



April 5 - 7, 2012

For Colorado Students
in Grades 6 - 12



Hosted by the
College of Natural Sciences
Education & Outreach Center
Colorado State University
Lory Student Center
Fort Collins, Colorado

Jidapa Chang-in
Fleming High School

Colorado State Science Fair, Inc.

2012 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, 2012
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

2012 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 two thousand students participate in science fair programs state-wide. 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 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 and Space Sciences; Energy & Transportation, Engineering; Environmental Sciences; Mathematics and 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 three 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.

2012 COLORADO SCIENCE AND ENGINEERING FAIR

The fifty-seventh Colorado Science and Engineering Fair was held at the Lory Student Center on the Colorado State University campus on April 5 – 7, 2012.

This year, CSEF winners were chosen from among 277 projects represented by 313 finalists from 103 schools and 13 regions. More than 140 professional scientists, engineers and mathematicians interviewed the students and evaluated their projects before selecting the Grand Award winners. In addition, over 70 businesses, professional societies, government agencies and individuals provided more than 200 of their own representatives to judge exhibits based on their own criteria. They judged the student finalists and conferred Special Awards 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 1,000 people attended the Awards Ceremony this year.

The 2012 Colorado Science and Engineering Fair had 21 sponsors. Sponsors included 12 Platinum Sponsors (providing over \$2,500 of support each), 2 Gold Sponsors (\$1,000 or more of support each), 1 Silver Sponsor (\$500 - \$750 of support), and 6 Regular Sponsors (\$500 or more of support each). In addition, there were 15 Financial Contributors (less than \$500 each).

Scholarships from Adams State College (ASC), Colorado School of Mines (CSM), Colorado State University (CSU), Fort Lewis College (FLC) and SparkFun Electronics were also presented. Adams State College awarded fourteen one-year full resident tuition and fees scholarships. The Colorado School of Mines awarded seven \$1,000 renewable tuition scholarships. Colorado State University awarded thirteen \$1,000 renewable tuition scholarships to each of the 1st place senior division category winners who were eligible. The College of Natural Sci-

ences at CSU also awarded three \$1,000 tuition scholarships to each of the Senior Division Best Individual Project award winners. Fort Lewis College awarded six \$1,500 renewable tuition 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 a special presentation on intellectual property by a representative from the Technology Transfer Office at Colorado State University.



(See Appendix 1 – 2012 CSEF Schedule)

2012 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 of the Team Leader.)

Percentage of Projects

Male – 47%
Female – 53%

Percentage of Awards

Male – 42%
Female – 58%

Percentage of Projects by Category

Animal Sciences

Male – 20%
Female – 80%

Behavioral & Social Sciences

Male – 17%
Female – 83%

Chemistry

Male – 48%
Female – 52%

Earth & Space Sciences

Male – 38%
Female – 62%

Energy & Transportation

Male – 82%
Female – 18%

Engineering

Male – 87%
Female – 13%

Environmental Sciences

Male – 33%
Female – 67%

Mathematics & Computer Sciences

Male – 80%
Female – 20%

Medicine & Health

Male – 40%
Female – 60%

Microbiology

Male – 21%
Female – 79%

Physics

Male – 58%
Female – 42%

Plant Sciences

Male – 48%
Female – 52%

Percentage of Awards by Category

Animal Sciences

Male – 18%
Female – 82%

Behavioral & Social Sciences

Male – 16%
Female – 84%

Chemistry

Male – 50%
Female – 50%

Earth & Space Sciences

Male – 25%
Female – 75%

Energy & Transportation

Male – 71%
Female – 29%

Engineering

Male – 84%
Female – 16%

Environmental Sciences

Male – 30%
Female – 70%

Mathematics & Computer Sciences

Male – 74%
Female – 26%

Medicine & Health

Male – 43%
Female – 57%

Microbiology

Male – 12%
Female – 88%

Physics

Male – 43%
Female – 57%

Plant Sciences

Male – 25%
Female – 75%

2012 CSEF ETHNICITY RATIOS

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

Percentage of Projects

Caucasian – 71%
Hispanic – 9%
Asian – 7%
African American – 1%
Other/Unknown – 12%

Percentage of Awards

Caucasian – 69%
Hispanic – 6%
Asian – 12%
African American – 1%
Other/Unknown – 12%

2012 CSEF GRADE LEVEL RATIOS

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

Percentage of Students

Junior Division – 62%
6th grade – 12%
7th grade – 24%
8th grade – 26%
Senior Division – 38%
9th grade – 9%
10th grade – 10%
11th grade – 12%
12th grade – 7%

Percentage of Projects

Junior Division – 62%
6th grade – 10%
7th grade – 25%
8th grade – 27%
Senior Division – 38%
9th grade – 9%
10th grade – 11%
11th grade – 11%
12th grade – 7%

Percentage of Grand Awards per Division

Junior Division – 51%
6th grade – 14%
7th grade – 44%
8th grade – 42%
Senior Division – 49%
9th grade – 18%
10th grade – 28%
11th grade – 32%
12th grade – 22%

Percentage of Students Winning Grand Awards

Junior Division – 36%
6th grade – 26%
7th grade – 40%
8th grade – 37%
Senior Division – 59%
9th grade – 47%
10th grade – 55%
11th grade – 67%
12th grade – 71%

Percentage of Special Awards per Division

Junior Division – 47%
6th grade – 7%
7th grade – 16%
8th grade – 24%
Senior Division – 53%
9th grade – 10%
10th grade – 15%
11th grade – 18%
12th grade – 10%

Percentage of Students Winning Special Awards

Junior Division – 38%
6th grade – 28%
7th grade – 40%
8th grade – 41%
Senior Division – 20%
9th grade – 53%
10th grade – 58%
11th grade – 64%
12th grade – 43%

2012 COLORADO SCIENCE AND ENGINEERING FAIR TOP AWARDS

The top three Senior Division project exhibitors (individual or team) won a trip to compete in the Intel International Science and Engineering Fair held in Pittsburgh, PA May 13 - 18, 2012. First place went to **Sara Volz**, Cheyenne Mountain High School in Colorado Springs, grade 11, for the project *Optimizing Algae Biofuels Artificial Selection & Nitrogen Stress as Methods to Induce Synthesis*. Second place went to **Lawrence Zhang**, Fairview High School in Boulder, grade 10, for the project *miRNA 205: Suppressing Inpp4b and Wnt5a Expression*. Third place went to **Easton LaChappelle**, Mancos High School in Mancos, grade 10, for the project *Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis*.

The winner of the Ralph F. Desch Memorial Technical Writing Award was **Rahul Shankar** from Rampart High School in Colorado Springs, grade 12, for the project *Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells*.

The winner of the Senior Division Student Choice Award was **Easton LaChappelle**, Mancos High School in Mancos, grade 10, for the project *Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis*. The Junior Division Student Choice winner was **Mitchell Fosdick**, Fowler Junior High School in Fowler, grade 7, for the project *Hydrogen: The Clean Energy of Today*.

The winner of the Poster Art Contest was **Alison Weinberger**, Cherry Creek Challenge School in Denver.

The winners of the Pioneers of Science Awards were **Josie Sitton**, Cortez Middle School in Cortez, grade 6, for the project *Time and Temperature of Wood*; **Zander Graham**, Quest Academy in Dacono, grade 7, for the project *Spectroscopy*; **Sean Flatten**, Centennial Middle School in Montrose, grade 7 for the project *Mice, Mazes and Music!*; **Avi Swartz**, Cherry Creek Challenge School in Denver, grade 7, for the project *One Out of 400 Choose 100*; **Nicole Whitehead**, North Middle School in Colorado Springs, grade 8, for the project *The Aimless Fingerprint*; **Luke Tyler**, Eagle County Charter Academy in Edwards, grade 6, for the project *Spin to Win*; **Michael Stankiewicz**, Cesar Chavez Academy in Pueblo, grade 6, for the project *5 Second Rule: Fact or Fiction*; **Julia Ludwig**, Lamar Middle School in Lamar, grade 8, for the project *The Effect of Disinfectants on the Eradication of a Biofilm*; **Thomas McCarthy**, West Jefferson Middle School in Conifer, grade 7, for the project *Vertiginous Vegetables: A Study of How Gravity Affects Root Development*; **Journey Simmons**, Stanley British Primary School in Denver, grade 8, for the project *Buenas Noches! The Scientific Study of Conscious vs. Unconscious Learning of Spanish Vocabulary*; **Zach Wilson**, Walsh Elementary School in Walsh, grade 6, for the project *Tip of the Iceberg: Lowering the Melting Point of Water*; **Marika Basagoitia**, Sargent Junior High School in Monte Vista, grade 8, for the project *Brush Buster or Brush Busted?*; **Roger Nakagawa**, Hill Campus of Arts and Sciences in Denver, grade 6, for the project *The Effect of Dimple Size on How Golf Balls Roll*; **Sierra Kelly**, Miller Middle School in Durango, grade 6, for the project *Black Roof, White Roof, Which One Is the Right Roof?*; **Rebecca Erickson**, Blevins Middle School in Fort Collins, grade 7, for the project *Got Oil?*; **Bethany Levy**, Cortez Middle School in Cortez, grade 8, for the project *Operation Meditation*.

