water: A Review of Various Acid Mine Drainage
Remediation Options*

Colorado Environmental Health Association

Emhyr Subramanian 7th grade
\$75, framed certificate
Cherry Creek Challenge School Denver
*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*

Hannah Fischer 10th grade
\$150, framed certificate, invitation to exhibit at the CEHA
Annual Educational Conference
Sierra Grande Jr/Sr High School Blanca
*Pharmacoenviromentology: Developing a Baseline for PPCP
Contaminant Levels at the MVNWR*

Colorado Foundation for Agriculture *Agriculture in the Classroom Award*

Dylan Dorskocil 8th grade
\$50, certificate
Bayfield Middle school Bayfield
*Biochar and Fungus to the Rescue: Acid Mine Soil Reclama-
tion*

Lacey Niccoli 8th grade
\$50, certificate
Liberty School Joes
Denatured: The Effects of pH on Germination

Syree Gunnels 10th grade
\$50, certificate
Sargent Jr/Sr High School Monte Vista
*Extraction of Health Benefiting Compounds in Colored Potato
Tubers*

Margaret Preigh 12th grade
\$50, certificate
Fairview High School Boulder
*Pulsing Electromagnetic Radiation at 50/60Hz as a Pest Re-
pellant in Insects*

Appendix 2

**2015 Colorado Science and Engineering Fair
Special Awards Press Release**

Colorado Geographic Alliance

CGA Application of Geography Award

Kelsey Brethauer 7th grade
\$100
Windsor Charter Academy Windsor
Bad Beads

Emma Scholz 12th grade
\$100
Sterling High School Sterling
*Geographical Correlation Maps of Malaria Hemoglobin SS
Disease Allele Frequency and Eco. of Ethiopia*

Colorado Medical Society

CMS Education Foundation Award

Jayden Durbin 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
Haxtun High School Haxtun
*Vitamin D Stimulates the mRNA Expression of ACPP in
LNCaP Cells*

Laura Clark 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
St. Columba Catholic School Durango
*Paper Microfluidics: Medical Diagnostics for the Developing
World*

Colorado Mineral Society

Best Earth Science Award

Max Warnock 7th grade
\$35, mineral specimen, book, certificate
Home School Fort Collins
Testing the Viking Sunstone Legend

Cassandra Blew 8th grade
\$50, mineral specimen, book, certificate
La Veta Jr/Sr High School La Veta
*Beneath the Ashes: How to Reduce Flash Flooding Rates on
Hydrophobic Soil Layers After a Fire*

Wyatt Wiening 9th grade
\$35, mineral specimen, book, certificate
Trinidad High School Trinidad
Expanding Clays

Hannah deKay 10th grade
Raelen Barr 10th grade
\$50, mineral specimen, book, certificate
Silverton Schools Silverton
*Investigating Innovative Tools and Techniques for Heavy
Metal Mapping in Historic Mining District*

Colorado Mycological Society

Mycological Award

Dylan Duskocil 8th grade
\$50, CMS honorary membership certificate, signed copy of
Vera Evenson's "Rocky Mountain Mushrooms" book (to be
mailed)
Bayfield Middle school Bayfield
*Biochar and Fungus to the Rescue: Acid Mine Soil Reclama-
tion*

Colorado Scientific Society

Dylan Duskocil 8th grade
\$50
Bayfield Middle school Bayfield
*Biochar and Fungus to the Rescue: Acid Mine Soil Reclama-
tion*

Antonio Campos 8th grade
\$75
Cherry Creek Challenge School Denver
Why Is Venice Sinking?

Liam Foster 9th grade
\$75
Animas High School Durango
*Testing the Water: A Review of Various Acid Mine Drainage
Remediation Options*

Hannah deKay 10th grade
Raelen Barr 10th grade
\$100
Silverton Schools Silverton
*Investigating Innovative Tools and Techniques for Heavy
Metal Mapping in Historic Mining District*

Colorado State University

College of Agricultural Sciences

Innovations in the Science of Agriculture Award

Calista Law 7th grade
\$500
Boulder Country Day School Boulder
Eco-Plastics

Mitchell Fosdick 10th grade
\$500
Fowler High School Fowler
*Phase III: Further Identification of Isolated Green Fuel Com-
pounds.*

Colorado State University

Dept. of Biochemistry & Molecular Biology

Jonathan Snedeker 12th grade
certificate, \$100
Fairview High School Boulder
*Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy
for Acute Myeloid Leukemia*

2015 Colorado Science and Engineering Fair Special Awards Press Release

Colorado State University Dept. of Chemistry

Nicole Miller 7th grade
certificate, \$100
Ortega Middle School Alamosa
Blue Bottle Blues

Richard Mallory 11th grade
certificate, \$100
The Classical Academy College Colorado Springs
Hazardous Waste to Renewable Energy

Colorado State University Dept. of Horticulture & Landscape Architecture

Sarah Duzenack 6th grade
\$100
La Veta Jr/Sr High School La Veta
A Comparison of Endomycorrhizae and Commercial Fertilizer on Bent and Blue Grass

