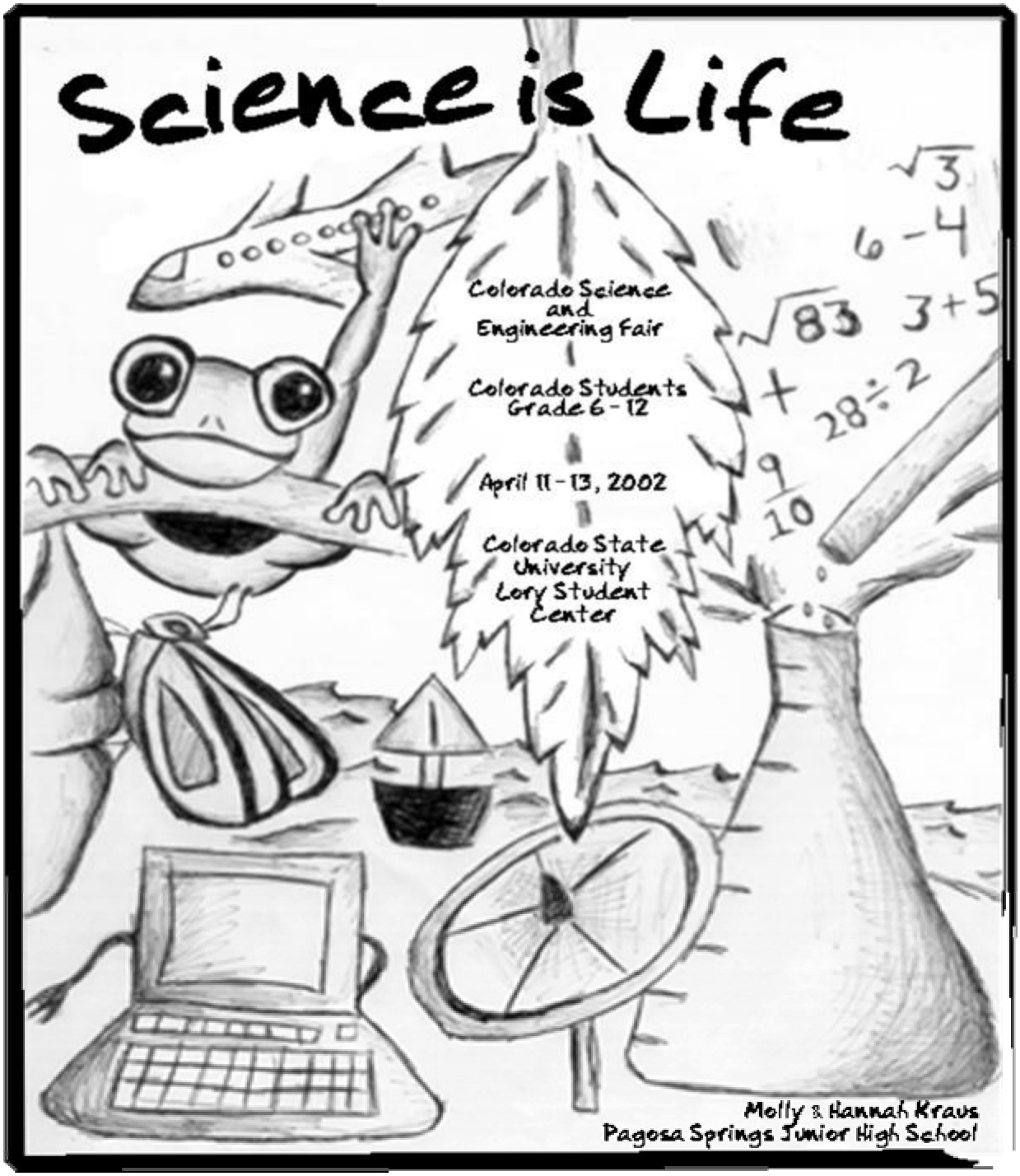
# Colorado State Science Fair, Inc.

## 2002 Annual Report




**August 31, 2002**

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**Fort Collins, CO 80523-1802**

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

# 2002 Annual Report

***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.***

Established in 1956, the Colorado State Science Fair, Inc. is a private, non-profit organization that holds a statewide competition each year. This competition, known as the Colorado Science and Engineering Fair (CSEF), is the state level event in a yearlong process of local and regional science fairs. More than two thousand students from all over the state participate in the statewide science fair program. The purpose of the CSEF is to stimulate student interest and encourage them in science and engineering through recognition of their ability and achievement.

This year, state winners were chosen from among 259 exhibits presented by 289 finalists from 12 regions within the state. This represented 85 schools throughout the state. More than 110 professional scientists, engineers and mathematicians interviewed the students and evaluated their projects before selecting the Grand Award winners. In addition, over 50 businesses, professional societies, and government agencies provided more than 100 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 calculators. Over 800 people attended the Awards Ceremony this year.

The 2002 Colorado Science and Engineering Fair had 30 sponsors. Sponsors included 2 Platinum Sponsors (providing over $2500 of support), 13 Gold Sponsors ($1000-$2500 of support each), 1 Silver Sponsor ($750-$1000 of support), and 14 Regular Sponsors ($500-$750 of support each). In addition, there were 15 Financial Contributors (less than $500 each). In addition, several individuals donated through the Denver Combined Federal Campaign.

In addition to getting the rare opportunity to speak with working scientists, Colorado Science and Engineering Fair student participants competed for awards in these categories: Botany; Earth and Space Sciences; Environmental Sciences; Engineering; Health and Behavioral Sciences; Mathematics and Computer Sciences; Physical Sciences; Zoology; and Team Interdisciplinary. Recognition for outstanding exhibits in each of these categories as well as an award for technical writing were given to students at the Colorado Science and Engineering Fair Awards Ceremony. The top two Senior Division winners at the state level are awarded trips to the Intel International Science and Engineering Fair (Intel ISEF).

A number of experiences were made available to students who participated in the Colorado Science and Engineering Fair. Tours of university and local corporate research facilities provided opportunities for students and their families to see research in action. The judges' interviews allowed the students to interact with professional scientists and engineers. 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.

Scholarships from Adams State College (ASC), Colorado School of Mines (CSM), and Colorado State University (CSU), were also presented. Adams State College awarded nine one-year full resident tuition and fees scholarships. The Colorado School of Mines awarded four four-year full resident tuition scholarships to 12$^{th}$ grade students in the categories of Physical Sciences, Engineering, Environmental Sciences, and Earth & Space Sciences. Colorado State University offered a $1,000 scholarship to the first place winner in each of the content categories in the Senior Division and $1,000 scholarship to each of the Senior Division All Fair winners. The Intel Corporation also awarded a $2,000 scholarship to a twelfth grader to be used at a college or university of their choice in honor of Ryan Patterson, the 2001 Intel ISEF top winner from Colorado.

## 2002 Colorado Science and Engineering Fair

The forty-seventh Colorado Science and Engineering Fair was held at the Lory Student Center on the campus of Colorado State University on April 11-13, 2002. Two hundred eighty-nine students participated in this three-day event and competed for honors in their respective categories. This year, the CSEF was honored to have as the guest speaker, Nobel Laureate, Dr. Carl Wieman. Carl Wieman is a Distinquished Professor of Physics at the University of Colorado in Boulder, CO. He is also a Fellow of JILA, an institute operated jointly by the University of Colorado and the National Institute of Standards and Technology. Dr. Wieman is the recipient of a myriad of scientific awards but is most noted for his "Bose-Einstein Condensation: Quantum weirdness at the lowest temperature in the universe" research for which he received the Nobel Prize in 2001. In addition to his research activities, Wieman has been involved in innovations in science education, and has given many presentations to high school classes and general audiences. Currently he is a member of the National Task Force on Undergraduate Physics Revitalization. He is also an elected member of the National Academy of Sciences Board on Physics and Astronomy and the American Academy of Arts and Sciences. (*See 2002 CSEF Schedule – Appendix 1)*

The top exhibitor of the 47th Annual Colorado Science and Engineering Fair and winner of an all-expense paid trip to compete in the Intel International Science and Engineering Fair was: **Craig Wright** from Woodlin High School in Woodrow, CO, grade 10, for the project: *Designing A Linear Peristaltic Pump Using Ferrofluids.* The runner-up for the best in the state science fair, also a winner of an all-expense paid trip to Intel ISEF was: **Josh Haimes** from Boulder High School in Boulder, CO grade 12, for the project: *WGA Amplification And Thin Film Dectection of Methicillin Resistant/Sensitive Staphylococcus aureus.* Awarded third place in the Senior Division, and also winners of an expense paid trip to competeat the Intel ISEF trip were: **Aaron Burgess and Kristen Rasmussen,** both from Fairview High School in Boulder, CO, grade 11, for their project: *Aircraft Icing: Why Does It Happen?*

The top winner of the Junior Division was **Meredith MacGregor** from Burbank Middle School in Boulder, CO, grade 7, for the project: *Avalanche! A Search For Self-Organized Criticality*. The exhibit judged second best in the Junior Division was by **Adam Sidman** from North Middle School in Colorado Springs, CO, grade 8, for *Wind Turbine Design*. Third best in the Junior Division was **Nathan McNew** from Jefferson Academy Junior High School in Arvada, CO, grade 8, for *Investigation of Prime Numbers*.

The winner of the Ralph F. Desch Memorial Technical Writing Award was **Adam Curry** from Palisade High School in Palisade, CO, grade 12, for the project: *The Cosmic Early Warning*.

The winner of the Student Choice Award - Senior Division was **Brandon Rosgen**, from Pagosa Springs High School in Pagosa Springs, CO, grade 11, for the project: *River Banks – Nature's Erodible Boundaries*.

The winner of the Student Choice Award - Junior Division was **Meredith MacGregor**, from Burbank Middle School in Boulder, CO, grade 7, for the project: *Avalanche! A Search For Self-Organized Criticallity*.

The winner of the Poster Art Contest was **Lauren Goulding** from Palmer High School in Colorado Springs.

Winners of the scholarships given by the universities and colleges were:

*Adams State College*

**Jaqueline Consaul** from Del Norte High School in Del Norte, CO, grade 11, for the project: *A Study On The Interaction Between Blackleg and PVY On Potatoes.*

**Brandon Rosgen** from Pagosa Springs High School in Pagosa Springs, CO, grade 11, for the project: *River Banks – Nature's Erodible Boundries*

**Leyton Laybourn** from Arickaree High School in Anton, CO, grade 10, for the project: *The Best Superinsulator.*

**Christine Knoblauch** from Monte Vista High School in Monte Vista, CO, grade 12, for the project: *Where's It Coming From?*

**April Mertens** from Merino Jr/Sr High School in Merino, CO, grade 12, for the project: *A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe.*

**Colin Oldberg** from Coronado High School in Colorado Springs, CO, grade 9, for the project: *Light-Operated Logic.*

**Sara McFarland** from Hoehne High School in Hoehne, CO, grade 11, for the project: *The Effect Of Triclosan On Antibiotic Resistance.*

**Megan Quick** from Palmer High School in Colorado Springs, CO, grade 12, for the project: *A Comparison Of The Effeciencies Of Tracking Photovoltaic Cells vs. Mounted Photovoltaic Cells.*

**Matthew Simes** from Centaurus High School in Lafayette, CO, grade 12, for the project: *Relative Abundance of Ponderosa Pine Bird Species Along An Elevational Gradient.*

*Colorado State University*

**Nicole Thomas** from Sierra Grand High School in Blanca, CO, grade 12, for the project: *WNC 230-14RU Resistant Or Immune To Potato Leaf Roll Virus.*

**Brandon Rosgen** from Pagosa Springs High School in Pagosa Springs, CO, grade 11, for the project: *River Banks – Nature's Erodible Boundries*.