2012 COLORADO SCIENCE AND ENGINEERING FAIR

SCHOLARSHIP AWARDS

ADAMS STATE COLLEGE

Nicholas Lobato, Center High School, Center, grade 10, for the project *Studying the Effects of Incubation Rates and Water Temperature on Gila Pandora's Eggs*

Cristina Loranca, Arickaree School, Anton, grade 11, for the project *A la Derecha o a la Izquierda (To the Right or To the Left)*

Aniruddh Prakash, Fairview High School, Boulder, grade 11, for the project *Effect of Defects on Selectivity Parameters of SAPO-34 Zeolite Membranes*

Anna Kulp, Center High School, Center, grade 11, for the project *A New Approach to Treating & Remediating Incrusting Bacteria in Water Supply Wells via $\text{NaHSiO}_3 \cdot 2\text{H}_2\text{O}$*

Eric Lyne, Brush High School, Brush, grade 9, for the project, *Boosting Solar-Collector Efficiency with a Fresnel Lens*

Brett Bostrom, Brush High School, Brush, grade 11, for the project *Automated Irrigation*

Devon Enke, La Veta High School, La Veta, grade 10, for the project *Mycoremediation: Using *Pleurotus ostreatus* Mycelium to Remove Petroleum Hydrocarbons from Freshwater and Saltwater Environments*

Jessica Constant, Poudre High School, Fort. Collins, grade 11, for the project *Computer Modeling V: A Predictive Model of Tracer Dispersion in the Atmosphere*

Dustin Sanchez, West Grand High School, Kremmling, grade 10, for the project *Walk the Line*

Monica Gaitonde, Lamar High School, Lamar, grade 11, for the project *Film Cannon*

Casey Huz, Pioneer Christian School, Rocky Ford, grade 10, for the project *Go Ahead Shoot Me: It's Safer Than It Looks*

Neal Hiser, Basalt High School, Basalt, grade 11, for the project *Effect of Allelochemicals on the Growth of Western Wheat Grass*

Gerri Roberts, Poudre High School, Fort Collins, and **Hannah West**, Windsor High School, Windsor, grade 11, for their project *Green Processing of Fatty Acids for Fuel Production*

COLORADO SCHOOL OF MINES

Tristan Seawalt, Cherry Creek High School, Greenwood Village, grade 11, for the project *Ethanol on the Household Level*

Sara Volz, Cheyenne Mountain High School, Colorado Springs, grade 11, for the project *Optimizing Algae Biofuels Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis*

Brett Bostrom, Brush High School, Brush, grade 11, for the project *Automated Irrigation*

Brisha Wakasugi, Sierra Grande High School, Blanca, grade 11, for the project *Kerber Creek Restoration Using Phytoremediation III: Prioritizing Clean-up Areas*

Jessica Constant, Poudre High School, Fort Collins, grade 11, for the project *Computer Modeling V: A Predictive Model of Tracer Dispersion in the Atmosphere*

Moeka Nakagawa, Cherry Creek High School, Greenwood Village grade 11, for the project *Analysis of Expression of Fructose Transporter GLUT5 in Rat Tissues with Regards to Reducing Obesity*

Tyler Stratman, Brush High School, Brush grade 11, for the project *Polygonal Shapes on a rotating Fluid Surface*

COLORADO STATE UNIVERSITY

Caitlyn Lee, Fairview High School, Boulder, grade 9, for the project *Happiness is Associated with a Stronger Belief in the Value of Prosocial Behavior*

Johanna Phillips, Monte Vista High School, Monte Vista, grade 12, for the project *Water In, Water Out: Using a Water Balance Model to Estimate Net Consumptive Availability*

Easton LaChappelle, Mancos High School, Mancos, grade 10, for the project *Fine Motor Skills Using EEG Technology and Biomedical Prosthesis*

Leslie Seitz, Fairview High School, Boulder grade 9, for the project *Running Dry? Developing an Intuitive Water Planning Interface*

Jessica Constant, Poudre High School, Fort Collins, grade 11, for the project *Computer Modeling V: A Predictive Model of Tracer Dispersion in the Atmosphere*

Lawrence Zhang, Fairview High School, Boulder, grade 10, for the project *miRNA 205: Suppressing Inpp4b and Wnt5a Expression*

Kelli Lynch, Rocky Mountain High School, Fort Collins, grade 12, for the project *Irradiation Extermination Part 3: A Portable System to Eliminate Microorganisms*

Ya'el Courtney, Lewis Palmer High School, Monument, grade 10, for the project *Does Ambient Air Pressure Affect Rocket Motor Performance?*

Samantha Chin, Peak to Peak Charter School, Lafayette, grade 11, for the project *Effects of Cogongrass (Imperata cylindrical) Extracts on the Growth of Mature Winter Wheatgrass*

COLORADO STATE UNIVERSITY
COLLEGE OF NATURAL SCIENCES

Sara Volz, Cheyenne Mountain High School, Colorado Springs, grade 11, for the project *Optimizing Algae Biofuels Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis*

Lawrence Zhang, Fairview High School, Boulder, grade 10, for the project *miRNA 205: Suppressing Inpp4b and Wnt5a Expression*

Easton LaChappelle, Mancos High School, Mancos, grade 10, for the project *Fine Motor Skills Using EEG Technology and Biomedical Prosthesis*

FORT LEWIS COLLEGE

Sara Volz, Cheyenne Mountain High School, Colorado Springs, grade 11, for the project *Optimizing Algae Biofuels Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis*

Easton LaChappelle, Mancos High School, Mancos, grade 10, for the project *Fine Motor Skills Using EEG Technology and Biomedical Prosthesis*

Simon Schaefer, Monte Vista High School, Monte Vista, grade 11, for the project *Gravity's Effect on Non-uniform Suspended Chains*

Christina Stratton, Arriba-Flagler School, Flagler, grade 10, for the project *Can You Burn Trash to Make Clean Energy?*

Samantha Chin, Peak to Peak Charter School, Lafayette, grade 11, for the project *Effects of Cogongrass (Imperata cylindrical) Extracts on the Growth of Mature Winter Wheatgrass*

Jacob Nichols, Brush High School, Brush, grade 10, for the project *An Investigation of the Washboard Road Phenomenon*

RYAN PATTERSON SCHOLARSHIP

The Ryan Patterson Scholarship is named in honor of the Intel ISEF top winner of 2001. This year's winner was **Kelli Lynch**, Rocky Mountain High School, Fort Collins, grade 12, for the project *Irradiation Extermination Part 3: A Portable System to Eliminate Microorganisms*

(See Appendix 2 – CSEF Press Release)

2012 INTEL INTERNATIONAL SCIENCE AND ENGINEERING FAIR



The Intel International Science and Engineering Fair, the world's largest pre-college science fair, brings together more than 1,500 of the most curious and capable young science pioneers from more than 60 countries to share ideas, showcase cutting-edge science and compete for over \$4 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 63rd Intel ISEF held in Pittsburgh, PA, May 13 – 18, 2012.

GRAND AWARDS

Sara Volz from Colorado Springs, CO won \$3,000 (1st Place) in Energy & Transportation.

Easton LaChappelle from Mancos, CO won \$1,500 (2nd Place) in Electrical & Mechanical Engineering.

Kelli Lynch from Fort Collins, CO won \$1,500 (2nd Place) in Microbiology.

Taylor Rocha from Monte Vista, CO won \$1,500 (2nd Place) in Environmental Sciences.

SPECIAL AND GOVERNMENT AWARDS

Devon Enke from La Veta, CO won \$500 (2nd Place) from the National Oceanic & Atmospheric Administration.

Easton LaChappelle from Mancos, CO received an Honorable Mention certificate from the International Council on Systems Engineering.

Kelli Lynch from Fort Collins, CO won \$750 (4th Place) from the American Society for Microbiology.

Johanna Phillips from Monte Vista, CO received an Honorable Mention certificate from the International Council on Systems Engineering.

Taylor Rocha from Monte Vista, CO won \$600 (1st Place) from the Society for Freshwater Science.

The experience of ISEF is thrilling and humbling. Just entering the vast exhibit hall, lined with hundreds of blue-trimmed project booths, buzzing with thousands of people busily setting up their displays, was enough to make me feel both proud and inadequate! We finalists got some other amazing opportunities: wonderful workshops and talks, specially catered events such as a question/answer session with Nobel Laureates (which was my personal favorite)!

Of course, getting to walk up to the huge stage under lights and cameras to receive an award and shake the hand of a Nobel prize-winning researcher was a huge highlight of the experience! But best of all was the chance I got to meet and share research with so many amazing young scientists, from all over the world--people who, like me, care about science, love to conduct experiments, and enjoying sharing their passion with others.

Each year I have been at ISEF, I have been astounded by the level of research: the quality of work, the time investment, the brilliant innovation. As an eighth grader I had decided that my ambition for high school would be to win the chance just to go to ISEF, simply because I had heard so much about how wonderful the experience was. Now that I have been three times, I can honestly say that each time was even better than my expectations!

However, ISEF's true value lies not in how wonderful the week of the event itself is. Rather, it is the opportunity it and fairs like CSEF provide to people like me, students who love science but wouldn't otherwise have the opportunity to engage in a true scientific question. Outside of the setting that the fairs provide, I would never have had the chance and inspiration to conduct meaningful research and get a grasp of what real science is - and without CSEF and ISEF, I might not have discovered my calling for a career in biochemical research.

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

PLATINUM SPONSORS

(Providing over \$2,500 in support of CSEF)

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San Luis Valley Regional Science Fair, Inc.

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

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INDIVIDUAL CONTRIBUTORS

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

Ed & Lucy Adams

Sam & Eileen Bartlett

Michael Bemski

Matthew Bruehl

Nancy Glissmann

David & Vonda Holm

Robert Lamperuer

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

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Regular Member since 2002

Xcel Energy

Marty Cameron

Regular Member since 2011

Galvanic Engineering

Ryan Patterson - Secretary

Regular Member since 2004

AREVA Federal Services

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Regular Member since 2002

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Regular Member since 2001

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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
1998 – 1999

Courtney Butler
1999 – 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.

2012 Colorado Science and Engineering Fair Grand Awards Press Release

Junior Division Best CSEF Project

First Place

Marlo Masters 7th grade
My Mom Was Robbed!!
 The Classical Academy Colorado Springs

Second Place

Evan Savage 7th grade
Growing Algae for Biodiesel in the Desert
 Boulder Country Day School Boulder

Third Place

Aleesa Muir 8th grade
Analyzing the Effects of Dietary Supplement Consumption on Probiotic Growth
 The Classical Academy Colorado Springs

Senior Division Best CSEF Project

First Place

Sara Volz 11th grade
Optimizing Algae Biofuels: Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis
 Cheyenne Mountain High School Colorado Springs

Second Place

Lawrence Zhang 10th grade
miRNA 205: Suppressing Inpp4b and Wnt5a Expression
 Fairview High School Boulder

Third Place

Easton LaChappelle 10th grade
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis
 Mancos High School Mancos

Junior Division Animal Sciences

First Place

Nadja de Sa 7th grade
Sticky Fingers
 The Classical Academy Colorado Springs

Second Place

Madison Olver 7th grade
Hay! How's Your Dust, Mold, and Nutritional Value?
 Blevins Middle School Fort Collins

Third Place

Rene Carter 8th grade
Genetic Reproduction Patterns of Mice
 North Middle School Colorado Springs

Fourth Place

Megan Godsey 7th grade
Daphnia Heart Rate Under Caffeinated Conditions
 Buchanan Middle School Wray

Honorable Mention

Sofia Antal 8th grade
Hydra Reproduction Rates in Correlation with Their Environment
 Cherry Creek Challenge School Denver

Senior Division Animal Sciences

First Place

Nikki Buhrdorf 12th grade
 Vikash Hypio 12th grade
Mytilus edulis Protein Strength: Mussels Have Muscles
 Hotchkiss High School Hotchkiss

Second Place

Nakayla Lestina 12th grade
Biological Control of Diffuse Knapweed: Analyzing Two Natural Insect Enemies
 Dove Creek High School Dove Creek

Third Place

Beth Lenz 11th grade
Calving Under Pressure
 Wray High School Wray

Fourth Place

Tess Ringlein 10th grade
One Fish, Two Fish, Normal Fish?
 Lone Star High School Otis