Alicia Wu 8th grade
\$100
Summit Charter Middle School Boulder
The Acidulous Truth About the Flora of Our Environment

Kaixin Cui 11th grade
\$100
Fairview High School Boulder
Evolutionary Analysis of Cestrum in the Antilles Based on Phylogenetic Relationships and Time Axis

Syree Gunnels 10th grade
\$100
Sargent Jr/Sr High School Monte Vista
Extraction of Health Benefiting Compounds in Colored Potato Tubers

Colorado State University Energy Institute Energy Achievement Award

Kelsey Lindbloom 11th grade
certificate, \$500, invitation to present at the Spark! Experience Energy: Colorado on the Cutting Edge of Energy Innovation event on April 15, 2015
Salida High School Salida
Fueling the Future Phase 4: Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell

Colorado State University School of Biomedical Engineering

Excellence in Biomedical Engineering Award

Jonathan Snedeker 12th grade
certificate, gift bag
Fairview High School Boulder
Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy for Acute Myeloid Leukemia

Jayden Durbin 12th grade
certificate, gift bag
Haxtun High School Haxtun
Vitamin D Stimulates the mRNA Expression of ACPP in LNCaP Cells

Logan Collins 12th grade
certificate, gift bag, \$50 gift bag
Fairview High School Boulder
An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance

Colorado Veterinary Medical Association Veterinary Science Award

Jacob Wright 8th grade
\$50 from CVMA, \$50 from CVMA Auxiliary, certificate
Walsh Jr/Sr High School Walsh
Wind in My Mane

Haleigh Prosser 9th grade
\$50 from CVMA, \$50 from CVMA Auxiliary, certificate
Wiley School Wiley
Cowcium: Effects of Calcium Citrate in Cattle Fed Wet Distillers' Grains Rations

Colorado's Touchstone Energy Cooperatives The Colorado EnergyWise Award

Noah Rainer 8th grade
Megan Harmon 8th grade
\$250
Cortez Middle School Cortez
Harvesting the Sun

Taylor Coons 12th grade
Dante Pacionek 12th grade
\$250
Nederland Middle/Senior High Nederland
The Ideal Energy Efficient Home: An Arduino Based Project

Colorado-Wyoming Society of American Foresters Society of American Foresters Excellence in Forestry Research Award

Lexy Riggo-Guadagnoli 7th grade
\$100
La Veta Jr/Sr High School La Veta
Investigating and Antimicrobial Properties of Abies concolor on Staphylococcus aureus and Streptococcus

Isaac Jordan 9th grade
\$100
Animas High School Durango
Save the World, Bomb the Forest

2015 Colorado Science and Engineering Fair Special Awards Press Release

Comstock Family

Heather Comstock Memorial Award

Logan Collins 12th grade
\$300
Fairview High School Boulder
An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance

Constant Family

Constant Family Award for Excellence in Computer Science

Molly Nehring 8th grade
\$100, certificate, 8 Gb flash drive
Monte Vista Middle School Monte Vista
Genetic Algorithms: Solving Math Problems Using Ideas from Nature

Avi Swartz 10th grade
Tyler Giallanza 10th grade
Ian Johnson 12th grade
\$150, certificate, 16 Gb flash drive
Cherry Creek High School Greenwood Village
Developing a Class Scheduling Program with Minimum Conflicts for Large Schools

Eppler Family

Eppler Family Award

Victoria Dunivan 8th grade
microprocessor kit & digital multimeter (value \$100)
Walsh Jr/Sr High School Walsh
Dealing with Diabetes

Cristian Granados 8th grade
microprocessor kit & digital multimeter (value \$100)
North Middle School Colorado Springs
Put A Little Spring in Your Step

Fort Collins Conservation District

Steven Smith 7th grade
plaque, \$50
The Classical Academy Colorado Springs
Best Mulch for the Money

Isaac Jordan 9th grade
plaque, \$50
Animas High School Durango
Save the World, Bomb the Forest

Frank Armbruster Foundation

Armbruster Memorial Award

Jamison White 8th grade
\$100
Blevins Middle School Fort Collins
Flight Made Simple

Geological Society of America

GSA Awards in Environmental Geology

Jordyn Hall 8th grade
plaque, GSA membership, 2015 GSA calendar, GSA photo scale
Peak to Peak Charter School Lafayette
Temperamental Twisters

Isaac Jordan 9th grade
plaque, GSA membership, 2015 GASA calendar, GSA photo scale, Rite in the Rain spiral notebook, Rite in the Rain all weather pen
Animas High School Durango
Save the World, Bomb the Forest

Ivo Erben 11th grade
plaque, GSA membership, 2015 GSA calendar, GSA photo scale, The Geoscientists Handbook, Rite in the Rain spiral notebook, Rite in the Rain all weather pen
Boulder High School Boulder
The Effect of Climate on a Glacier's ELA and Ablation Gradient

Gromko Family

Gerald Gromko Memorial Award

Shepherd Kruse 10th grade
\$150
Home School Colorado Springs
Designing and Evaluating an Aerospike Rocket Engine for Increased Thrust