**Craig Wright** from Woodlin High School in Woodrow, CO, grade 10, for the project: *Designing A Linear Peristaltic Pump Using Ferrofluids.*

**Jessica Caver** from Woodlin High School in Woodrow, CO, grade 11, for the project: *Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams.*

**April Mertens** from Merino Jr/Sr High School in Merino, CO, grade 12, for the project: *A Promising Cancer Treatment: Tumor Suppression Using The Synergism of NSAID and Aloe*.

**Colin Oldberg** from Coronado High School in Colorado Springs, CO, grade 9, for the project: *Light-Operated Logic*.

**Josh Haimes** from Boulder High School in Boulder, CO, grade 12, for the project: *WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus.*

**Amber Henry** from Hi-Plains High School in Seibert, CO, grade 10, for the project: *An Algorithm Demonstrating Impact SplatterPattern Due To Angle Of Incidence Using A Dichontomous Key*.

**Holly McGuire** from Woodlin High School in Woodrow, CO, grade 11, for the project: *Comparing Extracted And Amplified Mitochondrial DNA.*

**Kristen Rasmussen** and **Aaron Burgess** from Fairview High School in Boulder, CO, grade 11, for the project: *Aircracft Icing: Why Does It Happen?.*

*Ryan Patterson Scholarship*

**Lila Hickey** from Brush High School in Brush, CO, grade 12, for the project: *Up & Downs: Simulated Elevator Control*.
*(See Press Release – Appendix 2 – for all award winners.)*

## 2002 Intel International Science and Engineering Fair

CSEF's top three winners, Craig Wright from Woodlin High School, Josh Haimes from Boulder High School, and Kristen Rasmussen & Aaron Burgess from Fairview High School represented Colorado at the Intel International Science and Engineering Fair (Intel ISEF) which is the culmination of each year's science fair experience. The 53rd Intel ISEF was held this year from May 12-18, 2002, in Louisville, KY.

**Craig Wright** won 4th Place in the category of Engineering ($500) and a special award from IEE – Louisville Section of $100.

**Josh Haimes** won 4th Place in the category of Microbiology ($500).

**Kristen Rasmussen** and **Aaron Burgess** were awarded Honorable Mention from the American Meteorological Society – a CD ROM and a subscription to "Bulletin of the American Meteorological Society."

Other attendees from Colorado also receiving awards were:
**Brian Camley** of Colorado Springs, CO, Biochemistry Category Award – 3rd place for $1,000.
**Pascal Getreuer** of Colorado Springs, CO Computer Sciences Category Award – 4th place for $500 and a special award from the American Association for Artificial Intelligence of $1,000.
**Jessica Cavar** of Deer Trail, CO, Environmental Sciences Award – 4th place for $500 and a Mexico Institute of Mining and Technology full tuition scholarship.
**Michelle Itano** of Boulder, CO, Zoology Category Award – 2nd place for $1,500.
**Adam Curry** of Palisade, CO, received the technical volume in engineering geology, "The Glossary of Geology", and a subscription to "Geotimes" as well as $200 from the Patent and Trademark Office/US Department of Commerce/Patent and Trademark Office.
**Michelle Keck** of Monte Vista, CO, Honorable Mention from the American Psychological Association – APA/Intel ISEF pin, pamphlet on career choices in psychology, and dot com Sense pamphlet on internet privacy.
**Sara McFarland** of Hoehne, CO, $5,000 scholarship per year for four years from Midway College.

The Intel International Science and Engineering Fair is the Olympics, the World Cup and the World Series of science competitions. Held annually in May, the Intel ISEF brings together over 1,200 students from 48 states and 40 nations to compete for scholarships, tuition grants, internships, scientific field trips and grand prizes.

## Organization

The Colorado Science and Engineering Fair would not be possible without the dedication and tremendous efforts of many committed individuals and organizations including school districts, universities, government agencies, corporations, and professional associations. The groups sustain the fair through financial and resource support, special awards, and most importantly, through providing dedicated volunteers to serve on the fair's many working committees.

It is no exaggeration to say that state fair volunteers indeed make the fair possible each year by serving on the Advisory Council and its various committees. They and others also serve as judges for the Colorado Science and Engineering Fair. Prior to the statewide event, thirteen regional fairs and a great number of local school fairs are conducted throughout the state; each of these fairs is supported and promoted by hardworking and dedicated educators at the local level. Before a student's exhibit even makes it to a local fair, it requires the encouragement and support from individual teachers, 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.

The success of each year's 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 on the efforts and coordination of more than three hundred committed volunteers. To organize and stage the fair every year requires a great effort, but it also offers many personal challenges and rewards. To witness the level of achievement, pride, and excitement of these bright young people in their scientific endeavors is one of the rewards that all of the volunteers share, and it also speaks to the high level of students' aptitude and enthusiasm for science in Colorado.

## Goals and Objectives

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

- ? 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, with Colorado science teachers and Colorado scientists and enginners 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 and serving 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 Setvice affiliation as a means of attending the Intel ISEF;
- ? Providing a forum where regional science fairs can influence policies, rules and by-laws fo 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;and
- ? Increading public awareness and appreciation of science, engineering, and technology in the schools.

## Mission Statement

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

**Colorado Science and Engineering Fair sponsors provide the majority of the financial and resource support. In addition, each sponsor may provide two volunteers to serve on the Fair Board of Directors.**

## PLATINUM SPONSORS

*(Providing over $2500 in support of CSEF)*

Colorado State University**,** Office of the Provost and College of Engineering
Hach Scientific Foundation

## GOLD SPONSORS

*(Providing $1000 to $2500 in support of the CSEF)*

Agilent Technologies
Anheuser-Busch Inc.
Ball Corporation
Ball Aerospace anf Technologies
Colorado Dental Association
Colorado Medical Society-Education Foundation
Domino's of Fort Collins
Kodak Colorado Division
Lockheed Martin Astronautics
LSI Logic
Safe Sites of Colorado, LLC
Seagate Technology
US Department of Commerce/NTIA

## SILVER SPONSORS

*(Providing $750 to $1000 in support of the CSEF)*

US Department of Commerce/NIST

## REGULAR SPONSORS

*(Providing $500 to $750 in support of CSEF)*

Amgen, Inc
Reid & Helen Cameron
Colorado Engineering Council
Forest Oil Company
Hewlett-Packard Company
Kaiser-Hill Company
Norgren
San Luis Valley Regional Science Fair
Washington Group International
US Department of Commerce/NOAA
Denver Chapter of the IEEE/LEOS
CSU-Center for Science, Mathematics & Science Technology Education
National Renewable EnergyLab
University of Colorado - College of Engineering and Applied Science

## CONTRIBUTORS

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

Ed & Lucy Adams
Albertson's
Sam & Eileen Bartlett
Dan & Carol Blake
Book Center of the Rockies
Denver Nuggets
Gina Holland
King Soopers
Robert & Dolly Morrow
Sigma Xi, CSU Chapter
Target
Tracy Teyler Memorial
USR Corporation
Walmart
Xcel Energy Foundation-Dollars for Doing Program
Xcel Energy Foundation – Matching Gifts Program

**And many federal employees contributed through the Combined Federal Campaign.**

## LYNN BUTLER MEMORIAL SCHOLARSHIP

The CSSF, Inc. Board of Directors has established the Lynn Butler Memorial Scholarship Fund to assist low-income finalists in paying their CSEF registration fee. Lynn Butler was the CSEF Fair Director for the 1991 Fair, as well as a hard working, dedicated volunteer for CSEF and for science students statewide until her death in 1996.

## ADVISORY COUNCIL

The CSEF Advisory Council includes all Regional Fair Directors, the CSSF Inc. Board of Directors and members at large.

### Colorado State Science Fair, Inc. - Board of Directors

President - Harvey Teyler
Vice President - Al Bedard
Treasurer - Samuel Bartlett
Secretary - David Holm
Recording Secretary - Lucy Adams
CSEF Director - Courtney Butler
Colorado Dental Association - Carol Denning, Robert Morrow,
Colorado Energy Science Center - Patrick Keegan
Colorado Engineering Council - Sam Bartlett, Gina Holland
Colorado Medical Society - A. Bill Kieger, William Pierson
Colorado State University - Ed Geary, Rick Miranda
Kodak Colorado Division - Phil Montera
Lockheed Martin Astronautics - Paul Cheng, John Parker
NREL-Midwest Research Institute - Daniel Blake, Bonnie Hames
LSI Logic - Vishy Lakshamanan
Reid & Helen Cameron - Reid Cameron, John McConnell
Safe Sites of Colorado, LLC - Mike Bemski, John O'Brien
San Luis Valley Regional Science Fair - David Holm, Harvey Teyler
University Of Colorado, Engineering and Applied Science - Sherry Snyder
US Department of Commerce/NIST - Bill Dube, Sonja Ringen
US Department of Commerce/NOAA - Al Bedard, David Clark
US Department of Commerce/NTIA - Amy Weich

### Advisory Council - Members At Large

Gary Church
Jane Cowden
Lisa Hatcher
Larry Jakel
Charles Johnson
Carol Kallevik
Beverly Meier
Jody Oaks
Russ Schnell
Deanna Schrock
Brandi Scruggs
Jim Sites
Doug Steward
Rachel Torgerson
Laura Ussery
Dan Van Gorp

## Past Colorado Science and Engineering Fair Directors

| | |
|---|---|
| *Charles Bragaw | 1956-1967 |
| *Calvin Fisher | 1968-1974 |
| *Sam Shushan | 1975-1977 |
| Gordon Moore | 1978-1979 |
| *Russell B. Stoner | 1979-1981 |
| Virgil A. Sandborn | 1981-1983 |
| James R. Sites | 1984-1985 |
| Lloyd Walker | 1986-1988 |
| Connie Vader-Lindholm | 1989-1990 |
| Lynn Butler | 1991-1992 |
| Kate Taylor | 1992-1994 |
| Christal McDougall | 1995-1996 |
| Kate Taylor | 1997-1998 |
| Lucy Adams | 1998-1999 |
| Courtney Butler | 1999-present |

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

## Regional Science Fairs

Arkansas Valley Regional Science Fair
Joel Grey, Jim Herrell

Boulder Valley Regional Science Fair
Kym Monacelli, Val Havlick

Denver Metropolitan Science Fair
Jim Stevens, Kristina Wenzel

East Central Regional Science Fair
William Mallory, Marguerite Yowell

Lamar Community College (Southwest) Regional Science Fair
Terry Lira, Robin Staker