Honorable Mention

Nicholas Lobato 10th grade
Studying the Effects of Incubation Rates and Water Temperature on Gila Pandora's Eggs
 Center High School Center

Junior Division Behavioral & Social Sciences

First Place

Callie Matteson 6th grade
 Ashley Vitti 6th grade
Just a Minute
 North Middle School Colorado Springs

Second Place

Kristina Cavey 8th grade
Secret Savior
 Turner Middle School Berthoud

Third Place

Diego Ruis 7th grade
Human Reactions Under Pressure
 Union Colony Preparatory School Greeley

Fourth Place

Wyatt Hurt 7th grade
How Is the Accuracy of Eyewitness Testimony Affected by the Method of Questioning?
 East Middle School Grand Junction

Honorable Mention

Bethany Levy 8th grade
Operation Meditation
 Cortez Middle School Cortez

Honorable Mention

Lauren Lang 8th grade
Very Handy
 Peak to Peak Charter School Lafayette

Honorable Mention

Mallory Noble 8th grade
Brains vs. Brawn
 Otis Jr/Sr High School Otis

**Senior Division
 Behavioral & Social Sciences**

First Place

Caitlyn Lee 9th grade
Happiness is Associated with a Stronger Belief in the Value of Prosocial Behavior
 Fairview High School Boulder

Second Place

Dora Seres 10th grade
Evaluation of Creek's Graduating Class of 2011
 Cherry Creek High School Greenwood Village

Third Place

Braeden Horton 12th grade
 Brydie Mitchell 11th grade
 Elizabeth Wood 12th grade
The Rubik's Cube of Political Gridlock: Resistance to Change in the American Tax System
 Hotchkiss High School Hotchkiss

Fourth Place

Cristina Loranca 11th grade
A la Derecha o a la Izquierda (To the Right or To the Left)
 Arickaree School Anton

Honorable Mention

Dorothee Bohme 11th grade
How to Negate the Stroop Effect
 Arickaree School Anton

Honorable Mention

Kate Weimer 11th grade
A Colorful Debate: A Study on the Effect of FD&C Yellow 5 on Gromphadorhina portentosa
 Merino Jr/Sr High School Merino

**Junior Division
 Chemistry**

First Place

Marlo Masters 7th grade
My Mom Was Robbed!!
 The Classical Academy Colorado Springs

Second Place

Nicholas Finan 8th grade
Sticky Water: Intermolecular Attraction
 Peak to Peak Charter School Lafayette

Third Place

Chris Alleman 8th grade
What's Up with the Poudre?
 Kinard Middle School Fort Collins

Fourth Place

Karli Buchanan 7th grade
Kitchen Chemistry 101: Fluffy Pancakes
 Buchanan Middle School Wray

Honorable Mention

Matthew Manfredo 8th grade
An "Egg"cellent "Eggs"periment
 Harrison School Canon City

Honorable Mention

Zach Wilson 6th grade
Tip of the Iceberg: Lowering the Melting Point of Water
 Walsh Elementary School Walsh

**Senior Division
 Chemistry**

First Place

Gerri Roberts 11th grade
 Hannah West 11th grade
Green Processing of Fatty Acids for Fuel Production
 Poudre High School Fort Collins
 Windsor High School Windsor

Second Place

Aniruddh Prakash 11th grade
Effect of Defects on Selectivity Parameters of SAPO-34 Zeolite Membranes
 Fairview High School Boulder

Third Place

Sydney Anderson 10th grade
 Rowan Binkley-Jones 10th grade
Shampoo Chemistry
 Edison High School Yoder

Fourth Place

John Cheslock 10th grade
Comparative Study of Binding Strengths of Food Dyes FDA Red 40 & Natural Extract Betanin on Firboin
 Sargent High School Monte Vista

Honorable Mention

LaRae Cesko	10th grade
<i>Stainless Truth</i>	
Arriba-Flagler School	Flagler

**Junior Division
Earth & Space Sciences**

First Place

Alexandra Famiglietti	8th grade
<i>Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials</i>	
Cherry Creek Challenge School	Denver

Second Place

Ivo Erben	8th grade
<i>Hyperborean History</i>	
Summit Middle School	Boulder

Third Place

Kelsey Kimberling	7th grade
<i>Dust Away</i>	
Sargent Junior High School	Monte Vista

Fourth Place

David McHugh	8th grade
<i>Commotion in the Ocean</i>	
Banning Lewis Ranch Academy	Colorado Springs

**Senior Division
Earth & Space Sciences**

First Place

Johanna Phillips	12th grade
<i>Water In, Water Out: Using a Water Balance Model to Estimate Net Consumptive Availability</i>	
Monte Vista High School	Monte Vista

Second Place

Anna Kulp	11th grade
<i>A New Approach to Treating & Remediating Incrusting Bacterias in Water Supply Wells via</i>	
Center High School	Center

Third Place

Sydney Matteson	9th grade
<i>How Well Is Your Well: The Effect of Hydrofracking Fluids on a Eukariotic Species</i>	
Palmer High School	Colorado Springs

Fourth Place

Isabella Soehn	11th grade
<i>A Wind Field Study Comparing Five Automatic Weather Stations on the Antarctic Ross Ice Shelf</i>	
Boulder High School	Boulder

Honorable Mention

Emma Frantz	9th grade
<i>The Effect of the Sun on Cloud Formation and the Earth's Climate</i>	
Palmer High School	Colorado Springs

**Junior Division
Energy & Transportation**

First Place

Evan Savage	7th grade
<i>Growing Algae for Biodiesel in the Desert</i>	
Boulder Country Day School	Boulder

Second Place

Keanan Anderson	6th grade
Tate Hinger	6th grade
<i>What Is the Delta T of a Two Can Stirling Engine?</i>	
Pagosa Springs Middle School	Pagosa Springs

Third Place

George Liu	7th grade
<i>Caught Sleeping</i>	
The Classical Academy	Colorado Springs

Fourth Place

Mitchell Fosdick	7th grade
<i>Hydrogen: The Clean Energy of Today</i>	
Fowler Junior High School	Fowler

Honorable Mention

Brandon Cruz	7th grade
<i>Fossil Fuel</i>	
Cesar Chavez Academy	Pueblo

**Senior Division
Energy & Transportation**

First Place

Sara Volz	11th grade
<i>Optimizing Algae Biofuels: Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis</i>	
Cheyenne Mountain High School	Colorado Springs

Second Place

Wyatt Goodin	11th grade
<i>Examination of Power Grid Cascading Failure Through Simulation</i>	
Fairview High School	Boulder

Third Place

Max Snider	11th grade
<i>Fermentation of Spirogyra After a Period of Growth</i>	
Cherry Creek High School	Greenwood Village

Fourth Place

Eric Lyne	9th grade
<i>Boosting Solar-Collector Efficiency with a Fresnel Lens</i>	
Brush High School	Brush

Honorable Mention

Laura Brothers	12th grade
<i>The Wind, the Windmill, and the Windcube</i>	
Grace Preparatory Academy	Durango

Honorable Mention

Noah Westfall	10th grade
<i>Heat Transfer from Biomass II</i>	
Cherry Creek High School	Greenwood Village

**Junior Division
Engineering**

First Place

Leighton Burt 7th grade
Elastic, Plastic, or Bust: Investigating Yield Strength of Butyl Rubber Inner Tubes
 Sargent Junior High School Monte Vista

Second Place

Johann Kailey-Steiner 7th grade
Rocket Design Part 2 - Testing the Effects of Vortex Generators on Drag Coefficient
 Grant Beacon Middle School Denver

Third Place

Clint Sexton 8th grade
Wiismart
 Blevins Middle School Fort Collins

Fourth Place

Mary Hood 8th grade
Doggie's New Playmate
 Sargent Junior High School Monte Vista

Honorable Mention

Roger Nakagawa 6th grade
The Effect of Dimple Size on How Golf Balls Roll
 Hill Campus of Arts and Sciences Denver

**Senior Division
Engineering**

First Place

Easton LaChappelle 10th grade
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis
 Mancos High School Mancos

Second Place

Wesley Hileman 11th grade
 Matthew Hileman 9th grade
Ion Propulsion: Electrostatic Thruster Design and Optimization for Space Applications
 The Classical Academy Colorado Springs

Third Place

Nathan Frantz 12th grade
On the Road: From Dual Disability to Independence
 Fleming High School Fleming

Fourth Place

Connor Sendel 9th grade
Optimization of Materials for Catcher's Gear Chest Protectors
 Cherry Creek High School Greenwood Village

Honorable Mention

Joey Park 11th grade
 Matthew Winchester 11th grade
 Nidesh Lamichhane 11th grade
Nerve Cell Functions/Uses Outside the Body
 Cherry Creek High School Greenwood Village

**Junior Division
Environmental Sciences**

First Place

Joshua Courtney 6th grade
Condition Indexes of Fish as Bioindicators One Year After the Deepwater Horizon Oil Spill
 Monument Academy Monument

Second Place

Rahul Ramesh 7th grade
Got Fuel?
 Cherry Creek Challenge School Denver

Third Place

Ramsey Carter 8th grade
The Effect of a Thin, Clear, Plastic Membrane on a Snow Collector
 Hill Campus of Arts and Sciences Denver

Fourth Place

Emma Cooney 8th grade
Removing Copper with Fruit Peels and Seaweed
 Summit Middle School Boulder

Honorable Mention

Grace Romer 8th grade
Searching for Clarity: Drop by Drop
 Stanley British Primary School Denver

Honorable Mention

Rebecca Bloomfield 7th grade
Hit Me with Your Best (Lead) Shot: Lead Contamination on Rampart Shooting Range
 North Middle School Colorado Springs

**Senior Division
Environmental Sciences**

First Place

Leslie Seitz 9th grade
Running Dry? Developing an Intuitive Water Planning Interface
 Fairview High School Boulder

Second Place

Maislinn Helfer 9th grade
Lights Out: The Use of Vibrio fischeri to Determine Water Quality
 Palmer High School Colorado Springs

Third Place

Michael Seltzer 11th grade
An Inexpensive Method for Estimating Particle Pollution
 Fairview High School Boulder

Fourth Place

Clark Cranfill 12th grade
Thicker Phloem = Funeral Home
 Sargent High School Monte Vista

Appendix 2

Honorable Mention

Taylor Rocha 10th grade
Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek
 Monte Vista High School Monte Vista

Honorable Mention

Boyu Wang 12th grade
 Yichen (Astron) Liu 12th grade
 Stephan Liu 11th grade
Self-Sustained Desalination in Combination with Wastewater Treatment – Hybrid Microbial Desalination
 Lakewood High School Lakewood

Honorable Mention

Vishal Krishnan 10th grade
Mitigation of Environmental Impacts Caused by Wind Turbines
 Cherry Creek High School Greenwood Village