Human Factors and Ergonomics Society

Rocky Mountain Chapter

Mary Hood 11th grade
\$100
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

Institute of Electrical & Electronics Engineers

High Plains Section

Cristian Granados 8th grade
SparkFun Inventor's Kit, invitation to an IEEE meeting
North Middle School Colorado Springs
Put A Little Spring in Your Step

Mary Hood 11th grade
SprakFun Inventor's Kit, Raspberry Pi 2 Computer, invitation to an IEEE meeting
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

2015 Colorado Science and Engineering Fair Special Awards Press Release

Little Shop of Physics

Matthew McCausland Memorial Award

Jordyn Hall 8th grade
science "stuff" (value \$100)
Peak to Peak Charter School Lafayette
Temperamental Twisters

Nate Stryker 8th grade
science "stuff" (value \$100)
Columbine Middle School Montrose
Household Hydraulics

Lockheed Martin

Noah Rainer 8th grade
Megan Harmon 8th grade
\$50
Cortez Middle School Cortez
Harvesting the Sun

Ben Sheffer 11th grade
\$100
Eaglecrest High School Centennial
The Effects of Electron Beam Dose on the Visible Spectroscopic Signatures of Thin C60 Films

National Centers for Environmental Information

NCEI Award of Scientific Achievement

Avery Lin 7th grade
\$50 money order, certificate
Stanley British Primary School Denver
War on Waves: A Study of Different Coastal Defenses and Their Effectiveness Against Tsunamis

Rocky Mountain Association of Geologists

Antonio Campos 8th grade
cash award
Cherry Creek Challenge School Denver
Why Is Venice Sinking?

Max Warnock 7th grade
cash award
Home School Fort Collins
Testing the Viking Sunstone Legend

Ivo Erben 11th grade
cash award
Boulder High School Boulder
The Effect of Climate on a Glacier's ELA and Ablation Gradient

SACNAS, Colorado State University Chapter

SACNAS CSU - Rising Young Scientist Award

Anu Khanna 11th grade
\$50
Cherry Creek High School Greenwood Village
The Effects of an Ecological Stress on Generations of Plants

Maia Drugmand 8th grade
\$50
Peak to Peak Charter School Lafayette
Dirty Energy

Amy Hong 9th grade
\$50
Sand Creek High School Colorado Springs
The Effects of Ammonia on Plant Growth

Advaita Singh 8th grade
\$50
Cherry Creek Challenge School Denver
Effects of Ultraviolet Radiation on Planaria

Science Toy Magic, LLC

Science Toy Magic Classroom Demonstration Award

John Quinn 8th grade
\$100
Summit Charter Middle School Boulder
Wind, Wings, and Lift

Mark Lenczycki 8th grade
\$50
Blevins Middle School Fort Collins
My Prosthetic Arm Extension

Society for Mining, Metallurgy, and Exploration Colorado Section

Steven Smith 7th grade
plaque, \$100
The Classical Academy Colorado Springs
Best Mulch for the Money

Dylan Duskocil 8th grade
plaque, \$200
Bayfield Middle school Bayfield
Biochar and Fungus to the Rescue: Acid Mine Soil Reclamation

Cassidy Plane 10th grade
plaque, \$200
Sargent Jr/Sr High School Monte Vista
More or Less

Hannah deKay 10th grade
Raelen Barr 10th grade
plaque, \$400
Silverton Schools Silverton
Investigating Innovative Tools and Techniques for Heavy Metal Mapping in Historic Mining District

2015 Colorado Science and Engineering Fair Special Awards Press Release

Society of Manufacturing Engineers Colorado Chapter 354

Andy Keller Memorial Award

Ryan Tseng	10th grade
\$100, recognition by local chapter	
Fairview High School	Boulder
<i>The Pursuit of Sharpness: A Study on Composition and Geometry of Cutting Instruments</i>	
Ian Wilkins	12th grade
\$150, recognition by local chapter	
Fairview High School	Boulder
<i>Optimizing 3D CAD Scanning Algorithms Through Multi-Sensor Data Input</i>	
Trevor Jordan	11th grade
\$200, recognition by local chapter	
Animas High School	Durango
<i>A Wing of the Future: Part II</i>	

Society of Women Engineers Rocky Mountain Section

Isabel Kahler	8th grade
\$75	
Corwin International Magnet	Pueblo
<i>Defying Gravity</i>	
Robin Bahrami	8th grade
\$100	
Summit Charter Middle School	Boulder
<i>The Soundasaurus: Digital Sound Analysis Using Signal Processing Algorithms</i>	
Haley Weinstein	11th grade
\$75	
Fairview High School	Boulder
<i>Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing</i>	
Mary Hood	11th grade
\$100	
Sargent Jr/Sr High School	Monte Vista
<i>SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly</i>	

Soil & Water Conservation Society Colorado Chapter

Katie McCall	8th grade
certificate, \$100	
Walsh Jr/Sr High School	Walsh
<i>Natural Fertilizing: Observing Wheat Growth with Different Manure</i>	
Cassidy Plane	10th grade
certificate, \$100	
Sargent Jr/Sr High School	Monte Vista
<i>More or Less</i>	