Longs Peak Regional Science Fair
Terry Scott, Courtney Willis

Morgan-Washington Bi-County Regional Science Fair
Elemer Bernath, Nancy Gettman

Northeastern Regional Science Fair
Gina Brandt

Pikes Peak Regional Science Fair
Georgia Matteson

San Juan Basin Regional Science Fair
Martha Iverson

San Luis Valley Regional Science Fair
Lucy A. Adams, Crystal Miller

Western Regional Science Fair
Harmony Voorhies, Rob Robison

## Working Committees

| | |
|---|---|
| Alumni (CSEF) | Bob Morrow |
| Awards Ceremony | Courtney Butler (CSEF Director), Harvey Teyler (CSSF, Inc. President), Al Bedard (CSSF, Inc. Vice President), Sam Bartlett (CSSF, Inc. Treasurer & Special Awards Chair), Gina Holland (Grand Awards Judging Chair), John Parker (announcer), Bonnie Hames (announcer) |
| Display and Safety | Dan Van Gorp, Elemer Bernath (SRC Chair), Sonja Ringen, Deanna Schrock |
| Finance | Dan Blake, Bob Morrow (CSSF, Inc. Past President), Harvey Teyler (CSSF, Inc. President), Al Bedard (CSSF, Inc. Vice President), Sam Bartlett (CSSF, Inc. Treasurer), David Holm (CSSF, Inc. Secretary), Courtney Butler (CSEF Director), Reid Cameron, John McConnell |
| Grand Awards Judging | Gina Holland, Bonnie Hames |
| Photography | Amy Weich, Eileene Gooding (awards ceremony) |
| Publicity | Dave Clark, Al Bedard (CSSF, Inc. Vice President), Gary Wilson |
| Registration | Courtney Butler, Lucy Adams |
| Room Set-Up | Jim Sites, Laura Ussery, Courtney Butler (CSEF Director) |
| Scholarships | David Holm (CSU), Lucy Adams (ASC), Jane Cowden (CSM), Judy Cara (Intel) |
| Scientific Review | Elemer Bernath, Charles Johnson, Doug Steward, Jody Oaks, Lucy Adams, Courtney Butler, Larry Jakel, Brandi Scruggs |
| Special Awards | Sam Bartlett, Paul Cheng, Beverly Meier |
| Student Activities | Lucy Adams, David Holm (CSSF, Inc. Secretary) |
| Tours - | |
| Volunteer Coordination | Courtney Butler (CSEF Director) |

Underlined names are the chairs of those committees.

**Budget Report**
**September 1, 2001 through August 31, 2002**

| Category Descriptions | Budget | Actual | Difference |
|---|---|---|---|
| **INCOME** | | | |
| Sponsorships | $ 26,450.00 | $ 24,550.00 | $ (1,900.00) |
| Contributions | $ 2,495.00 | $ 2,237.50 | $ (257.50) |
| In-Kind | $ 4,900.00 | $ 7,417.60 | $ 2,517.60 |
| Registrations | $ 10,710.00 | $ 10,570.00 | $ (140.00) |
| Interest | $ 500.00 | $ 474.40 | $ (25.60) |
| Other | $ 1,100.00 | | $ 3,768.50 |
| *Misc. Sales* | | $ 80.00 | |
| *Tour Tickets* | | $ 198.50 | |
| *Photo Sales* | | $ 590.00 | |
| *Scholarships* | | $ 4,000.00 | |
| **TOTAL INCOME** | **$ 46,155.00** | **$ 50,118.00** | **$ 3,963.00** |

| EXPENSES | | | |
|---|---|---|---|
| Awards Ceremony | | | |
| Cash Awards | $ 4,075.00 | $ 4,075.00 | $ - |
| Other Awards | $ 700.00 | $ 4,749.26 | $ (4,049.26) |
| Photos | $ 300.00 | $ 465.30 | $ (165.30) |
| Press Release | $ 350.00 | $ 381.50 | $ (31.50) |
| Room Rental | $ 500.00 | $ - | $ 500.00 |
| Total Awards Ceremony | $ 5,925.00 | $ 9,671.06 | $ (3,746.06) |
| CSSF, Inc. Board | | | |
| Communications | $ 514.00 | $ 473.78 | $ 40.22 |
| Equipment | $ - | $ - | $ - |
| Meetings | $ 700.00 | $ 628.44 | $ 71.56 |
| Operations | $ 5,500.00 | $ 5,864.28 | $ (364.28) |
| Services | $ - | $ - | $ - |
| Supplies | $ 600.00 | $ 183.07 | $ 416.93 |
| Total CSSF, Inc. Board | $ 7,314.00 | $ 7,149.57 | $ 164.43 |
| Finalists | | | |
| Activities | $ 6,600.00 | $ 6,946.30 | $ (346.30) |
| Publications | $ 1,045.00 | $ 1,144.06 | $ (99.06) |
| Registration | $ 2,180.00 | $ 2,137.05 | $ 42.95 |
| Room Rental | $ 750.00 | $ 750.00 | $ - |
| Total Finalists | $ 10,575.00 | $ 10,977.41 | $ (402.41) |
| ISEF | | | |
| Affiliation | $ 500.00 | $ 500.00 | $ - |
| Travel | $ 6,125.00 | $ 3,618.70 | $ 2,506.30 |
| Total ISEF | $ 6,625.00 | $ 4,118.70 | $ 2,506.30 |
| Judging | | | |
| Communications | $ 1,270.00 | $ 1,421.60 | $ (151.60) |
| Room Rental | $ 260.00 | $ 160.00 | $ 100.00 |
| Supplies | $ 150.00 | $ 95.03 | $ 54.97 |
| Thank Yous | $ 3,075.00 | $ 2,719.85 | $ 355.15 |
| Total Judging | $ 4,755.00 | $ 4,396.48 | $ 358.52 |
| Other Fair Expenses | | | |
| Fund Raising | $ 100.00 | $ 134.23 | $ (34.23) |
| Personnel | $ 3,800.00 | $ 3,930.81 | $ (130.81) |
| Publicity | $ 750.00 | $ 865.64 | $ (115.64) |
| Regional Fair Directors | $ 350.00 | $ 97.66 | $ 252.34 |
| Supplies | $ 250.00 | $ 259.93 | $ (9.93) |
| Volunteers | $ 1,000.00 | $ 990.02 | $ 9.98 |
| Total Other Fair Expenses | $ 6,250.00 | $ 6,278.29 | $ (28.29) |
| SRC/Display & Safety | | | |
| Communications | $ 100.00 | $ 7.02 | $ 92.98 |
| Meetings | $ 600.00 | $ 480.18 | $ 119.82 |
| Supplies | $ 200.00 | $ 77.52 | $ 122.48 |
| Total SRC/Display & Safety | $ 900.00 | $ 564.72 | $ 335.28 |
| **TOTAL EXPENSES** | **$ 42,344.00** | **$ 43,156.23** | **$ (812.23)** |
| **INCOME - EXPENSES** | **$ 3,811.00** | **$ 6,961.77** | **$ 3,150.77** |

## 47TH ANNUAL COLORADO SCIENCE AND ENGINEERING FAIR

Lory Student Center | Fair Headquarters: 2nd Floor Lobby | Colorado State University

### THURSDAY, APRIL 11, 2002

| | |
|---|---|
| 8:30 - 9:00 AM | Photography and Display & Safety Committee Meetings: Main Ballroom |
| 9:00 - 11:00 AM | **FINALIST CHECK-IN:** Exhibit Areas Open for Set-Up. |

*Finalists **MUST** stay with exhibit until Exhibit Safety Check-Off Sheet is signed by a Display & Safety Committee Member and an Official Photo has been taken. Finalists must be out of the Exhibit Areas by noon.*

| | |
|---|---|
| 10:30 - 11:00 AM | Grand Awards Judge Captain's Briefing: Cherokee Park Room |
| 11:00 - 11:30 AM | Grand Awards Judge's Briefing: Cherokee Park Room |
| 11:30 AM - 12:30 PM | Grand Awards Judge's Luncheon: North Ballroom |
| 12:30 - 1:00 PM | Special Awards Judge's Briefing: Room 228 |
| 12:00 - 5:00 PM | JUDGING |

| | |
|---|---|
| 12:00 - 1:00 PM | Grand Awards Judges only in exhibit areas. |
| 1:00 - 2:00 PM | Special Awards Judges may enter exhibit areas. Judges only in exhibit areas. |
| 2:00 - 5:00 PM | **Students must be at their exhibits for interviews.** |
| 5:30 PM | EXHIBIT AREAS ARE LOCKED: Final Grand Awards Judging continues |

**No one else is permitted in the exhibit areas at this time.**

| | |
|---|---|
| 1:45 - 2:00 PM | **Finalist Orientation Meeting:** CSU Theatre -- ***Mandatory** for all exhibitors.* |
| 2:00 - 5:00 PM | Parent/Teacher/Sponsor's Lounge: Refreshments in Room 203/205 |
| 2:00 - 4:00 PM | Regional Fair Director's Meeting: Room 224/226 |
| 4:00 PM | All ISEF Adult Delegates Meeting: Room 224/226 |

### FRIDAY, APRIL 12, 2002

| | |
|---|---|
| 9:00 AM - 5:00 PM | **CSEF OPEN TO PUBLIC:** Main Ballroom |
| 9:00 - 9:50 AM | Guest Speaker: Dr. Carl Wieman, 2001 Nobel Laureate: CSU Theatre |
| 10:30 AM – 11:30 AM | Special Presentation: Ryan Patterson, the 2001 CSEF and ISEF winner will be giving a special presentation on his award winning project and highlights of his exciting year. Room 230 LSC |
| 10:00 AM - 4:00 PM | Tours: Students, their sponsors, family, and judges are invited to participate in the tours by pre-registering on Thursday morning. |
| 7:00 PM | **AWARDS CEREMONY:** Thompson Valley High School |

### SATURDAY, APRIL 13, 2002

| | |
|---|---|
| 8:00 – 9:00 AM | Intel/ISEF trip winners and teachers must meet with CSEF Director to go over paperwork and travel arrangements: 2nd Floor Lobby LSC |
| 9:00 - 11:00 AM | **CSEF OPEN TO PUBLIC:** *Finalists must be at their exhibits.* |
| 9:00 - 11:00 AM | Advisory Council Meeting: Room 224/226 |
| 11:00 AM - 12:00 PM | **PIZZA PARTY:** North Ballroom<br>Sponsored by *Dominoes of Fort Collins* for finalists, their sponsors and families.<br>**Finalists must be present to win door prizes!** |
| 12:30 - 2:00 PM | CSSF, Inc. Board of Director's Meeting: Room 224/226 |
| 12:00 - 2:00 PM | Exhibit Dismantling: **Everything must be removed by 2:00 PM.** |

**Upcoming Intel/International Science and Engineering Fair, Louisville, KY, May 12 - 18, 2002.**
**NEXT YEAR'S COLORADO SCEINCE AND ENGINEERING FAIR: APRIL 10 - 12, 2003.**

# 2002 Colorado Science and Engineering Fair
# Grand Awards Press Release

## Junior All Fair

**1st Place**
Meredith MacGregor 7th grade
*Avalanche! A Search For Self-Organized* Criticality
Burbank Middle School
Boulder, CO