Honorable Mention

Brisha Wakasugi 11th grade
Kerber Creek Restoration Using Phytoremediation III: Prioritizing Clean-up Areas
 Sierra Grande Jr/Sr High School Blanca

Junior Division Mathematics & Computer Sciences

First Place

Stevan Maksimovic 8th grade
How an Author Affects His or Her Numerical Style of Writing
 Summit Middle School Boulder

Second Place

Avi Swartz 7th grade
One Out of 400 Choose 100
 Cherry Creek Challenge School Denver

Third Place

Peter Shearon 7th grade
Program and Play
 The Classical Academy Colorado Springs

Senior Division Mathematics & Computer Sciences

First Place

Jessica Constant 11th grade
Computer Modeling V: A Predictive Model of Tracer Dispersion in the Atmosphere
 Poudre High School Fort Collins

Second Place

Ben Ribovich 12th grade
Decomposition of Automorphism Groups
 Cherry Creek High School Greenwood Village

Third Place

Cole Hugelmeyer 11th grade
Proof That a Circular Hopf Link is a Stationary Point for Møbius Energy
 Boulder High School Boulder

Fourth Place

Coby Buck 12th grade
Predicting Depressions with Presidential Regressions
 Wray High School Wray

Honorable Mention

Simon Schaefer 10th grade
Gravity's Effect on Non-uniform Suspended Chains
 Monte Vista High School Monte Vista

Junior Division Medicine & Health

First Place

Aleesa Muir 8th grade
Analyzing the Effects of Dietary Supplement Consumption on Probiotic Growth
 The Classical Academy Colorado Springs

Second Place

Ted Dumont 7th grade
The Effect of Altitude on Hematocrit
 Estes Park Middle School Estes Park

Third Place

Michael Harms 7th grade
Got Oxygen?
 The Classical Academy Colorado Springs

Fourth Place

Alison Weinberger 8th grade
Is Homeopathy More Than the Placebo? The Effect of Homeopathic Arnica Montana on Fruit Flies
 Cherry Creek Challenge School Denver

Honorable Mention

Alea Hardesty 7th grade
Energy Buzz!
 Buchanan Middle School Wray

Honorable Mention

Kaitlyn Carson 7th grade
iVet vs. Evo
 Preston Middle School Fort Collins

Honorable Mention

Nicole Whitehead 8th grade
The Aimless Fingerprint
 North Middle School Colorado Springs

Honorable Mention

Lauren Zawacki 8th grade
Wash Those Hands
 North Middle School Colorado Springs

Senior Division Medicine & Health

First Place

Lawrence Zhang 10th grade
miRNA 205: Suppressing Inpp4b and Wnt5a Expression
 Fairview High School Boulder

Appendix 2

Second Place

Rahul Shankar 12th grade
Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells
 Rampart High School Colorado Springs

Third Place

Cody Mattern 12th grade
 Brett Reinke 11th grade
 Jay Rosenfield 12th grade
Quantifying Postural Sway of Simulated Pre & Post Traumatic Brain Injury Trials
 Warren Tech North Arvada

Fourth Place

Apurva Subramanian 10th grade
Does the TAST2R38 Gene Affect Body Fat Composition?
 Cherry Creek High School Greenwood Village

Honorable Mention

Austin Reed 11th grade
Time Course of Doxorubicin Accumulation in Cardiovascular Tissue
 Wray High School Wray

Honorable Mention

Nicolette Laird 12th grade
The Role of the miR-106b-25 miRNAs in Predicting Breast Cancer Outcomes in Differential Subtypes
 Monarch High School Louisville

Honorable Mention

Jenna Hartley 9th grade
Engineering a Novel Inhibitor for Encapsulated Pathogens
 Palmer High School Colorado Springs

Junior Division Microbiology

First Place

Seth Young 7th grade
Microbe Blaster for a Crude Oil Disaster
 The Classical Academy Colorado Springs

Second Place

Kelsey Lindbloom 8th grade
Fueling the Future
 Salida Middle School Salida

Third Place

Lauren Soehner 8th grade
Isolation of Propionibacterium acnes
 Buchanan Middle School Wray

Fourth Place

Courtney Haag 7th grade
 Jewell Humphrey 7th grade
Do Cooking Methods Prevent Bacteria Growth on Different Meat Types?
 Cherry Creek Challenge School Denver

Honorable Mention

Madison McDonald 6th grade
How Does Temperature Affect Bacterial Growth in a Plastic Water Bottle?
 Blevins Middle School Fort Collins

Honorable Mention

Gabriella Lopez 7th grade
 Jinny Lehr 7th grade
Have You Cleaned Your Cucumis melo reticulates?
 La Veta Middle School La Veta

Senior Division Microbiology

First Place

Kelli Lynch 12th grade
Irradiation Extermination Part 3: A Portable System to Eliminate Waterborne Microorganisms
 Rocky Mountain High School Fort Collins

Second Place

Genysie Van Duren 11th grade
The Effect of pH on the Efficiency of Transformation
 Fleming High School Fleming

Third Place

Darian Wilson 9th grade
The Effect of Fasudil on the Metastasis of Saccharomyces cerevisiae
 Sterling High School Sterling

Fourth Place

Monica Gaitonde 11th grade
The Effect of Sodium Bicarbonate and Hydrogen Peroxide on the Growth of Streptococcus Mutans
 Lamar High School Lamar

Junior Division Physics

First Place

Alex Roerty 8th grade
It's Not a Catapult!
 Preston Middle School Fort Collins

Second Place

Elya Courtney 8th grade
Is the Drag Force on a Supersonic Projectile Proportional to Air Density?
 Monument Academy Monument

Third Place

Ilse Meiler 8th grade
Splat! An Investigation into the Splat Patterns of Newtonian and Non-Newtonian Fluids
 Peak to Peak Charter School Lafayette

Fourth Place

Ali Betsch 7th grade
Racer Ready?
 The Classical Academy Colorado Springs

Appendix 2

Honorable Mention

Marika Basagoitia 8th grade
Brush Buster or Brush Busted?
 Sargent Junior High School Monte Vista

Honorable Mention

David Parr, Jr. 6th grade
Soundproofing for the Musician
 St. Columba Catholic School Durango

Honorable Mention

Heather Graham 6th grade
Screws vs. Nails: The Practical Test
 Genoa-Hugo School Hugo

Honorable Mention

Nathan George 6th grade
Perpetual Motion: Fact or Fiction?
 Walsh Elementary School Walsh

Senior Division Physics

First Place

Ya'el Courtney 10th grade
Does Ambient Air Pressure Affect Rocket Motor Performance?
 Lewis Palmer High School Monument

Second Place

Jacob Nichols 10th grade
An Investigation of the Washboard Road Phenomenon
 Brush High School Brush

Third Place

Victoria Milano 12th grade
The Phenomenon of Oscillons in Vertically Vibrated Granular Material
 Brush High School Brush

Fourth Place

Casey Huz 10th grade
Film Canister Cannon
 Pioneer Christian School Rocky Ford

Honorable Mention

Genesis Villa 9th grade
 Jasmine Garcia 9th grade
Infrared Radiation vs. Thermal Conduction for Hair Permanence to Reduce Pili Damage
 Center High School Center

Junior Division Plant Sciences

First Place

Alison Henry 7th grade
This Is Your Bean. This Is Your Bean on Drugs
 The Classical Academy Colorado Springs

Second Place

Misha Kummel 6th grade
Field Parameterization of a Model for Secondary Forest Succession by Shade Tolerance
 North Middle School Colorado Springs

Third Place

Alexander Crane 8th grade
Better Lawn Care?
 St. John the Evangelist Catholic School Loveland

Fourth Place

Cortnie Hunter 7th grade
Stabilization or Poison: The Effects of Soil Stabilizer on Plant Germination
 Monte Vista Middle School Monte Vista

Honorable Mention

Alexandra Tompkins 7th grade
Is the Grass Greener?
 Boulder Country Day School Boulder

Honorable Mention

Talor Saffer 7th grade
Too Much of a Good Thing?
 Arriba-Flagler School Flagler

Honorable Mention

Madison Thompson 8th grade
The Effects of Sequestering Carbon Dioxide onto C3, C4, and CAM Plants
 Otis Jr/Sr High School Otis

Senior Division Plant Sciences

First Place

Samantha Chin 11th grade
*Effects of Cogongrass (*Imperata cylindrica*) Extracts on the Growth of Mature Winter Wheatgrass*
 Peak to Peak Charter School Lafayette

Second Place

Elizabeth Hoffner 10th grade
Is There Strength in Numbers?
 Home School Center

Third Place

Neal Hiser 9th grade
Effect of Allelochemicals on the Growth of Western Wheat Grass
 Basalt High School Basalt

Fourth Place

Evan Waters 9th grade
How Much Is Too Much?
 Springfield High School Springfield

Honorable Mention

Davis Lange 9th grade
A Cell Plant Regeneration
 Cherry Creek High School Denver

2012 Colorado Science and Engineering Fair Special Awards Press Release

Teacher Awards

Lockheed Martin

CSEF Teacher of the Year Award

David Miner
\$3000 grant, plaque
Brush High School
Brush

SparkFun Electronics

SparkFun Constructivism Energy Award

David Miner
certificate, scholarship to attend a 2-day Introduction to
Microcontrollers for Educators class (\$300 value)
Brush High School
Brush

William Mallory
certificate, scholarship to attend a 1-day Intro to Arduino class
(\$125 value)
Genoa-Hugo School
Hugo

Loree' Harvey
certificate, scholarship to attend a 1-day Intro to Arduino class
(\$125 value)
Monte Vista Middle School
Monte Vista

Diego Martinez
certificate, scholarship to attend a 1-day Intro to Arduino class
(\$125 value)
Center High School
Center

Terri Paulson
certificate, scholarship to attend a 1-day Intro to Arduino class
(\$125 value)
Sargent Jr/Sr High School
Monte Vista

Colorado Science and Engineering Fair

Ralph Desch Memorial Technical Writing Award

Rahul Shankar
\$100, certificate
Rampart High School
Colorado Springs
*Assembling a Dextran-Based Nanoparticle Platform for Up-
take by Cancerous Cells*

Poster Art Contest

Alison Weinberger
\$100, certificate
Cherry Creek Challenge School
Denver

Student Choice Award

Mitchell Fosdick
\$100, certificate, trophy
Fowler Junior High School
7th grade
Hydrogen: The Clean Energy of Today

Easton LaChappelle
\$100, certificate, trophy
Mancos High School
Mancos
*Fine Motor Skills Using EEG Technology and Biomechanical
Prosthesis*

Pioneers of Science - Edward Teller

Josie Sitton
\$30, certificate
Cortez Middle School
Cortez
Time and Temperature of Wood

Pioneers of Science Edwin Hubble

Zander Graham
\$30, certificate
Quest Academy
Dacono
Spectroscopy

Pioneers of Science - Georges Cuvier

Sean Flatten
\$30, certificate
Centennial Middle School
Montrose
Mice, Mazes, and Music!