SPIE: The international society for optics and photonics

SPIE Optics and Photonics Science Fair Award

Luke Rohlwing	8th grade
\$50	
American Academy	Castle Pines
<i>Solar Cell Jenga: Increasing Energy Capacity with Stacked Photovoltaic Solar Panels</i>	
Max Warnock	7th grade
\$100	
Home School	Fort Collins
<i>Testing the Viking Sunstone Legend</i>	
Sara Nehring	6th grade
\$150	
Monte Vista Middle School	Monte Vista
<i>The Moon Is So Bright: Do You Need Sunglasses at Night?</i>	
Sirisha Gudavalli	10th grade
\$100	
Fairview High School	Boulder
<i>Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals</i>	
Ian Wilkins	12th grade
\$150	
Fairview High School	Boulder
<i>Optimizing 3D CAD Scanning Algorithms Through Multi-Sensor Data Input</i>	
Ben Sheffer	11th grade
\$250	
Eaglecrest High School	Centennial
<i>The Effects of Electron Beam Dose on the Visible Spectroscopic Signatures of Thin C60 Films</i>	

The Aquaponic Source

The Aquaponic Source's Innovation in Aquaponics Award

Makayla Windholz	8th grade
Aquaponicals aquaponic growing system (\$150 value)	
Imagine Charter School	Firestone
<i>Growing with Aquaponics vs. Hydroponics</i>	

The Inventor's Roundtable

Inventors' Roundtable Award

Mary Hood	11th grade
\$100, free patent search (value \$499)	
Sargent Jr/Sr High School	Monte Vista
<i>SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly</i>	

**2015 Colorado Science and Engineering Fair
Special Awards Press Release**

Trout Unlimited

Trout Unlimited Conservation Award

Tara Suppes 12th grade
\$75
Delta High School Delta
Analysis on Stream Temperature Variation

Katelynn Salmon 8th grade
\$125
Monument Academy Monument
Effect of Microbeads on Daphnia Heart Rate

Hannah Fischer 10th grade
\$200
Sierra Grande Jr/Sr High School Blanca
Pharmacoenviromentology: Developing a Baseline for PPCP Contaminant Levels at the MVNWR

United States Department of Commerce

Department of Commerce Award for Excellence in Science and Engineering

Stephen Parish 12th grade
alternate for the opportunity for summer employment with the Department of Commerce
Home School Colorado Springs
Cyber Automated Report Linker (C.A.R.L): Minimizing Expansion of Catastrophic Cyber Infiltrations

Ian Wilkins 12th grade
the opportunity for summer employment with the Department of Commerce with the possibility for future continuing employment
Fairview High School Boulder
Optimizing 3D CAD Scanning Algorithms Through Multi-Sensor Data Input

United States Geological Survey

USGS Excellence in Geological or Water Research Award

Joshua Miller 6th grade
reference book, mineral specimen
Skinner Middle School Denver
What Type of Soil Best Supports a House During a Liquefaction Event?

Michelle Kummel 9th grade
reference book, mineral specimen
Palmer High School Colorado Springs
A Spoonful of Sugar Helps the Nitrate Go Down: Denitrification in Wetland Soil

University of Colorado, Denver

Medical Scientist Training Program Award

Laura Clark 7th grade
\$50
St. Columba Catholic School Durango
Paper Microfluidics: Medical Diagnostics for the Developing World

Casey Shaw 9th grade
\$50
Liberty School Joes
Arrested Development: Glyphosate-Based Herbicides on the Embryonic Development of Zebra Danios

University of Northern Colorado

MAST Institute Award

Jack Stade 8th grade
\$50
Nevin Platt Middle School Boulder
Modeling Parasitic Relations Using Computer Models

Kevyn Kelso 10th grade
\$50
The Classical Academy Colorado Springs
Automatic Trombone Tuner

Vaughan Web Works, LLC

Glissmann Family Award for Best Use of Computer Program Development

Molly Nehring 8th grade
\$50
Monte Vista Middle School Monte Vista
Genetic Algorithms: Solving Math Problems Using Ideas from Nature

Stephen Parish 12th grade
\$100
Home School Colorado Springs
Cyber Automated Report Linker (C.A.R.L): Minimizing Expansion of Catastrophic Cyber Infiltrations

Wojtaszek Family

Paul Wojtaszek Memorial Award

Jayden Durbin 12th grade
\$300
Haxtun High School Haxtun
Vitamin D Stimulates the mRNA Expression of ACP in LNCaP Cells

Women in Physics

Colorado State University Chapter

Promising Young Woman in Science Award

Isabel Kahler 8th grade
\$50
Corwin International Magnet Pueblo
Defying Gravity

2015 Colorado Science and Engineering Fair Special Awards Press Release

Zonta Club of Boulder County

Amelia Earhart Award

Elani Frantz	8th grade
Paige Lessig	8th grade
certificate, \$100	
North Middle School	Colorado Springs
<i>What's the Weather Forecast in Space?</i>	

Scholarships

Adams State University

Adams State University Scholarships

Merritt Singley	11th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Brush High School	Brush
<i>The Influence of Omega-3 Fatty Acids on Lipid Microdomains Obtained from Bovine Luteal Cells</i>	