**2nd Place**
Adam Sidman 8th grade
*Wind Turbine Design*
North Middle School
Colorado Springs, CO

**3rd Place**
Nathan McNew 8th grade
*Investigation Of Prime Numbers*
Jefferson Academy Junior High School
Arvada, CO

## Senior All Fair

**1st Place**
Craig Wright 10th grade
*Designing A Linear Peristaltic Pump Using Ferrofluids*
Woodlin High School
Akron, CO

**2nd Place**
Josh Haimes 12th grade
*WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus*
Boulder High School
Boulder, CO

**3rd Place**
Aaron Burgess 11th grade
Kristen Rasmussen 11th grade
*Aircraft Icing: Why Does It Happen?*
Fairview High School
Boulder, CO

## Junior Botany

**1st Place**
Harold Klausner 8th grade
*Available Nitrogen vs. Legume Nodulation*
Woodlin High School
Woodrow, CO

**2nd Place**
Mallory White 8th grade
*The Effects Of Agrobacterium tumefaciens On The Growth Of Crown Galls On Different Dicotyledonous Plants*
North Middle School
Colorado Springs, CO

**3rd Place**
Ashley Button 6th grade
*Don't Invade My Space*
Fort Lupton Middle School
Fort Lupton, CO

**Honorable Mention**
Chris Messick 7th grade
*The Role Of Preservatives In The Delay Of Senescence Of Cut Flowers*
Sargent Junior High School
Monte Vista, CO

**Honorable Mention**
Emily Woods 6th grade
*Secret Weapons: Allelochemicals In Plants*
Summit Middle School
Boulder, CO

**Honorable Mention**
Mathew Brennan 7th grade
*This Is My Space - The Impact Of Allelopathy*
St. Columba School
Durango, CO

**Honorable Mention**
Kevin Hurd 7th grade
*Jack, Check Your Soil's pH before You Plant Your Beans!*
Holy Family Catholic School
Grand Junction, CO

**Honorable Mention**
Jed Michal 8th grade
*Depth vs. Development*
Arriba-Flagler Middle School
Flagler, CO

**Honorable Mention**
Bradley Hertneky 8th grade
*The Role Of Polymers In Crop Drought Tolerance*
Burlington Middle School
Burlington, CO

## Senior Botany

**1st Place**
Nicole Thomas 10th grade
*WNC 230-14RU Resistant Or Immune To Potato Leaf Roll Virus*
Sierra Grande High School
Blanca, CO

**2nd Place**
Jacqueline Consaul 11th grade
*A Study On The Interaction Between Blackleg And PVY On Potatoes*
Del Norte High School
Center, CO

**3rd Place**
Wumesh Khatri 12th grade
*Glycolysis In Isoprene-Emitting Chloroplasts*
Boulder High School
Boulder, CO

**Honorable Mention**
Levi Klausner 11th grade
*Selecting For Salt Tolerance In 5 Varieties Of Wheat*
Woodlin Undivided High School
Woodrow, CO

**Honorable Mention**
Tyler Benton 9th grade
*An Ecological Study Of The Efficacy Of The Conservation Reserve Program*
Stratton High School
Vona, CO

## Junior Earth & Space Sciences

**1st Place**
Annie Sandner 8th grade
*Aerodynamics Of Modern Rocketry*
St. Columba School
Durango, CO

**2nd Place**
Jeffrey Hrncir 7th grade
*Dinosaur Tracks*
East Middle School
Grand Junction, CO

**3rd Place**
Lena Martin 7th grade
*Time: Sun vs. Clock*
Genoa-Hugo Middle School
Genoa, CO

**Honorable Mention**
Will Scripps 6th grade
*Which Helicopter Floats Slowest?*
Evergreen Mountain School
Evergreen, CO

## Senior Earth & Space Sciences

**1st Place**
Brandon Rosgen 11th grade
*River Banks - Nature's Erodible Boundaries*
Pagosa Springs High School
Pagosa Springs, CO

**2nd Place**
Adam Curry 12th grade
*The Cosmic Early Warning*
Palisade High School
Palisade, CO

**3rd Plac**
Renee Musgrave 9th grade
*Rainbow Lightning?*
Liberty High School
Yuma, CO

## Junior Engineering

**1st Place**
Adam Sidman 8th grade
*Wind Turbine Design*
North Middle School
Colorado Springs, CO

**2nd Place**
Matthew Rotbart 8th grade
*Modeling The Collapse Of The World Trade Center: The Effect Of Heat On The Tensile Strength Of Steel*
Rocky Mountain Hebrew Academy
Denver, CO

**3rd Place**
Joseph Kelly 7th grade
*How Well Does A Directional Antenna Concentrate Radio Energy?*
St. John the Evangelist School
Loveland, CO

**Honorable Mention**
Devin Adam 8th grade
*A Hot Idea For A Cool Computer*
Crawford Elementary School
Crawford, CO

**Honorable Mention**
Molly May 6th grade
*A Comparison Of Tensile Strength Of Various Materials*
St. Columba School
Durango, CO

**Honorable Mention**
Daniel Weidlein 6th grade
*Into The Wind: Wind Powered Cars*
Summit Middle School
Boulder, CO

**Honorable Mention**
Steven Mitton 7th grade
*Holy Hovercraft*
Mancos Middle School
Mancos, CO

## Senior Engineering

**1st Place**
Craig Wright 10th grade
*Designing A Linear Peristaltic Pump Using Ferrofluids*
Woodlin Undivided High School
Akron, CO

**2nd Place**
Robert Ussery 10th grade
*Autonomous UAV Design*
Ussery Home School
Fort Collins, CO

**3rd Place**
Justin Migacz 11th grade
*Thermal Degradation Of Josephon Junctions*
Cherry Creek High School
Englewood, CO

**Honorable Mention**
Michael Yurkoski 11th grade
*Rarr - An Alternative To Human Reconnaissance*
Broomfield High School
Broomfield, CO

**Honorable Mention**
Craig Bryan 11th grade
*Vulcan Block II*
Sargent High School
Monte Vista, CO

**Honorable Mention**
Emma McArdle 11th grade
*Is Your Roof Snow Proof?*
Monte Vista High School
Monte Vista, CO

**Honorable Mention**
Dak Steiert 11th grade
*Ramjet Propulsion For High Altitude Launch And Research*
Battle Mountain High School
Edwards, CO

**Honorable Mention**
Leyton Laybourn 10th grade
*The Best Superinsulator*
Arickaree Undivided High School
Cope, CO

## Junior Environmental Sciences

**1st Place**
Meaghan Kormondy 8th grade
*Paper Or Plastic?*
St. Mary's School of Littleton
Highlands Ranch, CO

**2nd Place**
Maggie Reinsvold 8th grade
*The Effect Of Magnesium Chloride On Decomposition*
Frontier Academy
Greeley, CO

**3rd Place**
Jacquie Beckvermit 8th grade
*Do You Drink Undrinkable Water?*
Turner Middle School
Berthoud, CO

**Honorable Mention**
Laura Biggins 8th grade
*The Effect Of Wood Extracts On The Germination Of Seeds*
Boltz Junior High School
LaPorte, CO

**Honorable Mention**
Anna Hermann 6th grade
*Under The Stream: Using Aquatic Insects To Determine Water Quality*
Summit Middle School
Louisville, CO

**Honorable Mention**
Lyle Hoffschneider 7th grade
*"Black Gold" Particles: Comparing Particles Of Fuel Sources*
Pagosa Springs Junior High School
Pagosa Springs, CO

**Honorable Mention**
Melissa Kanack 7th grade
*Snow 'n' Ice 'n' Everything Not So Nice*
St. John the Evangelist School
Loveland, CO

**Honorable Mention**
Cacia Steensen 7th grade
*Does Pollution Affect Oxygen Production In Aquatic Plants?*
West Jefferson Middle School
Pine, CO

## Senior Environmental Sciences

**1st Place**
Jessica Caver 11th grade
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*
Woodlin High School
Deer Trail, CO

**2nd Place**
Benjamin Howard 12th grade
*An Evaluation Of The Effectiveness Of Reformulated Gasoline In Reducing Urban Benzene Concentrations*
Fairview High School
Boulder, CO

**3rd Place**
Katherine Hermann 9th grade
*Predicting Water Quality With Landscape Metrics*
Boulder High School
Louisville, CO

**Honorable Mention**
Stephen Canham 12th grade
*Prevention Of Soil Salinization From A Rising Water Table*
Cherry Creek High School
Greenwood Village, CO

**Honorable Mention**
Christine Knoblauch 12th grade
*Where's It Coming From?*
Monte Vista High School
Del Norte, CO

## Junior Health & Behavioral Sciences

**1st Place**
Jeff Loewe 8th grade
*Pick Up The Beat*
Evangelical Christian Academy
Colorado Springs, CO

**2nd Place**
Kelly Cook 8th grade
*Is What You See What You Get?*
Boltz Junior High School
Fort Collins, CO

**3rd Place**
Allison Qubain 8th grade
*Into Thin Air*
Gardner Elementary School
Gardner, CO

**Honorable Mention**
Andrea Buxton 8th grade
*Fluoride: When Is Enough*
Eads Junior High School
Lamar, CO

**Honorable Mention**
Hannah Lowinger 8th grade
*Type A GPA - Are They Synonymous?*
Rocky Mountain Hebrew Academy
Englewood, CO

**Honorable Mention**
Ian Springer 7th grade
*Lunar Changes And Their Effect On Human Behavior*
Lamar Middle School
Lamar, CO

**Honorable Mention**
T. J. Van Bibber 7th grade
*You Are What You Eat*
Sargent Junior High School
Monte Vista, CO

**Honorable Mention**
Kelly Dimmen 6th grade
*Stop In The Name Of The Law*
Sabin Middle School
Colorado Springs, CO

## Senior Health & Behavioral Sciences

**1st Place**
April Mertens 12th grade
*A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe*
Merino Jr/Sr High School
Merino, CO

**2nd Place**
Jaymee Jungie 11th grade
*Manipulation Of The Kreb's Cycle*
Cherry Creek High School
Englewood, CO

**3rd Place**
Brian Camley 11th grade
*Every Breath You Take: The Effects Of Radon On Biological Tissue - Damage And Immune Response*
Palmer High School
Colorado Springs, CO

**Honorable Mention**
Michelle Keck 12th grade
*Remembered And Forgotten: An Examination Of Autobiographical Memory, Reminiscence, And Cultural Influences On Memory*
Monte Vista High School
Monte Vista, CO

**Honorable Mention**
Jeff Marlow 11th grade
*Hydroxyl Radical Neutralization By Non-Steroid Anti-Inflammatory Drugs Related To Alzheimer's Prevention*
Cherry Creek High School
Englewood, CO

**Honorable Mention**
Krista Schroeder 9th grade
*Feeling Smart*
Palmer High School
Colorado Springs, CO

## Junior Mathematics & Computer Sciences

**1st Place**
Nathan McNew 8th grade
*Investigation Of Prime Numbers*
Jefferson Academy Junior High School
Arvada, CO

**2nd Place**
Robert Glissmann 8th grade
*Never Blinking, Never Sleeping: Image Preparation Improves Machine Vision*
Summit Middle School
Boulder, CO

**3rd Place**
Timothy Schneider 6th grade
*Programmable Vacuum Cleaner*
Miller Middle School
Durango, CO

**Honorable Mention**
Max Krakauer 6th grade
*Good To The Last Drop: The World Oil Shortage Simulator*
North Middle School
Colorado Springs, CO