Pioneers of Science - Grace Hopper

Avi Swartz
\$30, certificate
Cherry Creek Challenge School
Denver
One Out of 400 Choose 100

Pioneers of Science - Greene Black

Nicole Whitehead
\$30, certificate
North Middle School
Colorado Springs
The Aimless Fingerprint

Pioneers of Science - James Joule

Luke Tyler
\$30, certificate
Eagle County Charter Academy
Edwards
Spin to Win

Pioneers of Science - John Salk

Michael Stankiewicz
\$30, certificate
Cesar Chavez Academy
Pueblo
5 Second Rule: Fact or Fiction

Pioneers of Science - Louis Pasteur

Julia Ludwig
\$30, certificate
Lamar Middle School
Lamar
The Effect of Disinfectants on the Eradication of a Biofilm

Appendix 2

Pioneers of Science - Luther Burbank
 Thomas McCarthy 7th grade
 \$30, certificate
 West Jefferson Middle School Conifer
Vertiginous Vegetables: A Study of How Gravity Affects Root Development

Pioneers of Science - Margaret Mead
 Journey Simmons 8th grade
 \$30, certificate
 Stanley British Primary School Denver
Buenas Noches! The Scientific Study of Conscious vs. Unconscious Learning of Spanish Vocabulary

Pioneers of Science - Marie Curie
 Zach Wilson 6th grade
 \$30, certificate
 Walsh Elementary School Walsh
Tip of the Iceberg: Lowering the Melting Point of Water

Pioneers of Science - Max Planck
 Marika Basagoitia 8th grade
 \$30, certificate
 Sargent Junior High School Monte Vista
Brush Buster or Brush Busted?

Pioneers of Science - Nicola Tesla
 Roger Nakagawa 6th grade
 \$30, certificate
 Hill Campus of Arts and Sciences Denver
The Effect of Dimple Size on How Golf Balls Roll

Pioneers of Science - Rachel Carson
 Sierra Kelly 6th grade
 \$30, certificate
 Miller Middle School Durango
Black Roof, White Roof, Which One Is the Right Roof?

Pioneers of Science - Rosalie Edge
 Rebecca Erickson 7th grade
 \$30, certificate
 Blevins Middle School Fort Collins
Got Oil?

Pioneers of Science - Sigmund Freud
 Bethany Levy 8th grade
 \$30, certificate
 Cortez Middle School Cortez
Operation Meditation

Military

United States Air Force Air Force ROTC Award

Zander Graham 7th grade
 certificate, victory sport bag, sonic sound speaker, junior tech organizer
 Quest Academy Dacono
Spectroscopy

Katherine Younglove 8th grade
 certificate, victory sport bag, sonic sound speaker, junior tech organizer
 Summit Middle School Boulder
Using Mirrors to Increase the Power Obtained by Solar PV Cells

Eric Lyne 9th grade
 certificate, victory sport bag, sonic sound speaker, junior tech organizer
 Brush High School Brush
Boosting Solar-Collector Efficiency with a Fresnel Lens

Easton LaChappelle 10th grade
 certificate, victory sport bag, sonic sound speaker, junior tech organizer
 Mancos High School Mancos
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis

United States Army

US Army Research Laboratory Award

Cody Mattern 12th grade
 Brett Reinke 11th grade
 Jay Rosenfield 12th grade
 certificate, \$50 US savings bond
 Warren Tech North Arvada
Quantifying Postural Sway of Simulated Pre & Post Traumatic Brain Injury Trials

Boyu Wang 12th grade
 Yichen (Astron) Liu 12th grade
 Stephan Liu 11th grade
 certificate, \$50 US savings bond
 Lakewood High School Lakewood
Self-Sustained Desalination in Combination with Wastewater Treatment – Hybrid Microbial Desalination

Rebecca Kraxberger 9th grade
 certificate, \$50 US savings bond
 Genoa-Hugo School Hugo
Electrolytes vs. Different Drink: Water, Sports Drinks, or Fruit Juice

Desarae Cruz 9th grade
 certificate, \$50 US savings bond
 Dolores Huerta Preparatory High Pueblo
Age vs. Reaction Time

Easton LaChappelle 10th grade
 certificate, \$100 US savings bond, silver medallion
 Mancos High School Mancos
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis

United States Navy & United States Marine Corps Office of Naval Research Award

Peter Shearon 7th grade
 certificate
 The Classical Academy Colorado Springs
Program and Play

Appendix 2

Mitchell Fosdick certificate Fowler Junior High School <i>Hydrogen: The Clean Energy of Today</i>	7th grade Fowler	Alexandra Famiglietti \$50 (to be mailed) Cherry Creek Challenge School <i>Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials</i>	8th grade Denver
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Aleesa Muir certificate The Classical Academy <i>Analyzing the Effects of Dietary Supplement Consumption on Probiotic Growth</i>	8th grade Colorado Springs
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Joshua Courtney certificate Monument Academy <i>Condition Indexes of Fish as Bioindicators One Year After the Deepwater Horizon Oil Spill</i>	6th grade Monument
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Rahul Shankar certificate, \$75 gift certificate Rampart High School <i>Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells</i>	12th grade Colorado Springs
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Taylor Rocha certificate, \$75 gift certificate Monte Vista High School <i>Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek</i>	10th grade Monte Vista
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Sydney Matteson certificate, \$75 gift certificate Palmer High School <i>How Well Is Your Well: The Effect of Hydrofracking Fluids on a Eukariotic Species</i>	9th grade Colorado Springs
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Organizational

Air & Waste Management Association Rocky Mountain States Section

Michael Seltzer \$50 (to be mailed) Fairview High School <i>An Inexpensive Method for Estimating Particle Pollution</i>	11th grade Boulder
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Taylor Rocha \$50 (to be mailed) Monte Vista High School <i>Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek</i>	10th grade Monte Vista
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Kelli Lynch \$50 (to be mailed) Rocky Mountain High School <i>Irradiation Extermination Part 3: A Portable System to Eliminate Waterborne Microorganisms</i>	12th grade Fort Collins
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Kelsey Kimberling \$50 (to be mailed) Sargent Junior High School <i>Dust Away</i>	7th grade Monte Vista
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American Chemical Society Colorado Local Section

Tucker Shrout & Vincente Ozzello certificate, \$100 La Veta Middle School <i>Neutralizing pH</i>	8th grade La Veta
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Gerri Roberts Hannah West certificate, \$100 Poudre High School Windsor High School <i>Green Processing of Fatty Acids for Fuel Production</i>	11th grade 11th grade Fort Collins Windsor
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American Institute of Chemical Engineers Rocky Mountain Section

Grace Romer \$75 Stanley British Primary School <i>Searching for Clarity: Drop by Drop</i>	8th grade Denver
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Emma Cooney \$100 Summit Middle School <i>Removing Copper with Fruit Peels and Seaweed</i>	8th grade Boulder
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Aniruddh Prakash \$75 Fairview High School <i>Effect of Defects on Selectivity Parameters of SAPO-34 Zeolite Membranes</i>	11th grade Boulder
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Boyu Wang Yichen (Astron) Liu Stephan Liu \$100 Lakewood High School <i>Self-Sustained Desalination in Combination with Wastewater Treatment – Hybrid Microbial Desalination</i>	12th grade 12th grade 11th grade Lakewood
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American Meteorological Society Denver/Boulder Chapter

Alexandra Famiglietti certificate, \$50 in weather related items Cherry Creek Challenge School <i>Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials</i>	8th grade Denver
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Emma Frantz certificate, \$50 in weather related items Palmer High School <i>The Effect of the Sun on Cloud Formation and the Earth's Climate</i>	9th grade Colorado Springs
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Appendix 2

American Public Power Association

DEED Energy & Efficiency Innovation Award

Katherine Younglove 8th grade
\$50
Summit Middle School Boulder
Using Mirrors to Increase the Power Obtained by Solar PV Cells

Noah Westfall 10th grade
\$75
Cherry Creek High School Greenwood Village
Heat Transfer from Biomass II

DEED Environmental Innovation Award

Rahul Ramesh 7th grade
\$50
Cherry Creek Challenge School Denver
Got Fuel?

Sara Volz 11th grade
\$75
Cheyenne Mountain High School Colorado Springs
Optimizing Algae Biofuels: Artificial Selection & Nitrogen Stress as Methods to Induce Lipid Synthesis

American Statistical Association, Colorado/Wyoming Chapter

David Young Memorial Award

Jubilee St. Louis 7th grade
letter of acknowledgement
The Classical Academy Colorado Springs
I'm Running It!

Lauren Lang 8th grade
\$150, student membership in the American Statistical Association, acknowledgement at the chapter spring meeting and on chapter web site
Peak to Peak Charter School Lafayette
Very Handy

Nurul MohdReza 10th grade
\$150, student membership in the American Statistical Association, acknowledgement at the chapter spring meeting and on chapter web site
Union Colony School Greeley
The Study of Soil Remediation on Soil Respiration

American Vacuum Society Rocky Mountain Chapter

Elya Courtney 8th grade
\$50, \$50 for adult sponsor
Monument Academy Monument
Is the Drag Force on a Supersonic Projectile Proportional to Air Density?

Nicholas Finan 8th grade
\$100, \$100 for adult sponsor
Peak to Peak Charter School Lafayette
Sticky Water: Intermolecular Attraction

Emma Frantz 9th grade
\$50, \$50 for adult sponsor
Palmer High School Colorado Springs
The Effect of the Sun on Cloud Formation and the Earth's Climate

Ya'el Courtney 10th grade
\$100, \$100 for adult sponsor
Lewis Palmer High School Monument
Does Ambient Air Pressure Affect Rocket Motor Performance?

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

Shelly Steinert 8th grade
certificate, \$200
Sargent Junior High School Monte Vista
Snow to Water . . . A Long Way to Go!