Sarena Wells	12th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Fort Morgan High School	Fort Morgan
<i>Frustration Responses: An Analysis of Dispositional Learning</i>	

Shelly Steinert	11th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Sargent Jr/Sr High School	Monte Vista
<i>Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash</i>	

Wyatt Wiening	9th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Trinidad High School	Trinidad
<i>Expanding Clays</i>	

Kelsey Lindbloom	11th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Salida High School	Salida
<i>Fueling the Future Phase 4: Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell</i>	

Brandon Navratil	11th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Animas High School	Durango
<i>Portable Conductivity Probe</i>	

Jessalyn Bay-Voit	10th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Durango High School	Durango
<i>Fire Ready OR Not?</i>	

Derrick Zanoni	10th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Silverton Schools	Silverton
<i>Multi-Purpose Robo Glove</i>	

Collin Leonard	10th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Springfield Jr/Sr High School	Springfield
<i>Gatorade's Effect on Heart Rate</i>	

Rebecca Bloomfield	10th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Palmer High School	Colorado Springs
<i>Competence Dependent Chemotaxis and Genomic Repair in Acinetobacter baylyi</i>	

Gabriella Tolan	11th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Brush High School	Brush
<i>Vertical Motion to Rotational Movement of a Rectangular Wing</i>	

Joel Wagner	10th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Arickaree School	Anton
<i>Effects of Water Contaminants on Plants</i>	

Aubrey Wells	10th grade
Kaitlin Wells	9th grade
ASU scholarship valued as the equivalent to one-year resident tuition and fees (~\$8,500)	
Fort Morgan High School	Fort Morgan
<i>Electromagnetic Spectrum: Absorption Measurements and Their Applications to Energy Analysis</i>	

Colorado School of Mines

Mines CSEF Scholarship

Trevor Jordan	11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)	
Animas High School	Durango
<i>A Wing of the Future: Part II</i>	

Madeline Goosman	11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)	
Fairview High School	Boulder
<i>Mandarin Tone Perception in Simulations of Electro-Acoustic and Cochlear-Implant Hearing</i>	

Appendix 2

**2015 Colorado Science and Engineering Fair
Special Awards Press Release**

Haley Weinstein 11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)
Fairview High School Boulder
Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing

Mary Hood 11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

Brandon Navratil 11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)
Animas High School Durango
Portable Conductivity Probe

Hannah Langford 11th grade
Molly Dickinson 11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)
Animas High School Durango
The Effects of Technology on Teenagers' Sleep Patterns

Emily Zislis 11th grade
\$1,000 CSM scholarship, renewable for up to 3 additional years for use toward an undergraduate degree)
Cherry Creek High School Greenwood Village
The Effect of Genetically Modified Soybean Consumption on Mouse Weight

Colorado State University

College of Natural Sciences Scholarship

Mary Hood 11th grade
\$1,000 renewable scholarship to attend CSU
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

Logan Collins 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance

Elliot Gorokhovsky 10th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
A Novel Algorithm for Model Counting

Sam Scheeres 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Rigorous Constraints on Exchange for the 3-body Problem

Colorado State University Scholarship

Margaret Preigh 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Pulsing Electromagnetic Radiation at 50/60Hz as a Pest Repellent in Insects

Serena Rusk 11th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
An Analysis of Risk Factors for Developing Low Body Satisfaction in Adolescents

Sirisha Gudavalli 10th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals

Jesse Zhang 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Effect of the Atlantic Ocean on Sudden Stratospheric Warming

Trevor Jordan 11th grade
\$1,000 renewable scholarship to attend CSU
Animas High School Durango
A Wing of the Future: Part II

Mary Hood 11th grade
\$1,000 renewable scholarship to attend CSU
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

Hannah Hartung 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Effects of Parasites from Long Term Invasive Fish on Native Amphibians in the California Bay Area

Elliot Gorokhovsky 10th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
A Novel Algorithm for Model Counting

Jonathan Snedeker 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy for Acute Myeloid Leukemia

Sam Scheeres 12th grade
\$1,000 renewable scholarship to attend CSU
Fairview High School Boulder
Rigorous Constraints on Exchange for the 3-body Problem

2015 Colorado Science and Engineering Fair Special Awards Press Release

Jessica Shand 10th grade
\$1,000 renewable scholarship to attend CSU
Discovery Canyon Campus Colorado Springs
Analysis of Spermatophyte Divergence to Expedite Identification of Novel Drug Candidates

Colorado State University, Pueblo

Colorado State University, Pueblo Scholarship

Kelsey Lindbloom 11th grade
\$1,000 scholarship to attend CSU, Pueblo
Salida High School Salida
Fueling the Future Phase 4: Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell

University of Colorado, Boulder

College of Engineering and Applied Sciences Scholarships

Molly Nehring 8th grade
4-year \$500 scholarship
Monte Vista Middle School Monte Vista
Genetic Algorithms: Solving Math Problems Using Ideas from Nature

Michelle Kummel 9th grade
4-year \$500 scholarship
Palmer High School Colorado Springs
A Spoonful of Sugar Helps the Nitrate Go Down: Denitrification in Wetland Soil