## Senior Mathematics & Computer Sciences

**1st Place**
Colin Oldberg 9th grade
*Light-Operated Logic*
Coronado High School
Colorado Springs, CO

**2nd Place**
Amanda Parker 9th grade
*Not So Perfect Sine Waves: A Fourier Analysis Of An Audio Oscillator*
Cherry Creek High School
Centennial, CO

**3rd Place**
Eric Solanyk 9th grade
*The Strategy To Monopoly: A Computer Simulation Of The Probabilities Of Movement And The Economics*
Loveland PR Christian School
Loveland, CO

**Honorable Mention**
Lila Hickey 12th grade
*Ups & Downs: Simulated Elevator Control*
Brush High School
Hillrose, CO

**Honorable Mention**
Paul Scott 10th grade
*Knotty Knumbers: Calculating Alexander's Polynomial*
Woodlin High School
Akron, CO

## Junior Microbiology

**1st Place**
Kelly Valdes 8th grade
*Thieves Steal Bacteria*
St. Mary's School of Littleton
Littleton, CO

**2nd Place**
Michael Dango 7th grade
*The Effect Of Salinity On The Effectiveness Of Bioremediation On Oil Spills Utilizing Pseudomonas And Penicillin*
Challenger Middle School
Colorado Springs, CO

**3rd Place**
Jesse Sindler 7th grade
*Somewhere Over The Rainbow, Fungi Fly*
Canon City Middle School
Canon City, CO

**Honorable Mention**
Ashley Maddux 7th grade
*Glow In The Dark - Will Bacteria Accept A Gene From A Jellyfish?*
Pagosa Springs Junior High School
Pagosa Springs, CO

**Honorable Mention**
Alex Schnaderbeck 6th grade
*Density Of Bacteria On Public Surfaces*
Sargent Elementary School
Monte Vista, CO

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Senior Microbiology

**1st Place**
Josh Haimes 12th grade
*WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus*
Boulder High School
Boulder, CO

**2nd Place**
Sara McFarland 11th grade
*The Effect Of Triclosan On Antibiotic*
Hoehne High School
Trinidad, CO

**3rd Place**
Lauren Goulding 9th grade
*Chemical Memory: Can Physarum Polycephalum Reproduce A Pattern?*
Palmer High School
Colorado Springs, CO

**Honorable Mention**
Lauryn Etl 10th grade
*Antioxidants: Youth At Your Fingertips*
Fleming High School
Fleming, CO

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Junior Physical Sciences

**1st Place**
Meredith MacGregor 7th grade
*Avalanche! A Search For Self-Organized Criticality*
Burbank Middle School
Boulder, CO

**2nd Place**
Megan Emmons 7th grade
*Friction Over Tribology*
Del Norte Middle School
Alamosa, CO

**3rd Place**
John Wilkinson Jr. 8th grade
*Sailing With Wind Power!*
Mountain Ridge Middle School
Colorado Springs, CO

**Honorable Mention**
Adreanne Brungardt 7th grade
*Shake It Up: A Study On Size Separation*
Brush Middle School
Brush, CO

**Honorable Mention**
Tyler Hutchinson 6th grade
*Catalysts, The Chemical Matchmakers*
Holy Family Catholic School
Grand Junction, CO

**Honorable Mention**
Matt Zubiel 6th grade
*Predicting UHF Radio Range From Antenna Height*
Creekside Middle School
Monument, CO

**Honorable Mention**
Rebecca Richardson 7th grade
*Sodium Bicarbonate And pH: What Can It Lead To?*
Berry Creek Middle School
Avon, CO

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Senior Physical Sciences

**1st Place**
Amber Henry 10th grade
*An Algorithm Demonstrating Impact Splatter Pattern Due To Angle Of Incidence Using A Dichotomous Key*
Hi-Plains High School
Joes, CO

**2nd Place**
Adam Brungardt 11th grade
*Spinning Samaras: A Study Into Seed Distribution*
Brush High School
Brush, CO

**3rd Place**
Leota McDaniel 11th grade
*An Investigation Into The Weissenberg Phenomenon*
Brush High School
Brush, CO

**Honorable Mention**
Kyle Atwater 10th grade
*Trebuchet Ballistics*
Woodlin Undivided High School
Genoa, CO

**Honorable Mention**
William Eucker 10th grade
*Metallurgical Characteristics Of The Sacagawea Dollar*
George Washington High School
Denver, CO

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Junior Zoology

**1st Place**
Marty Sandberg 8th grade
*Rat Race*
St. Mary's School of Littleton
Littleton, CO

**2nd Place**
Lisa Harms 7th grade
*Got Silk?*
Haxtun Middle School
Haxtun, CO

**3rd Place**
Timothy Sauer 8th grade
*Oh, Rats!*
St. Mary's School of Littleton
Littleton, CO

**Honorable Mention**
Travis Justin Garoutte 6th grade
*Pupation Creation*
Centauri Middle School
Antonito, CO

## Senior Zoology

**1st Place**
Holly McGuire 11th grade
*Comparing Extracted And Amplified Mitochondrial DNA*
Woodlin Undivided High School
Lindon, CO

**2nd Place**
Robert Bernton 9th grade
*In Vivo PLA2 Inhibition*
Rocky Mountain Hebrew Academy
Littleton, CO

**3rd Place**
Kori Tagtmeyer 9th grade
*Determining Failure Of Passive Transfer In Neonatal Bovine Based On Immunoglobulin G Levels*
Hi-Plains High

**Honorable Mention**
Trixie Lee 12th grade
*The Squeeze Is On: Overcoming Overpopulation*
Fleming High School
Crook, CO

**Honorable Mention**
Matthew Simes 12th grade
*Relative Abundance Of Ponderosa Pine Bird Species Along An Elevational Gradient*
Centaurus High School
Lafayette, CO

## Junior Team Projects

**1st Place**
Alex West 8th grade
Andrew West 6th grade
*I'm Exhausted*
West Jefferson Middle School
Conifer, CO

**2nd Place**
Jessica Nygren 8th grade
Caresse Wagner 8th grade
*Spaced Out*
St. Mary's School of Littleton
Littleton, CO

**3rd Place**
Danika Friedley 7th grade
Whitney Howard 7th grade
*Erosion And The Formation Of Alluvial Fans*
Bayfield Middle School
Bayfield, CO

**Honorable Mention**
Noah Husek 8th grade
Jonathan Wolfe 8th grade
*Kids Don't Bounce*
Burbank Middle School
Boulder, CO

**Honorable Mention**
Hannah Schumacher 7th grade
Erin Luck 7th grade
*Burning Up*
Burbank Middle School
Boulder, CO

## Senior Team Projects

**1st Place**
Aaron Burgess 11th grade
Kristen Rasmussen 11th grade
*Aircraft Icing: Why Does It Happen?*
Fairview High School
Boulder, CO

**2nd Place**
Eric King 12th grade
David Van Wagener 12th grade
*Significant Factors That Affect Perception Of Location*
Cherry Creek High School
Englewood, CO

**3rd Place**
David Sanford 11th grade
Adam Ginsburg 11th grade
*Computer Simulation Of Stability Of The Orbits In A Multi-Planet System*
Cherry Creek High School
Englewood, CO

**Honorable Mention**
Brittani Cliff 10th grade
Breanna Anderson 10th grade
*Stress And Immunity: Qualification Of Immunoglobulin G And Leukocytes*
Akron High School
Akron, CO

**Honorable Mention**
David Wacker 10th grade
Curtis Larimer 10th grade
*The Collatz Code*
Palmer High School
Colorado Springs, CO

# 2002 Colorado Science and Engineering Fair
# Special Awards Press Release

## Military

**Sponsor:** United States Army
*United States Army Award*
certificate, $50 savings bond
Jaymee Jungie — 11th grade
Cherry Creek High School — Englewood, CO
*Manipulation Of The Kreb's Cycle*

**Sponsor:** United States Army
*United States Army Award*
certificate, $50 savings bond
Amber Henry — 10th grade
Hi-Plains High School — Joes, CO
*An Algorithm Demonstrating Impact Splatter Pattern Due To Angle Of Incidence Using A Dichotomous Key*

**Sponsor:** United States Army
*United States Army Award*
certificate, $50 savings bond
Michael Yurkoski — 11th grade
Broomfield High School — Broomfield, CO
*Rarr - An Alternative To Human Reconnaissance*

**Sponsor:** United States Army
*United States Army Award*
certificate, $50 savings bond
Katherine Hermann — 9th grade
Boulder High School — Louisville, CO
*Predicting Water Quality With Landscape Metrics*

**Sponsor:** United States Army
*United States Army Award* — 1st Place
certificate, silver medallion, $100 savings bond
Amanda Parker — 9th grade
Cherry Creek High School — Centennial, CO
*Not So Perfect Sine Waves: A Fourier Analysis Of An Audio Oscillator*

**Sponsor:** United States Navy and United States Marine Corps
*United States Navy and United States Marine Corps Award*
certificate, graphing calculator, invitation to the Junior Science and Humanities Symposium
Kinsey Freeman — 9th grade
Palmer High School — Colorado Springs, CO
*Factors Affecting Life Span*

**Sponsor:** United States Navy and United States Marine Corps
*United States Navy and United States Marine Corps Award*
certificate, graphing calculator, invitation to the Junior Science and Humanities Symposium
Jaymee Jungie — 11th grade
Cherry Creek High School — Englewood, CO
*Manipulation Of The Kreb's Cycle*

**Sponsor:** United States Navy and United States Marine Corps
*United States Navy and United States Marine Corps Award*
certificate, graphing calculator, invitation to the Junior Science and Humanities Symposium
Craig Wright — 10th grade
Woodlin Undivided High School — Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** United States Navy and United States Marine Corps
*United States Navy and United States Marine Corps Award*
certificate, graphing calculator, invitation to the Junior Science and Humanities Symposium
Adam Curry — 12th grade
Palisade High School — Palisade, CO
*The Cosmic Early Warning*

## Organizational

**Sponsor:** Air and Waste Management Association, Rocky Mountain States Section
*Air and Waste Management Association Award* — 2nd Place
certificate, $50
Lyle Hoffschneider — 7th grade
Pagosa Springs Junior High School — Pagosa Springs, CO
*"Black Gold" Particles: Comparing Particles Of Fuel Sources*

**Sponsor:** Air and Waste Management Association, Rocky Mountain States Section
*Air and Waste Management Association Award* — 1st Place
certificate, $100
Michael Dango — 7th grade
Challenger Middle School — Colorado Springs, CO
*The Effect Of Salinity On The Effectiveness Of Bioremediation On Oil Spills Utilizing Pseudomonas And Penicillin*

**Sponsor:** Air and Waste Management Association, Rocky Mountain States Section
*Air and Waste Management Association Award* — 2nd Place
certificate, $50
Benjamin Howard — 12th grade
Fairview High School — Boulder, CO
*An Evaluation Of The Effectiveness Of Reformulated Gasoline In Reducing Urban Benzene Concentrations*