Grace Romer 8th grade
certificate, \$400
Stanley British Primary School Denver
Searching for Clarity: Drop by Drop

Leslie Seitz 9th grade
certificate, \$200
Fairview High School Boulder
Running Dry? Developing an Intuitive Water Planning Interface

Kelli Lynch 12th grade
certificate, \$400
Rocky Mountain High School Fort Collins
Irradiation Extermination Part 3: A Portable System to Eliminate Waterborne Microorganisms

ASM International

Best Materials Related Award

Courtney Ensz 10th grade
\$100
Arriba-Flagler School Flagler
Preventing Iron Oxidation Corrosion in the Maritime Industry

Leighton Burt 7th grade
\$150
Sargent Junior High School Monte Vista
Elastic, Plastic, or Bust: Investigating Yield Strength of Butyl Rubber Inner Tubes

Association for Women Geoscientists Larimide Chapter

Alexandra Famiglietti 8th grade
\$80, 2012 achievement medal
Cherry Creek Challenge School Denver
Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials

Appendix 2

Johanna Phillips 12th grade
 \$80, 2012 achievement medal
 Monte Vista High School Monte Vista
Water In, Water Out: Using a Water Balance Model To Estimate Net Consumptive Availability

Colorado Association of Meat Processors

Monica Gaitonde 11th grade
 certificate, \$60
 Lamar High School Lamar
The Effect of Sodium Bicarbonate and Hydrogen Peroxide on the Growth of Streptococcus Mutans

Colorado Association of Science Teachers

CAST Award

Rebecca Bloomfield 7th grade
 \$75
 North Middle School Colorado Springs
Hit Me with Your Best (Lead) Shot: Lead Contamination on Rampart Shooting Range

Lenka Dorskocil 7th grade
 \$75
 Bayfield Middle School Bayfield
Bean Plants in Biochar

Rahul Shankar 12th grade
 \$75
 Rampart High School Colorado Springs
Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells

Taylor Rocha 10th grade
 \$75
 Monte Vista High School Monte Vista
Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek

Gerald Gromko Memorial Award

Easton LaChappelle 10th grade
 \$150, certificate
 Mancos High School Mancos
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis

Colorado Biology Teachers' Association

Misha Kummel 6th grade
 certificate, \$75
 North Middle School Colorado Springs
Field Parameterization of a Model for Secondary Forest Succession by Shade Tolerance

Samantha Chin 11th grade
 certificate, \$75
 Peak to Peak Charter School Lafayette
*Effects of Cogonagrass (*Imperata cylindrica*) Extracts on the Growth of Mature Winter Wheatgrass*

Colorado Chemistry Teachers' Association

Marlo Masters 7th grade
 \$50, certificate
 The Classical Academy Colorado Springs
My Mom Was Robbed!!

Gerri Roberts 11th grade
 Hannah West 11th grade
 \$100, certificate
 Poudre High School Fort Collins
 Windsor High School Windsor
Green Processing of Fatty Acids for Fuel Production

Colorado Dental Association

Julia Ludwig 8th grade
 \$50
 Lamar Middle School Lamar
The Effect of Disinfectants on the Eradication of a Biofilm

Alyssah Ewing 6th grade
 \$100
 Genoa-Hugo School Hugo
Toothpaste

Olivia Sayer 11th grade
 \$50
 Warren Tech Center Lakewood
Nicotine and Cancer: The Effects of Nicotine on Carcinoma Cell Proliferation

Monica Gaitonde 11th grade
 \$100
 Lamar High School Lamar
The Effect of Sodium Bicarbonate and Hydrogen Peroxide on the Growth of Streptococcus Mutans

Colo. Division of Reclamation Mining & Safety

Outstanding Earth Science Award

Emma Cooney 8th grade
 \$75
 Summit Middle School Boulder
Removing Copper with Fruit Peels and Seaweed

Taylor Rocha 10th grade
 \$75
 Monte Vista High School Monte Vista
Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek

Colorado Environmental Health Association

Courtney Haag & Jewell Humphrey 7th grade
 certificate, \$100
 Cherry Creek Challenge School Denver
Do Cooking Methods Prevent Bacteria Growth on Different Meat Types?

Michael Seltzer 11th grade
 certificate, \$150, invitation to exhibit at the CEHA Annual educational Conference (\$400 value)
 Fairview High School Boulder
An Inexpensive Method for Estimating Particle Pollution

Appendix 2

Colorado Foundation for Agriculture *Agriculture in the Classroom Award*

Madison Thompson certificate, \$50 Otis Jr/Sr High School <i>The Effects of Sequestering Carbon Dioxide onto C3, C4, and CAM Plants</i>	8th grade Otis
Madison Olver certificate, \$50 Blevins Middle School <i>Hay! How's Your Dust, Mold, and Nutritional Value?</i>	7th grade Fort Collins
Teisha Coffield certificate, \$50 Lone Star High School <i>Chemotaxis in Physarum polycephalum: A Model for the Effects of Antioxidants on Cancer Progression</i>	9th grade Otis
Nurul MohdReza certificate, \$50 Union Colony School <i>The Study of Soil Remediation on Soil Respiration</i>	10th grade Greeley

Colorado Geographic Alliance *Application of Geography Award*

Chris Alleman \$100 Kinard Middle School <i>What's Up with the Poudre?</i>	8th grade Fort Collins
Isabella Soehn \$100 Boulder High School <i>A Wind Field Study Comparing Five Automatic Weather Stations on the Antarctic Ross Ice Shelf</i>	11th grade Boulder

Colorado Medical Society

Alison Weinberger \$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 Cherry Creek Challenge School <i>Is Homeopathy More Than the Placebo? The Effect of Homeopathic Arnica Montana on Fruit Flies</i>	8th grade Denver
Jenna Hartley \$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 Palmer High School <i>Engineering a Novel Inhibitor for Encapsulated Pathogens</i>	9th grade Colorado Springs

Colorado Mineral Society

Andrew Miller certificate, \$25, 2 mineral specimens, book Our Lady of Fatima Catholic <i>Rock and Sediment Properties and Water Flow</i>	8th grade Lakewood
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Alexandra Famiglietti certificate, \$40, 2 mineral specimens, book Cherry Creek Challenge School <i>Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials</i>	8th grade Denver
Johanna Phillips certificate, \$25, 2 mineral specimens, book Monte Vista High School <i>Water In, Water Out: Using a Water Balance Model To Estimate Net Consumptive Availability</i>	12th grade Monte Vista
Brisha Wakasugi certificate, \$40, 2 mineral specimens, book Sierra Grande Jr/Sr High School <i>Kerber Creek Restoration Using Phytoremediation III: Prioritizing Clean-up Areas</i>	11th grade Blanca

Colorado Mycological Society

Devon Enke \$50, Vera Evenson's book, society honorary membership, certificate La Veta Jr/Sr High School <i>Mycoremediation: Using Pleurotus ostreatus Mycelium to Remove Petroleum Hydrocarbons from Freshwater and Salt-water Environments</i>	10th grade La Veta
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Colorado Scientific Society

Alexandra Famiglietti \$50 Cherry Creek Challenge School <i>Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials</i>	8th grade Denver
Joshua Courtney \$75 Monument Academy <i>Condition Indexes of Fish as Bioindicators One Year After the Deepwater Horizon Oil Spill</i>	6th grade Monument
Brisha Wakasugi \$75 Sierra Grande Jr/Sr High School <i>Kerber Creek Restoration Using Phytoremediation III: Prioritizing Clean-up Areas</i>	11th grade Blanca
Sydney Matteson \$100 Palmer High School <i>How Well Is Your Well: The Effect of Hydrofracking Fluids on a Eukariotic Species</i>	9th grade Colorado Springs

Appendix 2

Colorado State University Clean Energy Supercluster Clean Energy Achievement Award

Sara Volz 11th grade
certificate, invitation to present research at the annual Cenergy
Expo, April 18, 2012 at Colorado State University (travel ex-
penses reimbursed up to \$500)
Cheyenne Mountain High School Colorado Springs
*Optimizing Algae Biofuels: Artificial Selection & Nitrogen
Stress as Methods to Induce Lipid Synthesis*

Colorado State University College of Agricultural Sciences Innovations in the Science of Agriculture Award

Teisha Coffield 9th grade
Lone Star High School Otis
*Chemotaxis in Physarum polycephalum: A Model for the Ef-
fects of Antioxidants on Cancer Progression*

Colorado State University Dept. of Biochemistry & Molecular Biology

Lawrence Zhang 10th grade
certificate, \$100
Fairview High School Boulder
miRNA 205: Suppressing Inpp4b and Wnt5a Expression

Colorado State University Department of Chemistry

Karli Buchanan 7th grade
certificate, \$100
Buchanan Middle School Wray
Kitchen Chemistry 101: Fluffy Pancakes

Aniruddh Prakash 11th grade
certificate, \$100
Fairview High School Boulder
*Effect of Defects on Selectivity Parameters of SAPO-34 Zeo-
lite Membranes*

Colorado State University Dept. of Horticulture & Landscape Architecture

Alison Henry 7th grade
\$100
The Classical Academy Colorado Springs
This Is Your Bean. This Is Your Bean on Drugs.

Alexandra Tompkins 7th grade
\$100
Boulder Country Day School Boulder
Is the Grass Greener?

Elizabeth Hoffner 10th grade
\$100
Home School Center
Is There Strength in Numbers?

Samantha Chin 11th grade
\$100
Peak to Peak Charter School Lafayette
*Effects of Cogongrass (Imperata cylindrica) Extracts on the
Growth of Mature Winter Wheatgrass*

Colorado Veterinary Medical Association

Kaitlyn Carson 7th grade
certificate, \$50 from CVMA, \$50 from CVMA Auxiliary
Preston Middle School Fort Collins
iVet vs. Evo

Beth Lenz 11th grade
certificate, \$50 from CVMA, \$50 from CVMA Auxiliary
Wray High School Wray
Calving Under Pressure

Colorado-Wyoming Society of American Forest- ers

Miah Pitcher 8th grade
\$100 savings bond
Paogsa Springs Middle School Pagosa Springs
*Challenging the Lorax: A Study of Forest Health After Bio-
mass Harvesting*

Clark Cranfill 12th grade
\$100 savings bond
Sargent High School Monte Vista
Thicker Phloem = Funeral Home

Misha Kummel 6th grade
\$100 savings bond
North Middle School Colorado Springs
*Field Parameterization of a Model for Secondary Forest Suc-
cession by Shade Tolerance*

Comstock Family

Heather Comstock Memorial Award

Jenna Hartley 9th grade
certificate, \$200
Palmer High School Colorado Springs
Engineering a Novel Inhibitor for Encapsulated Pathogens

Eppler Family

Katherine Younglove 8th grade
microprocessor kit & digital multimeter (\$100 value)
Summit Middle School Boulder
*Using Mirrors to Increase the Power Obtained by Solar PV
Cells*

Cedric Camacho 8th grade
microprocessor kit & digital multimeter (\$100 value)
Edison Middle School Yoder
Eco Friendly Robot Car

Fort Collins Conservation District

Shelly Steinert 8th grade
\$50, plaque
Sargent Junior High School Monte Vista
Snow to Water . . . A Long Way to Go!