Sirisha Gudavalli 10th grade
4-year \$500 scholarship
Fairview High School Boulder
Chemical and Morphological Dependent Properties of Semiconductor Nanocrystals

Mary Hood 11th grade
4-year \$500 scholarship
Sargent Jr/Sr High School Monte Vista
SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly

Haley Weinstein 11th grade
4-year \$500 scholarship
Fairview High School Boulder
Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing

Madeline Goosman 11th grade
4-year \$500 scholarship
Fairview High School Boulder
Mandarin Tone Perception in Simulations of Electro-Acoustic and Cochlear-Implant Hearing

Shelly Steinert 11th grade
4-year \$500 scholarship
Sargent Jr/Sr High School Monte Vista
Determining Flame Retardancy of Maize Stover, Medicago Sativa, and Hordeum Vulgare Ash

Areefa Rahman 11th grade
4-year \$500 scholarship
Cherry Creek High School Greenwood Village
Saving the World with One Feather at a Time: The Amalgamation of Polymers using Chicken Feathers

SSP

American Psychological Association

Achievement in Research in Psychological Science

Caroline Jennings 8th grade
certificate
The Classical Academy Colorado Springs
Ask Me Twice

Serena Rusk 11th grade
certificate
Fairview High School Boulder
An Analysis of Risk Factors for Developing Low Body Satisfaction in Adolescents

Arizona State University

Walton Sustainability Solutions Initiatives

ASU Walton Sustainability Solutions Award

Liam Foster 9th grade
certificate, entry for Grand Prize of a trip to Arizona for the 2016 Sustainability Solutions Festival (entries must be mailed by May 1, 2015 to be eligible)
Animas High School Durango
Testing the Water: A Review of Various Acid Mine Drainage Remediation Options

Hannah Fischer 10th grade
certificate, entry for Grand Prize of a trip to Arizona for the 2016 Sustainability Solutions Festival (entries must be mailed by May 1, 2015 to be eligible)
Sierra Grande Jr/Sr High School Blanca
Pharmacoenvironmentology: Developing a Baseline for PPCP Contaminant Levels at the MVNWR

Casey Shaw 9th grade
certificate, entry for Grand Prize of a trip to Arizona for the 2016 Sustainability Solutions Festival (entries must be mailed by May 1, 2015 to be eligible)
Liberty School Joes
Arrested Development: Glyphosate-Based Herbicides on the Embryonic Development of Zebra Danios

Hannah deKay 10th grade
Raelen Barr 10th grade
certificate, entry for Grand Prize of a trip to Arizona for the 2016 Sustainability Solutions Festival (entries must be mailed by May 1, 2015 to be eligible)
Silverton Schools Silverton
Investigating Innovative Tools and Techniques for Heavy Metal Mapping in Historic Mining District

Appendix 2

2015 Colorado Science and Engineering Fair Special Awards Press Release

ASM Materials Education Foundation

Most Outstanding Exhibit in Materials Science

Emhyr Subramanian 7th grade
certificate, medallion (to be mailed)
Cherry Creek Challenge School Denver
*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*

Sirisha Gudavalli 10th grade
certificate, medallion (to be mailed)
Fairview High School Boulder
*Chemical and Morphological Dependent Properties of Semi-
conductor Nanocrystals*

Association for Women Geoscientists

Student Awards for Geoscience Excellence

Jordyn Hall 8th grade
certificate
Peak to Peak Charter School Lafayette
Temperamental Twisters

MaKayla Hofner 9th grade
certificate
Woodlin School Woodrow
A Gas More Toxic: A Study of Radon in Households

Broadcom MASTERS

National Middle School Science & Engineering Fair Competition Nomination

Kathryn Kummel 6th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
North Middle School Colorado Springs
*The Danger of Drinking Water: How Mountain Lions Affect
Elk Behavior and Aspen Regeneration*

Felix Channiago 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
West Jefferson Middle School Conifer
*The Effect of Temperature on Hunting Response Time of Fe-
male Habronattus Jumping Spiders*

Caroline Jennings 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
The Classical Academy Colorado Springs
Ask Me Twice

Elora Smith 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Sargent Jr/Sr High School Monte Vista
The Sweet Smell of You

Emhyr Subramanian 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Cherry Creek Challenge School Denver
*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*

Calista Law 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Boulder Country Day School Boulder
Eco-Plastics

Sara Nehring 6th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Monte Vista Middle School Monte Vista
The Moon Is So Bright: Do You Need Sunglasses at Night?