**Sponsor:** Air and Waste Management Association, Rocky Mountain States Section
*Air and Waste Management Association Award* — 1st Place
certificate, $100
Jessica Caver — 11th grade
Woodlin Undivided High School — Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** American Association of University Women
*Association of University Women Award*
$100
Meredith MacGregor — 7th grade
Burbank Middle School — Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** American Institute of Chemical Engineers, Rocky Mountain Section
*American Institute of Chemical Engineers Award* — 2nd Place
$75
Michael Dango — 7th grade
Challenger Middle School — Colorado Springs, CO
*The Effect Of Salinity On The Effectiveness Of Bioremediation On Oil Spills Utilizing Pseudomonas And Penicillin*

**Sponsor:** American Institute of Chemical Engineers, Rocky Mountain Section
*American Institute of Chemical Engineers Award* 1st Place
$100
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** American Meteorological Society, Denver/Boulder Chapter
*American Meteorlogical Society Award*
certificate, $50 gift certificate to Barnes and Nobel
Melissa Kanack 7th grade
St. John the Evangelist School Loveland, CO
*Snow 'n' Ice 'n' Everything Not So Nice*

**Sponsor:** American Meteorological Society, Denver/Boulder Chapter
*American Meteorlogical Society Award*
certificate, $50 gift certificate to Barnes and Nobel
Benjamin Howard 12th grade
Fairview High School Boulder, CO
*An Evaluation Of The Effectiveness Of Reformulated Gasoline In Reducing Urban Benzene Concentrations*

**Sponsor:** American Vacuum Society, Rocky Mountain Chapter
*American Vacuum Society Award* 2nd Place
$50, $50 for winner's school
Adam Sidman 8th grade
North Middle School Colorado Springs, CO
*Wind Turbine Design*

**Sponsor:** American Vacuum Society, Rocky Mountain Chapter
*American Vacuum Society Award* 1st Place
$100, $100 for winner's school
Daniel Weidlein 6th grade
Summit Middle School Boulder, CO
*Into The Wind: Wind Powered Cars*

**Sponsor:** American Vacuum Society, Rocky Mountain Chapter
*American Vacuum Society Award* 1st Place
$100, $100 for winner's school
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** American Vacuum Society, Rocky Mountain Chapter
*American Vacuum Society Award* 1st Place
$100, $100 for winner's school
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** American Welding Society, Colorado Section
*American Welding Society Award*
$25, trophy
Matthew Rotbart 8th grade
Rocky Mountain Hebrew Academy Denver, CO
*Modeling The Collapse Of The World Trade Center: The Effect Of Heat On The Tensile Strength Of Steel*

**Sponsor:** American Welding Society, Colorado Section
*American Welding Society Award*
$25, trophy
Dak Steiert 11th grade
Battle Mountain High School Edwards, CO
*Ramjet Propulsion For High Altitude Launch And Research*

**Sponsor:** Analex Corporation
*Analex Corporation Award*
certificate, $100
Lila Hickey 12th grade
Brush High School Hillrose, CO
*Ups & Downs: Simulated Elevator Control*

**Sponsor:** ASM International, Rocky Mountain Chapter
*ASM International Award* 2nd Place
$50
Matthew Rotbart 8th grade
Rocky Mountain Hebrew Academy Denver, CO
*Modeling The Collapse Of The World Trade Center: The Effect Of Heat On The Tensile Strength Of Steel*

**Sponsor:** ASM International, Rocky Mountain Chapter
*ASM International Award* 1st Place
$75
William Eucker 10th grade
George Washington High School Denver, CO
*Metallurgical Characteristics Of The Sacagawea Dollar*

**Sponsor:** Association for Women Geoscientists, Denver Chapter
*Association for Women Geoscientists Award*
$50, rock sample
Audrey Keenan 6th grade
Holy Family Catholic School Grand Junction, CO
*Go With The Flow - A Study Of Water Quality In The Upper Colorado River Basin*

**Sponsor:** Association for Women Geoscientists, Denver Chapter
*Association for Women Geoscientists Award*
$50, rock sample
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** Colorado Association of Science Teachers
*Colorado Association of Science Teachers Award*
$50, certificate
Maxwell Van Pelt 7th grade
Rocky Mountain School Boulder, CO
*An Investigation Of Automated Highways*

**Sponsor:** Colorado Association of Science Teachers
*Colorado Association of Science Teachers Award*
$50, certificate
Devin Adam 8th grade
Crawford Elementary School Crawford, CO
*A Hot Idea For A Cool Computer*

**Sponsor:** Colorado Association of Science Teachers
*Colorado Association of Science Teachers Award*
$50, certificate
Julie Ann Chelewski 9th grade
Rifle High School Silt, CO
*Turning The Red Planet Green*

**Sponsor:** Colorado Association of Science Teachers
*Colorado Association of Science Teachers Award*
$50, certificate
Robert Ussery 10th grade
Ussery Home School Fort Collins, CO
*Autonomous UAV Design*

**Sponsor:** Colorado Dental Association & Arkansas Valley Dental Society
*Colorado Dental Association Award*
$25, plaque, Wal-Mart gift card
Andrea Buxton — 8th grade
Eads Junior High School — Lamar, CO
*Fluoride: When Is Enough*

**Sponsor:** Colorado Dental Association & Arkansas Valley Dental Society
*Colorado Dental Association Award*
$50 plaque, Wal-Mart gift card
Sara McFarland — 11th grade
Hoehne High School — Trinidad, CO
*The Effect Of Triclosan On Antibiotic Resistance*

**Sponsor:** Arkansas Valley Dental Society
*Arkansas Valley Dental Association Award*
watch, Wal-Mart gift card
Kayla Kinch — 6th grade
Britney Bunker — 6th grade
Ellicott Middle School — Calhan, CO
*Smile*

**Sponsor:** Arkansas Valley Dental Society
*Arkansas Valley Dental Association Award*
watch, Wal-Mart gift card
Brittani Cliff — 10th grade
Breanna Anderson — 10th grade
Akron High School — Akron, CO
*Stress And Immunity: Qualification Of Immunoglobulin G And Leukocytes*

**Sponsor:** Colorado Division of Wildlife
*Colorado Division of Wildlife Award*
packet of Colorado Wildlife products, free admission to a Wildlife Watch Workshop
Trixie Lee — 12th grade
Fleming High School — Crook, CO
*The Squeeze Is On: Overcoming Overpopulation*

**Sponsor:** Colorado Foundation for Agriculture
*Agriculture in the Classroom Award* — 2nd Place
certificate, $50
Kelly Valdes — 8th grade
St. Mary's School of Littleton — Littleton, CO
*Thieves Steal Bacteria*

**Sponsor:** Colorado Foundation for Agriculture
*Agriculture in the Classroom Award* — 1st Place
certificate, $50
Travis Justin Garoutte — 6th grade
Centauri Middle School — Antonito, CO
*Pupation Creation*

**Sponsor:** Colorado Foundation for Agriculture
*Agriculture in the Classroom Award* — 2nd Place
certificate, $50
Jacqueline Consaul — 11th grade
Del Norte High School — Center, CO
*A Study On The Interaction Between Blackleg And PVY On Potatoes*

**Sponsor:** Colorado Foundation for Agriculture
*Agriculture in the Classroom Award* — 1st Place
certificate, $50
Stephen Canham — 12th grade
Cherry Creek High School — Greenwood Village, CO
*Prevention Of Soil Salinization From A Rising Water Table*

**Sponsor:** Colorado Geological Survey
*The Best Junior Earth Science Award*
$75
Lena Martin — 7th grade
Genoa-Hugo Middle School — Genoa, CO
*Time: Sun vs. Clock*

**Sponsor:** Colorado Geological Survey
*The Best Senior Earth Science Award*
$75
Adam Curry — 12th grade
Palisade High School — Palisade, CO
*The Cosmic Early Warning*

**Sponsor:** Colorado Medical Society Education Foundation
*Colorado Medical Society Award*
$100, invitation to exhibit at the Annual meeting and attendance at Presidential Inaugural Dinner
Kelly Dimmen — 6th grade
Sabin Middle School — Colorado Springs, CO
*Stop In The Name Of The Law*

**Sponsor:** Colorado Medical Society Education Foundation
*Colorado Medical Society Award*
$100, invitation to exhibit at the Annual meeting and attendance at Presidential Inaugural Dinner
Krista Schroeder — 9th grade
Palmer High School — Colorado Springs, CO
*Feeling Smart*

**Sponsor:** Colorado Mineral Society
*Colorado Mineral Society Award* — 2nd Place
$25, 2 mineral specimens, certificate, book
Audrey Keenan — 6th grade
Holy Family Catholic School — Grand Junction, CO
*Go With The Flow - A Study Of Water Quality In The Upper Colorado River Basin*

**Sponsor:** Colorado Mineral Society
*Colorado Mineral Society Award* — 1st Place
$25, 2 mineral specimens, certificate, book
Jeffrey Hrncir — 7th grade
East Middle School — Grand Junction, CO
*Dinosaur Tracks*

**Sponsor:** Colorado Mineral Society
*Colorado Mineral Society Award* — 2nd Place
$25, 2 mineral specimens, certificate, book
Brandon Rosgen — 11th grade
Pagosa Springs High School — Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Colorado Mineral Society
*Colorado Mineral Society Award* — 1st Place
$25, 2 mineral specimens, certificate, book
Adam Curry — 12th grade
Palisade High School — Palisade, CO
*The Cosmic Early Warning*

**Sponsor:** Colorado Mycological Society
*Colorado Mycological Society Award*
$25, book on fungi, certificate
Lauryn Etl — 10th grade
Fleming High School — Fleming, CO
*Antioxidants: Youth At Your Fingertips*

**Sponsor:** Colorado Science and Engineering Fair
*Ralph Desch Memorial Technical Writing Award*
$100, certificate
Adam Curry 12th grade
Palisade High School Palisade, CO
*The Cosmic Early Warning*

**Sponsor:** Colorado Science and Engineering Fair
*Student Choice Award*
$25, trophy
Meredith MacGregor 7th grade
Burbank Middle School Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** Colorado Science and Engineering Fair
*Student Choice Award*
$25, trophy
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Colorado Scientific Society
*Colorado Scientific Society Award* 2nd Place
$50
Adreanne Brungardt 7th grade
Brush Middle School Brush, CO
*Shake It Up: A Study On Size Separation*

**Sponsor:** Colorado Scientific Society
*Colorado Scientific Society Award* 1st Place
$75
Meredith MacGregor 7th grade
Burbank Middle School Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** Colorado Scientific Society
*Colorado Scientific Society Award* 2nd Place
$75
Christine Knoblauch 12th grade
Monte Vista High School Del Norte, CO
*Where's It Coming From?*

**Sponsor:** Colorado Scientific Society
*Colorado Scientific Society Award* 1st Place
$100
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Colorado Section of the American Chem ical Society
*American Chemical Society Award*
certificate, cash award
Rosie Li 7th grade
North Middle School Colorado Springs, CO
*Salt Water Conductivity*

**Sponsor:** Colorado Section of the American Chemical Society
*American Chemical Society Award*
certificate, cash award
William Eucker 10th grade
George Washington High School Denver, CO
*Metallurgical Characteristics Of The Sacagawea Dollar*

**Sponsor:** Colorado Sustainability Project
*Colorado Sustainability Project Award* 2nd Place
$50, certificate, information on s ustainability
Melissa Kanack 7th grade
St. John the Evangelist School Loveland, CO
*Snow 'n' Ice 'n' Everything Not So Nice*