Appendix 2

Johanna Phillips
\$50, plaque
Monte Vista High School
Water In, Water Out: Using a Water Balance Model To Estimate Net Consumptive Availability

12th grade

Monte Vista

Frank Armbruster Foundation

Charles Armbruster Memorial Award

Christopher Van Lieu
\$100
Kinard Middle School
Blown Away

8th grade

Fort Collins

Hands & Minds, Inc.

Anatomy in Clay Award

Cody Mattern
Brett Reinke
Jay Rosenfield
Student Maniken model by Anatomy in Clay Learning System (\$250 value)
Warren Tech North
Quantifying Postural Sway of Simulated Pre & Post Traumatic Brain Injury Trials

12th grade

11th grade

12th grade

Arvada

Human Factors and Ergonomics Society

Rocky Mountain Chapter

Nathan Frantz
\$100
Fleming High School
On the Road: From Dual Disability to Independence

12th grade

Fleming

Institute of Electrical and Electronics Engineers

High Plans Section

Clint Sexton
\$100
Blevins Middle School
Wiismart

8th grade

Fort Collins

Easton LaChappelle
\$150
Mancos High School
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis

10th grade

Mancos

Little Shop of Physics

Matthew McCausland Memorial Award

Cedric Camacho
\$100
Edison Middle School
Eco Friendly Robot Car

8th grade

Yoder

Emma Frantz
\$100
Palmer High School
The Effect of the Sun on Cloud Formation and the Earth's Climate

9th grade

Colorado Springs

Lockheed Martin

Johann Kailey-Steiner
\$50
Grant Beacon Middle School
Rocket Design Part 2 - Testing the Effects of Vortex Generators on Drag Coefficient

7th grade

Denver

Wesley Hileman
Matthew Hileman
\$100
The Classical Academy
Ion Propulsion: Electrostatic Thruster Design and Optimization for Space Applications

11th grade

9th grade

Colorado Springs

MWH Americas, Inc.

Sustainable Future Award

Rahul Ramesh
\$100, plaque
Cherry Creek Challenge School
Got Fuel?

7th grade

Denver

Kelsey Lindbloom
\$200, plaque
Salida Middle School
Fueling the Future

8th grade

Salida

Laura Brothers
\$100, plaque
Grace Preparatory Academy
The Wind, the Windmill, and the Windcube

12th grade

Durango

Boyu Wang
Yichen (Astron) Liu
Stephan Liu
\$200, plaque
Lakewood High School
Self-Sustained Desalination in Combination with Wastewater Treatment – Hybrid Microbial Desalination

12th grade

12th grade

11th grade

Lakewood

National Geophysical Data Center

Ivo Erben
\$100 savings bond, certificate, plaque
Summit Middle School
Hyperborean History

8th grade

Boulder

Optical Society of America

Rocky Mountain Section

Zander Graham
certificate, 1-year subscription to Discover magazine
Quest Academy
Spectroscopy

7th grade

Dacono

Eric Lyne
certificate, 1-year subscription to Discover magazine
Brush High School
Boosting Solar-Collector Efficiency with a Fresnel Lens

9th grade

Brush

Appendix 2

Pepperman-Alpert Family

Pepperman-Alpert Memorial Award

Rahul Shankar 12th grade
 \$50
 Rampart High School Colorado Springs
Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells

Rawat Family

Champion of Scientific Innovation Award

Tiana Linkus 7th grade
 \$100 savings bond, \$50 savings bond for teacher
 Quest Academy Dacono
Kick It: Kick Angle Effect on Distance

Casey Shaw 7th grade
 \$100 savings bond, \$50 savings bond for teacher
 Liberty School Joes
The Effect of Trebuchet Design Modifications on Projectile Launch Distance

Rocky Mountain Association of Geologists

Alexandra Famiglietti 8th grade
 cash awards TBD
 Cherry Creek Challenge School Denver
Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials

Isabella Soehn 11th grade
 cash awards TBD
 Boulder High School Boulder
A Wind Field Study Comparing Five Automatic Weather Stations on the Antarctic Ross Ice Shelf

SACNAS, Colorado State University Chapter

Rahul Shankar 12th grade
 \$50
 Rampart High School Colorado Springs
Assembling a Dextran-Based Nanoparticle Platform for Uptake by Cancerous Cells

Samantha Chin 11th grade
 \$50
 Peak to Peak Charter School Lafayette
*Effects of Cogongrass (*Imperata cylindrica*) Extracts on the Growth of Mature Winter Wheatgrass*

Cedric Camacho 8th grade
 \$50
 Edison Middle School Yoder
Eco Friendly Robot Car

Journey Simmons 8th grade
 \$50
 Stanley British Primary School Denver
Buenas Noches! The Scientific Study of Conscious vs. Unconscious Learning of Spanish Vocabulary

Science Toy Magic, LLC

Keanan Anderson & Tate Hinger 6th grade
 \$50
 Pagosa Springs Middle School Pagosa Springs
What Is the Delta T of a Two Can Stirling Engine?

Nathan Harman, Abby Herman & Jay Armstrong 7th grade
 \$100
 Fort Morgan Middle School Fort Morgan
If Copper Isn't Magnetic, Then Why Does It Affect a Falling Magnet?

Tyler Stratman 11th grade
 \$50
 Brush High School Brush
Polygonal Shapes on a Rotating Fluid Surface

Eric Lyne 9th grade
 \$100
 Brush High School Brush
Boosting Solar-Collector Efficiency with a Fresnel Lens

Society for Mining, Metallurgy, and Exploration Colorado Section

Andrew Miller 8th grade
 \$100, plaque
 Our Lady of Fatima Catholic Lakewood
Rock and Sediment Properties and Water Flow

Emma Cooney 8th grade
 \$200, plaque
 Summit Middle School Boulder
Removing Copper with Fruit Peels and Seaweed

Brisha Wakasugi 11th grade
 \$200, plaque
 Sierra Grande Jr/Sr High School Blanca
Kerber Creek Restoration Using Phytoremediation III: Prioritizing Clean-up Areas

Society of Manufacturing Engineers Colorado Chapter 354

Andy Keller Memorial Award

Diego Ruis 7th grade
 \$100, recognition by chapter 354
 Union Colony Preparatory School Greeley
Human Reactions Under Pressure

Colt Thompson 8th grade
 \$150, recognition by chapter 354
 Cortez Middle School Cortez
Roping Dummy DIY

Easton LaChappelle 10th grade
 \$200, recognition by chapter 354
 Mancos High School Mancos
Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis

Appendix 2

Society of Women Engineers Rocky Mountain Section

Katherine Younglove certificate, \$75 Summit Middle School <i>Using Mirrors to Increase the Power Obtained by Solar PV Cells</i>	8th grade Boulder
Mary Hood certificate, \$100 Sargent Junior High School <i>Doggie's New Playmate</i>	8th grade Monte Vista
Leslie Seitz certificate, \$75 Fairview High School <i>Running Dry? Developing an Intuitive Water Planning Interface</i>	9th grade Boulder
Kelli Lynch certificate, \$100 Rocky Mountain High School <i>Irradiation Extermination Part 3: A Portable System to Eliminate Waterborne Microorganisms</i>	12th grade Fort Collins

SPIE-The International Society for Optics & Photonics

SPIE Optics & Photonics Award

Zander Graham \$100 Quest Academy <i>Spectroscopy</i>	7th grade Dacono
Sierra Kelly \$150 Miller Middle School <i>Black Roof, White Roof, Which One Is the Right Roof?</i>	6th grade Durango
Katherine Younglove \$250 Summit Middle School <i>Using Mirrors to Increase the Power Obtained by Solar PV Cells</i>	8th grade Boulder
VJ Christophersen \$100 Plainview School <i>El Sol - Inexpensive Energy</i>	9th grade Sheridan Lake
Eric Lyne \$150 Brush High School <i>Boosting Solar-Collector Efficiency with a Fresnel Lens</i>	9th grade Brush
Austin Moore \$250 Grace Preparatory Academy <i>Laser Viscometer</i>	10th grade Durango

The Inventors' Roundtable

Clint Sexton \$100, free patent search (\$499 value) Blevins Middle School <i>Wiismart</i>	8th grade Fort Collins
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Trout Unlimited

Trout Unlimited River Conservation Award

Leslie Seitz \$50 savings bond, alternate for scholarship to attend Colorado Trout Unlimited's River Conservation and Fly Fishing Youth Camp Fairview High School <i>Running Dry? Developing an Intuitive Water Planning Interface</i>	9th grade Boulder
Taylor Rocha \$100 savings bond, scholarship to attend Colorado Trout Unlimited's River Conservation and Fly Fishing Youth Camp Monte Vista High School <i>Macroinvertebrate and Nutrient Response to Stream Water Quality After a Wildfire on Medano Creek</i>	10th grade Monte Vista

United States Department of Commerce

DOC Excellence in Science and Engineering Award

Johanna Phillips alternate for opportunity for summer employment with Department of Commerce Monte Vista High School <i>Water In, Water Out: Using a Water Balance Model To Estimate Net Consumptive Availability</i>	12th grade Monte Vista
Victoria Milano opportunity for summer employment with Department of Commerce with the possibility for future continuing employment Brush High School <i>The Phenomenon of Oscillons in Vertically Vibrated Granular Material</i>	12th grade Brush

United States Geological Survey

USGS Excellence in Geological or Water Research Award

Emma Cooney reference book, mineral specimen Summit Middle School <i>Removing Copper with Fruit Peels and Seaweed</i>	8th grade Boulder
Sydney Matteson reference book, mineral specimen Palmer High School <i>How Well Is Your Well: The Effect of Hydrofracking Fluids on a Eukariotic Species</i>	9th grade Colorado Springs

Appendix 2

University of Colorado, Denver

Medical Scientist Training Program Award

Dorothy Pope 7th grade
\$50
The Classical Academy Colorado Springs
You Say Tomato, I Say To-mah-to!