Max Warnock 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Home School Fort Collins
Testing the Viking Sunstone Legend

Mark Bloomfield 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Holmes Middle School Colorado Springs
*Blow Out: Scaling Down Compressed Air Energy Storage for
Household Use*

Maia Drugmand 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Peak to Peak Charter School Lafayette
Dirty Energy

Cristian Granados 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
North Middle School Colorado Springs
Put A Little Spring in Your Step

Pranav Subramanian 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Campus Middle School Greenwood Village
*Ultrasonic-Based Optics Utilized for the Blind and Visually
Impaired*

Avery Lin 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition
Stanley British Primary School Denver
*War on Waves: A Study of Different Coastal Defenses and
Their Effectiveness Against Tsunamis*

Appendix 2

**2015 Colorado Science and Engineering Fair
Special Awards Press Release**

Advaita Singh 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Cherry Creek Challenge School Denver
Effects of Ultraviolet Radiation on Planaria

Jack Stade 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Nevin Platt Middle School Boulder
Modeling Parasitic Relations Using Computer Models

Molly Nehring 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Monte Vista Middle School Monte Vista
*Genetic Algorithms: Solving Math Problems Using Ideas from
Nature*

Sam Duarte 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Quest Academy Dacono
*Bagpipes and Earplugs: Should Great Highland Bagpipe
Players Use Earplugs When Practicing?*

Edwin Bodoni 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Cherry Creek Challenge School Denver
Dental Implants: The Healthier Alternative

Taylor Dower 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Turner Middle School Berthoud
Playground Bacterial Levels Comparison

Madison Searles 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

STEM Academy Highlands Ranch
*A Comparison of Antibacterial Hand Cleansing Solutions and
Their Effectiveness on Killing Bacteria*

Brendan Gould 7th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

The Classical Academy Colorado Springs
*Analyzing the Effects of Various Materials on a Magnetic
Field*

John Quinn 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Summit Charter Middle School Boulder
Wind, Wings, and Lift

Alicia Wu 8th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

Summit Charter Middle School Boulder
The Acidulous Truth About the Flora of Our Environment

Sarah Duzenack 6th grade
certificate, nomination to the 2015 Broadcom MASTERS
competition

La Veta Jr/Sr High School La Veta
*A Comparison of Endomycorrhizae and Commercial Fertilizer
on Bent and Blue Grass*

Intel Corporation

Excellence in Computer Science Award

Robert Meikle 9th grade
certificate, \$200 (to be mailed)
Sand Creek High School Colorado Springs
Graphing Calculator Application

Stephen Parish 12th grade
certificate, \$200 (to be mailed)
Home School Colorado Springs

*Cyber Automated Report Linker (C.A.R.L): Minimizing Ex-
pansion of Catastrophic Cyber Infiltrations*

Mu Alpha Theta

Mu Alpha Theta Award

Jennifer Jones 12th grade
certificate

Frontier Academy Greeley
Creating Permutations for Actions on Young Tableaux, Year 2

Elliot Gorokhovskiy 10th grade
certificate
Fairview High School Boulder

A Novel Algorithm for Model Counting

National Oceanic and Atmospheric

Administration

Taking the Pulse of the Planet Award

Emhyr Subramanian 7th grade
certificate, medallion
Cherry Creek Challenge School Denver

*Potential Biodegradable Alternatives to Current Petroleum-
Based Surfactants for Oil Spill Cleanup*

Jesse Zhang 12th grade
certificate, medallion
Fairview High School Boulder

Effect of the Atlantic Ocean on Sudden Stratospheric Warming

2015 Colorado Science and Engineering Fair Special Awards Press Release

Ricoh Americas Corporation

Ricoh Sustainability Development Award

Juan Sanchez certificate	8th grade
Pueblo School for Arts and Sciences <i>What the Frack!</i>	Pueblo
Hannah deKay	10th grade
Raelen Barr certificate	10th grade
Silverton Schools	Silverton
<i>Investigating Innovative Tools and Techniques for Heavy Metal Mapping in Historic Mining District</i>	

Society for In Vitro Biology

Outstanding Achievement for Ability and Creativity in In Vitro Biology Award

Merritt Singley certificate	11th grade
Brush High School <i>The Influence of Omega-3 Fatty Acids on Lipid Microdomains Obtained from Bovine Luteal Cells</i>	Brush
Eileen Xia certificate	10th grade
Cherry Creek High School <i>Phosphatidylinositol-3 Kinase p110a Isoform Inhibits Anti-body Switch</i>	Greenwood Village

United States Metric Association

US Metric Association Award

Connor Voss certificate	8th grade
Beulah School of Natural Sciences <i>Loop the Loop: Rollercoaster Physics</i>	Beulah
Jonathan Snedeker certificate	12th grade
Fairview High School <i>Combined Inhibition of Wee1 and Parp1/2 as a Novel Therapy for Acute Myeloid Leukemia</i>	Boulder

United States Public Health Service

Surgeon General's Special Science Award

Madeline Steinle certificate	8th grade
Trinity Lutheran School <i>The Effects of Aspartame on Cognitive Abilities</i>	Pueblo
Charles Rey certificate	11th grade
Fairview High School <i>The Effects of Exercise on Short Term and Long Term Memory</i>	Boulder

Water Environment Association

Stockholm Junior Water Prize Award

Hannah Fischer certificate, nomination to the SJWP state competition	10th grade
Sierra Grande Jr/Sr High School <i>Pharmacoenvironmentology: Developing a Baseline for PPCP Contaminant Levels at the MVNWR</i>	Blanca
Liam Foster certificate, nomination to the SJWP state competition	9th grade
Animas High School <i>Testing the Water: A Review of Various Acid Mine Drainage Remediation Options</i>	Durango