**Sponsor:** Colorado Sustainability Project
*Colorado Sustainability Project Award* 1st Place
$100, certificate, information on sustainab ility
Adam Sidman 8th grade
North Middle School Colorado Springs, CO
*Wind Turbine Design*

**Sponsor:** Colorado Sustainability Project
*Colorado Sustainability Project Award* 2nd Place
$50, certificate, information on sustainability
Craig Bryan 11th grade
Sargent High School Monte Vista, CO
*Vulcan Block II*

**Sponsor:** Colorado Sustainability Project
*Colorado Sustainability Project Award* 1st Place
$100, certificate, information on sustainability
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Colorado Veterinary Medical Association
*Colorado Veterinary Medical Association Award*
certificate, gold medallion, $50
Nicholas Edwards 7th grade
Juniper Drive Middle School Colorado Springs, CO
*The Five Senses Of Training A Dog*

**Sponsor:** Colorado Veterinary Medical Association
*Colorado Veterinary Medical Association Award*
certificate, gold medallion, $50
Kori Tagtmeyer 9th grade
Hi-Plains High School Seibert, CO
*Determining Failure Of Passive Transfer In Ne onatal Bovine Based On Immunoglobulin G Levels*

**Sponsor:** CSU, Department of Biochemistry and Molecular Biology
*CSU Department of Biochemistry and Molecular Biology Award*
certificate, $100
Jeff Marlow 11th grade
Cherry Creek High School Englewood, CO
*Hydroxyl Radical Neutralization By Non-Steroid Anti-Inflammatory Drugs Related To Alzheimer's Prevention*

**Sponsor:** CSU, Department of Chemistry
*CSU Department of Chemistry Award*
certificate, cash award
Tyler Hutchinson 6th grade
Holy Family Catholic School Grand Junction, CO
*Catalysts, The Chemical Matchmakers*

**Sponsor:** CSU, Department of Chemistry
*CSU Department of Chemistry Award*
certificate, cash award
Benjamin Howard 12th grade
Fairview High School Boulder, CO
*An Evaluation Of The Effectiveness Of Reformulated Gasoline In Reducing Urban Benzene Concentrations*

**Sponsor:** CSU, Dept of Horticulture & Landscape Architecture
*CSU Dept. of Horticulture & Landscape Architecture Award*
$100
Emily Woods 6th grade
Summit Middle School Boulder, CO
*Secret Weapons: Allelochemicals In Plants*

**Sponsor:** CSU, Dept. of Horticulture & Landscape Architecture
*CSU Dept. of Horticulture & Landscape Architecture Award*
$100
Tyler Benton 9th grade
Stratton High School Vona, CO
*An Ecological Study Of The Efficacy Of The Conservation Reserve Program*

**Sponsor:** Fort Collins Soil Conservation District
*Fort Collins Soil Conservation District Award*
$50, plaque
Jeffrey West 7th grade
Lamar Middle School Lamar, CO
*Will Size Affect The Amount Of Soil Blown Away?*

**Sponsor:** Fort Collins Soil Conservation District
*Fort Collins Soil Conservation District Award*
$50, plaque
Tyler Stuart 9th grade
Palmer High School Manitou Springs, CO
*H2uh-O*

**Sponsor:** Intel Corporation
*Intel Corporation Award*
laptop computer
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** Intel Corporation
*Intel Corporation Award*
laptop computer
Meredith MacGregor 7th grade
Burbank Middle School Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** Kodak Colorado Division
*Kodak Colorado Division Award*
APS camera
Tyler Keck 8th grade
Monte Vista Middle School Monte Vista, CO
*To Corrode Or Not To Corrode: Preventing Microbiologically Influenced Corrosion (MIC) On Steel Using A Polyurethane Coating*

**Sponsor:** Kodak Colorado Division
*Kodak Colorado Division Award*
APS camera
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Lockheed Martin Astronautics
*Lockheed Martin Astronautics Award*
Atlas II AS Rocket model
Dak Steiert 11th grade
Battle Mountain High School Edwards, CO
*Ramjet Propulsion For High Altitude Launch And Research*

**Sponsor:** National Geophysical Data Center
*National Geophysical Data Center Award*
certificate, plaque, $100 savings bond
Lyle Hoffschneider 7th grade
Pagosa Springs Junior High School Pagosa Springs, CO
*"Black Gold" Particles: Comparing Particles Of Fuel Sources*

**Sponsor:** National Renewable Energy Laboratory
*National Renewable Energy Laboratory Award*
$100
Adam Sidman 8th grade
North Middle School Colorado Springs, CO
*Wind Turbine Design*

**Sponsor:** Rocky Mountain Association of Geologists
*Rocky Mountain Association of Geologists Award*
certificate, cash award (to be mailed to the winners)
Danika Friedley 7th grade
Whitney Howard 7th grade
Bayfield Middle School Bayfield, CO
*Erosion And The Formation Of Alluvial Fans*

**Sponsor:** Rocky Mountain Association of Geologists
*Rocky Mountain Association of Geologists Award*
certificate, cash award (to be mailed to the winners)
Katherine Hermann 9th grade
Boulder High School Louisville, CO
*Predicting Water Quality With Landscape Metrics*

**Sponsor:** Rocky Mountain Association of Geologists
*Rocky Mountain Association of Geologists Award*
certificate, cash award (to be mailed to the winners)
Stephen Canham 12th grade
Cherry Creek High School Greenwood Village, CO
*Prevention Of Soil Salinization From A Rising Water Table*

**Sponsor:** Rocky Mountain Goats Foundation
*Rocky Mountain Goats Foundation Award*
$100
Stacy Dominguez 6th grade
Pagosa Springs Intermediate School Pagosa Springs, CO
*Local Lake Quality = Happy pHish*

**Sponsor:** Rocky Mountain Goats Foundation
*Rocky Mountain Goats Foundation Award*
$100
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Rocky Mountain Inventors and Entrepreneurs Congress
*Best Junior Exhibit Award*
$50
Ross Brunkhardt 7th grade
Merino Jr/Sr High School Sterling, CO
*Take On A Shake - The Use Of Base Isolators To Prevent Earthquake Damage*

**Sponsor:** Rocky Mountain Inventors and Entrepreneurs Congress
*Best Classroom Presentation Potential*
$50
Meredith MacGregor 7th grade
Burbank Middle School Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** Rocky Mountain Inventors and Entrepreneurs Congress
*Excellent Senior Exhibit Award*
$50
Adam Curry 12th grade
Palisade High School Palisade, CO
*The Cosmic Early Warning*

**Sponsor:** Rocky Mountain Inventors and Entrepreneurs Congress
*Excellent Senior Exhibit Award*
$50
April Mertens 12th grade
Merino Jr/Sr High School Merino, CO
*A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe*

**Sponsor:** Rocky Mountain Inventors and Entrepreneurs Congress
*Outstanding Exhibit: Near-term Potential for Implementation*
$50
Robert Glissmann — 8th grade
Summit Middle School — Boulder, CO
*Never Blinking, Never Sleeping: Image Preparation Improves Machine Vision*

**Sponsor:** Rocky Mountain Section of the American Water Works Association
*American Water Works Association Award* — 3rd Place
plaque, $50
Christine Knoblauch — 12th grade
Monte Vista High School — Del Norte, CO
*Where's It Coming From?*

**Sponsor:** Rocky Mountain Section of the American Water Works Association
*American Water Works Association Award* — 2nd Place
plaque, $75
Jessica Caver — 11th grade
Woodlin Undivided High School — Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** Rocky Mountain Section of the American Water Works Association
*American Water Works Association Award* — 1st Place
plaque, $100
Chris Anderson — 12th grade
Merino Jr/Sr High School — Merino, CO
*Renewable Protection: The Solar And Hydrogen Approach To Pipeline Cathodics*

**Sponsor:** Rocky Mountain Section of the Optical Society of America
*Rocky Mountain Optical Society Award*
subscription to Discover magazine, certificate
Kelly Cook — 8th grade
Boltz Junior High School — Fort Collins, CO
*Is What You See What You Get?*

**Sponsor:** Rocky Mountain Section of the Optical Society of America
*Rocky Mountain Optical Society Award*
subscription to Discover magazine, certificate
Robert Glissmann — 8th grade
Summit Middle School — Boulder, CO
*Never Blinking, Never Sleeping: Image Preparation Improves Machine Vision*

**Sponsor:** Rocky Mountain Water Environment Association
*Rocky Mountain Water Environment Association Award*
savings bond (to be mailed to the winners)
Anna Hermann — 6th grade
Summit Middle School — Louisville, CO
*Under The Stream: Using Aquatic Insects To Determine Water Quality*

**Sponsor:** Rocky Mountain Water Environment Association
*Rocky Mountain Water Environment Association Award*
savings bond (to be mailed to the winners)
Jacquie Beckvermit — 8th grade
Turner Middle School — Berthoud, CO
*Do You Drink Undrinkable Water?*

**Sponsor:** Rocky Mountain Water Environment Association
*Rocky Mountain Water Environment Association Award*
savings bond (to be mailed to the winners)
Katherine Hermann — 9th grade
Boulder High School — Louisville, CO
*Predicting Water Quality With Landscape Metrics*

**Sponsor:** Rocky Mountain Water Environment Association
*Rocky Mountain Water Environment Association Award*
savings bond (to be mailed to the winners)
Christine Knoblauch — 12th grade
Monte Vista High School — Del Norte, CO
*Where's It Coming From?*

**Sponsor:** Society of Manufacturing Engineers, Chapter 354, Electro-Mechanical
*Society of Manufacturing Engineers Award*
certificate, $200 savings bond
Eddie Kreimier — 9th grade
Rifle High School — Rifle, CO
*If I Only Had A Heart (Valve)*

**Sponsor:** Society of Women Engineers, Rocky Mountain Section
*Society of Women Engineers Award* — 2nd Place
certificate, $50
April Brooks — 8th grade
O'Connell Middle School — Lakewood, CO
*The Fastest Power*

**Sponsor:** Society of Women Engineers, Rocky Mountain Section
*Society of Women Engineers Award* — 1st Place
certificate, $75
Molly May — 6th grade
St. Columba School — Durango, CO
*A Comparison Of Tensile Strength Of Various Materials*

**Sponsor:** Society of Women Engineers, Rocky Mountain Section
*Society of Women Engineers Award* — 2nd Place
certificate, $50
Amanda Parker — 9th grade
Cherry Creek High School — Centennial, CO
*Not So Perfect Sine Waves: A Fourier Analysis Of An Audio Oscillator*

**Sponsor:** Society of Women Engineers, Rocky Mountain Section
*Society of Women Engineers Award* — 1st Place
certificate, $75
Lindy Doddridge — 12th grade
Liberty High School — Kirk, CO
*From Prickly To Paper Part II*

**Sponsor:** Soil and Water Conservation Society, Colorado Chapter
*Soil and Water Conservation Society Award* — 2nd Place
$25, certificate, ribbon
Caitlin Hladky — 6th grade
Fort Lupton Middle School — Fort Lupton, CO
*Does pH Affect Seed Germination And Growth Rate?*