Jenna Hartley 9th grade
\$50
Palmer High School Colorado Springs
Engineering a Novel Inhibitor for Encapsulated Pathogens

University of Northern Colorado

MAST Institute Award

Stevan Maksimovic 8th grade
\$50
Summit Middle School Boulder
How an Author Affects His or Her Numerical Style of Writing

Jacob Nichols 10th grade
\$50
Brush High School Brush
An Investigation of the Washboard Road Phenomenon

Wojtaszek Family

Paul Wojtaszek Memorial Award

Moeka Nakagawa 11th grade
certificate, \$300
Cherry Creek High School Greenwood Village
Analysis of Expression of Fructose Transporter GLUT5 in Rat Tissues with Regards to Reducing Obesity

Women in Physics

Ilse Meiler 8th grade
\$50
Peak to Peak Charter School Lafayette
Splat! An Investigation into the Splatter Patterns of Newtonian and Non-Newtonian Fluids

Xcel Energy

Environmental Stewardship Award

Cassandra Horton 8th grade
\$50
Quest Academy Dacono
Hydropower vs. Wind Power

Vishal Krishnan 10th grade
\$50
Cherry Creek High School Greenwood Village
Mitigation of Environmental Impacts Caused by Wind Turbines

Innovation in Energy Award

Teegan Hite & Kiselya Plewe 8th grade
\$50
Dolores Middle School Dolores
Taking a Stand

Wyatt Goodin 11th grade
\$50
Fairview High School Boulder
Examination of Power Grid Cascading Failure Through Simulation

Yale Science and Engineering Association

Most Outstanding 11th Grade Project Award

Gerri Roberts 11th grade
Hannah West 11th grade
certificate, medallion (to be mailed)
Poudre High School Fort Collins
Windsor High School Windsor
Green Processing of Fatty Acids for Fuel Production

SSP

American Psychological Association

Achievement in Psychological Science Award

Savannah Russell 10th grade
Katelan Sinski 9th grade
certificate
North Fork Vision School Paonia
A Study of the Speech and Riding Connection

Broadcom Foundation

Broadcom MASTERS Competition Nomination

Nadja de Sa 7th grade
nomination to compete in the Broadcom Masters competition
The Classical Academy Colorado Springs
Sticky Fingers

Callie Matteson & Ashley Vitti 6th grade
nomination to compete in the Broadcom Masters competition
North Middle School Colorado Springs
Just a Minute

Marlo Masters 7th grade
nomination to compete in the Broadcom Masters competition
The Classical Academy Colorado Springs
My Mom Was Robbed!!

Alexandra Famiglietti 8th grade
nomination to compete in the Broadcom Masters competition
Cherry Creek Challenge School Denver
Dissolving History: The Effects of Acid Rain on Marble and Other Building Materials

Evan Savage 7th grade
nomination to compete in the Broadcom Masters competition
Boulder Country Day School Boulder
Growing Algae for Biodiesel in the Desert

Leighton Burt 7th grade
nomination to compete in the Broadcom Masters competition
Sargent Junior High School Monte Vista
Elastic, Plastic, or Bust: Investigating Yield Strength of Butyl Rubber Inner Tubes

Appendix 2

Joshua Courtney nomination to compete in the Broadcom Masters competition Monument Academy <i>Condition Indexes of Fish as Bioindicators One Year After the Deepwater Horizon Oil Spill</i>	6th grade Monument	Rahul Ramesh nomination to compete in the Broadcom Masters competition Cherry Creek Challenge School <i>Got Fuel?</i>	7th grade Denver
Stevan Maksimovic nomination to compete in the Broadcom Masters competition Summit Middle School <i>How an Author Affects His or Her Numerical Style of Writing</i>	8th grade Boulder	Avi Swartz nomination to compete in the Broadcom Masters competition Cherry Creek Challenge School <i>One Out of 400 Choose 100</i>	7th grade Denver
Aleesa Muir nomination to compete in the Broadcom Masters competition The Classical Academy <i>Analyzing the Effects of Dietary Supplement Consumption on Probiotic Growth</i>	8th grade Colorado Springs	Ted Dumont nomination to compete in the Broadcom Masters competition Estes Park Middle School <i>The Effect of Altitude on Hematocrit</i>	7th grade Estes Park
Seth Young nomination to compete in the Broadcom Masters competition The Classical Academy <i>Microbe Blaster for a Crude Oil Disaster</i>	7th grade Colorado Springs	Kelsey Lindbloom nomination to compete in the Broadcom Masters competition Salida Middle School <i>Fueling the Future</i>	8th grade Salida
Alex Roerty nomination to compete in the Broadcom Masters competition Preston Middle School <i>It's Not a Catapult!</i>	8th grade Fort Collins	Elya Courtney nomination to compete in the Broadcom Masters competition Monument Academy <i>Is the Drag Force on a Supersonic Projectile Proportional to Air Density?</i>	8th grade Monument
Alison Henry nomination to compete in the Broadcom Masters competition The Classical Academy <i>This Is Your Bean. This Is Your Bean on Drugs.</i>	7th grade Colorado Springs	Misha Kummel nomination to compete in the Broadcom Masters competition North Middle School <i>Field Parameterization of a Model for Secondary Forest Succession by Shade Tolerance</i>	6th grade Colorado Springs
Madison Olver nomination to compete in the Broadcom Masters competition Blevins Middle School <i>Hay! How's Your Dust, Mold, and Nutritional Value?</i>	7th grade Fort Collins	<p>Intel Corporation <i>Intel Excellence in Computer Science Award</i></p>	
Kristina Cavey nomination to compete in the Broadcom Masters competition Turner Middle School <i>Secret Savior</i>	8th grade Berthoud	Jessica Constant certificate, \$200 (to be mailed) Poudre High School <i>Computer Modeling V: A Predictive Model of Tracer Dispersion in the Atmosphere</i>	11th grade Fort Collins
Nicholas Finan nomination to compete in the Broadcom Masters competition Peak to Peak Charter School <i>Sticky Water: Intermolecular Attraction</i>	8th grade Lafayette	<p>National High School & Two-Year College Mathematics Honor Society <i>Mu Alpha Theta Award</i></p>	
Ivo Erben nomination to compete in the Broadcom Masters competition Summit Middle School <i>Hyperborean History</i>	8th grade Boulder	Cole Hugelmeyer certificate Boulder High School <i>Proof That a Circular Hopf Link is a Stationary Point for Mobius Energy</i>	11th grade Boulder
Keanan Anderson Tate Hinger nomination to compete in the Broadcom Masters competition Pagosa Springs Middle School <i>What Is the Delta T of a Two Can Stirling Engine?</i>	6th grade 6th grade Pagosa Springs	<p>National Society of Professional Engineers <i>Innovative Engineering Award</i></p>	
Johann Kailey-Steiner nomination to compete in the Broadcom Masters competition Grant Beacon Middle School <i>Rocket Design Part 2 - Testing the Effects of Vortex Generators on Drag Coefficient</i>	7th grade Denver	Easton LaChappelle certificate, lapel pin, entry into National Innovative Engineering Award competition (\$1,000) Mancos High School <i>Fine Motor Skills Using EEG Technology and Biomechanical Prosthesis</i>	10th grade Mancos

Appendix 2

Ricoh Americas Corporation
Ricoh Sustainable Development Award

Noah Westfall 10th grade
certificate
Cherry Creek High School Greenwood Village
Heat Transfer from Biomass II

Society for In Vitro Biology
*Outstanding Achievement for Ability and Creativity
in In Vitro Biology Award*

Austin Reed 11th grade
certificate
Wray High School Wary
Does the TAST2R38 Gene Affect Body Fat Composition?

United States Department of Commerce
Taking the Pulse of the Planet Award

Emma Frantz 9th grade
certificate, medallion
Palmer High School Colorado Springs
*The Effect of the Sun on Cloud Formation and the Earth's
Climate*

United States Metric Association
Best Use of the International System of Units Award

Taylor Rocha 10th grade
certificate
Monte Vista High School Monte Vista
*Macroinvertebrate and Nutrient Response to Stream Water
Quality After a Wildfire on Medano Creek*

Appendix 3
2011/2012 Expense Report
September 1, 2011-August 31, 2012

Category Descriptions	Budget	Actual	Difference
INCOME			
Sponsorships	\$39,000.00	\$24,850.00	(\$14,150.00)
Contributions	\$5,000.00	\$2,702.06	(\$2,297.94)
General Income			
<i>Interest</i>	\$200.00	\$68.57	(\$131.43)
<i>Matching Gifts</i>	\$1,000.00	\$122.26	(\$877.74)
<i>RSF Outreach Funds</i>	\$7,500.00	\$7,500.00	\$0.00
<i>Sales</i>	\$1,500.00	\$1,087.90	(\$412.10)
<i>Scholarships/Special Awards</i>	\$3,660.00	\$5,200.00	\$1,540.00
<i>Teacher of the Year Award</i>	<u>\$3,000.00</u>	<u>\$3,000.00</u>	<u>\$0.00</u>
TOTAL General Income	\$16,760.00	\$16,978.73	\$218.73
Grants	\$10,500.00	\$10,000.00	(\$500.00)
In-Kind	\$12,400.00	\$19,119.16	\$6,719.16
Registrations	\$11,060.00	\$11,270.00	\$210.00
TOTAL INCOME	\$94,720.00	\$84,919.95	(\$9,800.05)
EXPENSES			
Awards			
Best of CSEF Awards	\$350.00	\$400.00	(\$50.00)
CSEF Special Awards	\$400.00	\$400.00	\$0.00
Grand Awards	\$9,000.00	\$9,100.00	(\$100.00)
Non-Cash Awards	\$800.00	\$1,852.72	(\$1,052.72)
Other Special Awards	<u>\$6,660.00</u>	<u>\$6,230.00</u>	<u>\$430.00</u>
TOTAL Awards	\$17,210.00	\$17,982.72	(\$772.72)
Board Expenses			
Communications	\$400.00	\$339.53	\$60.47
Meetings	\$1,875.00	\$1,504.94	\$370.06
Operations	<u>\$8,430.20</u>	<u>\$6,586.33</u>	<u>\$1,843.87</u>
TOTAL Board Expenses	\$10,705.20	\$8,430.80	\$2,274.40

Category Description	Appendix 3 Budget	Actual	Difference
ISEF			
Affiliation	\$650.00	\$650.00	\$0.00
Travel	<u>\$6,550.00</u>	<u>\$4,747.20</u>	<u>\$1,802.80</u>
TOTAL ISEF	\$7,200.00	\$5,397.20	\$1,802.80
Outreach	\$10,500.00	\$9,661.80	\$838.20
CSEF Expenses			
Adult Sponsors	\$300.00	\$338.16	(\$38.16)
Advisory Council	\$100.00	\$108.03	(\$8.03)
Finalist Activities	\$8,550.00	\$6,633.28	\$1,916.72
Finalist Registration	\$18,500.00	\$16,992.47	\$1,507.53
Fund Raising	\$100.00	\$68.68	\$31.32
Judging	\$5,075.00	\$5071.74	\$3.26
Personnel	\$9,022.80	\$8,342.82	\$679.98
Publications	\$2,750.00	\$2,507.72	\$242.28
Regional Fair Directors	\$100.00	\$424.49	(\$324.49)
Scientific Review Committee	\$700.00	\$594.60	\$105.40
Supplies	\$750.00	\$848.02	(\$98.02)
Volunteers	\$1,900.00	\$1,751.93	\$148.07
TOTAL CSEF Expenses	\$47,847.80	\$43,681.94	\$4,165.86
TOTAL EXPENSES	\$93,463.00	\$85,154.46	\$8,308.54
OVERALL TOTAL	\$1,257.00	(\$234.51)	(\$1,491.51)