Yale Science & Engineering Association

Yale Science & Engineering Association Award

Haley Weinstein certificate, pewter medallion (to be mailed)	11th grade
Fairview High School <i>Analyzing Different Methods of Finding the Force at General Yield in Sub-sized Charpy Testing</i>	Boulder
Mary Hood certificate, pewter medallion (to be mailed)	11th grade
Sargent Jr/Sr High School <i>SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly</i>	Monte Vista

Teacher

Lockheed Martin

CSEF Teacher of the Year Award

Diego Martinez \$3,000 grant, plaque	
Center High School	Center

SparkFun Electronics

SparkFun's Thank You to Educators Award

Pat Keeling SparkFun Inventor's Kit (\$99 value)	
La Veta Jr/Sr High School	La Veta
Linda Niccoli SparkFun Inventor's Kit (\$99 value)	
Liberty School	Joes
Dr. Paul Strode SparkFun Inventor's Kit (\$99 value)	
Fairview High School	Boulder
John Wiley SparkFun Inventor's Kit (\$99 value)	
Cherry Creek Challenge School	Denver
Diego Martinez SparkFun Inventor's Kit (\$99 value)	
Center High School	Center

Appendix 3
2014/2015 Income - Expense Report
September 1, 2014 - August 31, 2015

Category Descriptions	Budget	Actual	Difference
INCOME			
Sponsorships	\$53,600.00	\$42,731.02	(\$10,868.98)
Contributions	\$6,050.00	\$5,759.50	(\$290.50)
General Income			
<i>Interest</i>	\$50.00	\$26.22	(\$23.78)
<i>Matching Gifts</i>	\$2,000.00	\$792.26	(\$1,207.74)
<i>RSF Outreach Funds</i>	\$10,000.00	\$10,000.00	\$0.00
<i>Sales</i>	\$1,000.00	\$1,361.00	\$361.00
<i>Scholarships/Special Awards</i>	\$4,100.00	\$6,100.00	\$2,000.00
<i>Teacher of the Year Award</i>	<u>\$3,000.00</u>	<u>\$3,000.00</u>	<u>\$0.00</u>
TOTAL General Income	\$20,150.00	\$21,278.86	\$1,129.48
Grants	\$8,000.00	\$3,000.00	(\$5,000.00)
In-Kind	\$19,000.00	\$17,896.34	(\$1,103.66)
Registrations	\$15,600.00	\$15,920.00	\$320.00
TOTAL INCOME	\$122,400.00	\$106,585.72	(\$15,814.28)



Appendix 3
2014/2015 Income - Expense Report
September 1, 2014 - August 31, 2015

Category Descriptions	Budget	Actual	Difference
EXPENSES			
Awards			
CSEF Special Awards	\$400.00	\$400.00	\$0.00
Grand Awards	\$9,350.00	\$9,334.00	\$16.00
Non-Cash Awards	\$1,100.00	\$1,849.60	(\$749.60)
Other Special Awards	<u>\$7,100.00</u>	<u>\$9,040.00</u>	<u>(\$1,940.00)</u>
TOTAL Awards	\$17,950.00	\$20,623.60	(\$2,673.60)
Board Expenses			
Communications	\$350.00	\$481.03	(\$131.03)
Meetings	\$2,200.00	\$1,624.63	\$575.37
Operations	<u>\$12,795.20</u>	<u>\$15,162.68</u>	<u>(\$2,367.48)</u>
TOTAL Board Expenses	\$15,345.20	\$17,268.34	(\$1,923.14)
ISEF			
Affiliation	\$870.00	\$870.00	\$0.00
Travel	<u>\$9,290.00</u>	<u>\$5,509.48</u>	<u>\$3,780.52</u>
TOTAL ISEF	\$10,160.00	\$6,379.48	\$3,780.52
Outreach	\$12,000.00	\$9,174.99	\$2,825.01
CSEF Expenses			
Adult Sponsors	\$500.00	\$443.65	\$56.35
Advisory Council	\$100.00	\$0.00	\$0.00
Finalist Activities	\$8,375.00	\$7,860.81	\$514.19
Finalist Registration	\$17,450.00	\$13,056.80	\$4,393.20
Fund Raising	\$500.00	\$501.38	(\$1.38)
Judging	\$7,600.00	\$8,689.63	(\$1,089.63)
Personnel	\$8,992.80	\$8,835.94	\$156.86
Publications	\$2,200.00	\$2,175.76	\$24.24
Regional Fair Directors	\$150.00	\$160.38	(\$10.38)
Scientific Review Committee	\$650.00	\$735.04	(\$85.04)
Supplies	\$500.00	\$632.48	(\$296.07)
Volunteers	<u>\$2,310.00</u>	<u>\$2,605.28</u>	<u>(\$295.28)</u>
TOTAL CSEF Expenses	\$49,327.80	\$45,697.15	\$3,630.65
TOTAL EXPENSES	\$104,783.00	\$99,143.56	\$5,639.44
OVERALL TOTAL	\$17,617.00	\$7,442.78	(\$10,174.22)