**Sponsor:** Soil and Water Conservation Society, Colorado Chapter
*Soil and Water Conservation Society Award* — 1st Place
$50, certificate, ribbon
Anna Hermann — 6th grade
Summit Middle School — Louisville, CO
*Under The Stream: Using Aquatic Insects To Determine Water Quality*

**Sponsor:** Soil and Water Conservation Society, Colorado Chapter
*Soil and Water Conservation Society Award* — 2nd Place
$25, certificate, ribbon
Katherine Hermann — 9th grade
Boulder High School — Louisville, CO
*Predicting Water Quality With Landscape Metrics*

**Sponsor:** Soil and Water Conservation Society, Colorado Chapter
*Soil and Water Conservation Society Award* — 1st Place
$50, certificate, ribbon
Brandon Rosgen — 11th grade
Pagosa Springs High School — Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Tracy Teyler Memorial
*Poster Art Contest*
$100, certificate
Lauren Goulding 9th grade
Palmer High School Colorado Springs, CO
*Chemical Memory: Can Physarum Polycephalum Reproduce A Pattern?*

**Sponsor:** UC, Health Sciences Center Medical Scientist Training Program
*UC Health and Sciences Center Award*
$100
Jaymee Jungie 11th grade
Cherry Creek High School Englewood, CO
*Manipulation Of The Kreb's Cycle*

**Sponsor:** United States Department of Commerce
*United States Department of Commerce Award*
opportunity for summer employment
Eric Doner 12th grade
Walsh High School Walsh, CO
*Operation: Voice Control*

**Sponsor:** United States Department of Commerce
*United States Department of Commerce Award*
alternate
Chris Anderson 12th grade
Merino Jr/Sr High School Merino, CO
*Renewable Protection: The Solar And Hydrogen Approach To Pipeline Cathodics*

**Sponsor:** United States Geological Survey
*United States Geological Survey Award*
Jeffrey Hrncir 7th grade
East Middle School Grand Junction, CO
*Dinosaur Tracks*

**Sponsor:** United States Geological Survey
*United States Geological Survey Award*
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Zonta Club of Boulder County
*Amelia Earhart Award*
$100
Annie Sandner 8th grade
St. Columba School Durango, CO
*Aerodynamics Of Modern Rocketry*

**Scholarships**

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Jacqueline Consaul 11th grade
Del Norte High School Center, CO
*A Study On The Interaction Between Blackleg And PVY On Potatoes*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Leyton Laybourn 10th grade
Arickaree Undivided High School Cope, CO
*The Best Superinsulator*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Christine Knoblauch 12th grade
Monte Vista High School Del Norte, CO
*Where's It Coming From?*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
April Mertens 12th grade
Merino Jr/Sr High School Merino, CO
*A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Colin Oldberg 9th grade
Coronado High School Colorado Springs, CO
*Light-Operated Logic*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Sara McFarland 11th grade
Hoehne High School Trinidad, CO
*The Effect Of Triclosan On Antibiotic Resistance*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Megan Quick 12th grade
Palmer High School Colorado Springs, CO
*A Comparison Of The Efficiencies Of Tracking Photovoltaic Cells vs. Mounted Photovoltaic Cells*

**Sponsor:** Adams State College Foundation
*Adams State College Scholarship*
one year full resident tuition & fees scholarship
Matthew Simes 12th grade
Centaurus High School Lafayette, CO
*Relative Abundance Of Ponderosa Pine Bird Species Along An Elevational Gradient*

**Sponsor:** Colorado School of Mines
*Colorado School of Mines Scholarship*
four-year full resident tuition
Adam Curry 12th grade
Palisade High School Palisade, CO
*The Cosmic Early Warning*

**Sponsor:** Colorado School of Mines
*Colorado School of Mines Scholarship*
four-year full resident tuition
Chris Anderson 12th grade
Merino Jr/Sr High School Merino, CO
*Renewable Protection: The Solar And Hydrogen Approach To Pipeline Cathodics*

**Sponsor:** Colorado School of Mines
*Colorado School of Mines Scholarship*
four-year full resident tuition
Lila Hickey 12th grade
Brush High School Hillrose, CO
*Ups & Downs: Simulated Elevator Control*

**Sponsor:** Colorado School of Mines
*Colorado School of Mines Scholarship*
four-year full resident tuition
Benjamin Howard 12th grade
Fairview High School Boulder, CO
*An Evaluation Of The Effectiveness Of Reformulated Gasoline In Reducing Urban Benzene Concentrations*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Nicole Thomas 10th grade
Sierra Grande High School Blanca, CO
*WNC 230-14RU Resistant Or Immune To Potato Leaf Roll Virus*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
April Mertens 12th grade
Merino Jr/Sr High School Merino, CO
*A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Colin Oldberg 9th grade
Coronado High School Colorado Springs, CO
*Light-Operated Logic*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Josh Haimes 12th grade
Boulder High School Boulder, CO
*WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Amber Henry 10th grade
Hi-Plains High School Joes, CO
*An Algorithm Demonstrating Impact Splatter Pattern Due To Angle Of Incidence Using A Dichotomous Key*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Holly McGuire 11th grade
Woodlin Undivided High School Lindon, CO
*Comparing Extracted And Amplified Mitochondrial DNA*

**Sponsor:** Colorado State University
*Colorado State University Scholarship*
non-renewable $1,000 scholarship
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** Colorado State University
*Colorado State University All Fair Scholarship*
non-renewable $1,000 scholarship
Josh Haimes 12th grade
Boulder High School Boulder, CO
*WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus*

**Sponsor:** Colorado State University
*Colorado State University All Fair Scholarship*
non-renewable $1,000 scholarship
Aaron Burgess 11th grade
Kristen Rasmussen 11th grade
Fairview High School Boulder, CO
*Aircraft Icing: Why Does It Happen?*

**Sponsor:** Intel Corporation
*Ryan Patterson Scholarship*
$2,000 scholarship to the college of choice
Lila Hickey 12th grade
Brush High School Hillrose, CO
*Ups & Downs: Simulated Elevator Control*

**Science Service**

**Sponsor:** Conservation International
*Award in Biodiversity Conservation Science 2002*
certificate, Biodiversity Hotspots map (mailed later)
Matthew Simes 12th grade
Centaurus High School Lafayette, CO
*Relative Abundance Of Ponderosa Pine Bird Species Along An Elevational Gradient*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Harold Klausner 8th grade
Woodlin High School Woodrow, CO
*Available Nitrogen vs. Legume Nodulation*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Annie Sandner 8th grade
St. Columba School Durango, CO
*Aerodynamics Of Modern Rocketry*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Adam Sidman 8th grade
North Middle School Colorado Springs, CO
*Wind Turbine Design*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Meaghan Kormondy 8th grade
St. Mary's School of Littleton Highlands Ranch, CO
*Paper Or Plastic?*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Jeff Loewe 8th grade
Evangelical Christian Academy Colorado Springs, CO
*Pick Up The Beat*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Nathan McNew 8th grade
Jefferson Academy Junior High School Arvada, CO
*Investigation Of Prime Numbers*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Meredith MacGregor 7th grade
Burbank Middle School Boulder, CO
*Avalanche! A Search For Self-Organized Criticality*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Marty Sandberg 8th grade
St. Mary's School of Littleton Littleton, CO
*Rat Race*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Alex West 8th grade
Andrew West 6th grade
West Jefferson Middle School Conifer, CO
*I'm Exhausted*

**Sponsor:** Discovery Communications, Inc.
*Discovery Young Scientist Challenge*
certificate, DYSC nomination, t-shirt will be provided to those submitting their projects for competition
Kelly Valdes 8th grade
St. Mary's School of Littleton Littleton, CO
*Thieves Steal Bacteria*

**Sponsor:** Eastman Kodak Company
*Eastman Kodak Company Award*
certificate, Kodak camera and film (mailed later)
Jacqueline Consaul 11th grade
Del Norte High School
*A Study On The Interaction Between Blackleg And PVY On Potatoes*

**Sponsor:** Herbert Hoover Presidential Library Association
*The Herbert Hoover Young Engineer Award*
medallion, certificate
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** Intel Corporation
*Intel Excellence in Computer Science Award*
certificate, $200 (mailed later)
Colin Oldberg 9th grade
Coronado High School Colorado Springs, CO
*Light-Operated Logic*

**Sponsor:** Intel Corporation
*Intel Excellence in Environmental Health and Safety Award*
certificate, $200 (mailed later)
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** NACE International
*NACE International Award*
certificate
Tyler Keck 8th grade
Monte Vista Middle School Monte Vista, CO
*To Corrode Or Not To Corrode: Preventing Microbiologically Influenced Corrosion (MIC) On Steel Using A Polyurethane Coating*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Nicole Thomas 10th grade
Sierra Grande High School Blanca, CO
*WNC 230-14RU Resistant Or Immune To Potato Leaf Roll Virus*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Brandon Rosgen 11th grade
Pagosa Springs High School Pagosa Springs, CO
*River Banks - Nature's Erodible Boundaries*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Craig Wright 10th grade
Woodlin Undivided High School Akron, CO
*Designing A Linear Peristaltic Pump Using Ferrofluids*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Jessica Caver 11th grade
Woodlin Undivided High School Deer Trail, CO
*Evaluating Designer Solids For Remediation Of Heavy Elements In Aqueous Waste Streams*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
April Mertens 12th grade
Merino Jr/Sr High School Merino, CO
*A Promising Cancer Treatment: Tumor Suppression Using The Synergism Of NSAID And Aloe*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Colin Oldberg 9th grade
Coronado High School Colorado Springs, CO
*Light-Operated Logic*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Amber Henry 10th grade
Hi-Plains High School Joes, CO
*An Algorithm Demonstrating Impact Splatter Pattern Due To Angle Of Incidence Using A Dichotomous Key*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Holly McGuire 11th grade
Woodlin Undivided High School Lindon, CO
*Comparing Extracted And Amplified Mitochondrial DNA*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Aaron Burgess 11th grade
Kristen Rasmussen 11th grade
Fairview High School Boulder, CO
*Aircraft Icing: Why Does It Happen?*

**Sponsor:** Scientific American
*Scientific American Award* 1st Place
certificate, subscription to Scientific American
Josh Haimes 12th grade
Boulder High School Boulder, CO
*WGA Amplification And Thin Film Detection Of Methicillin Resistant/Sensitive Staphylococcus aureus*

**Sponsor:** Society for In Vitro Biology
*Society for In Vitro Biology Award*
certificate
Levi Klausner 11th grade
Woodlin High School Woodrow, CO
*Selecting For Salt Tolerance In 5 Varieties Of Wheat*

**Sponsor:** United States Metric Association
*United States Metric Association Award*
certificate
Alex Lande 7th grade
Ignacio Junior High School Ignacio, CO
*The Truth Behind Jurassic Park*

**Sponsor:** United States Metric Association
*United States Metric Association Award*
certificate
Adam Brungardt 11th grade
Brush High School Brush, CO
*Spinning Samaras: A Study Into Seed Distribution*

**Sponsor:** United States Public Health Service
*US Department of Health and Human Services/US Public Health Service Award*
certificate
T. J. Van Bibber 7th grade
Sargent Junior High School Monte Vista, CO
*You Are What You Eat*

**Sponsor:** Water Environment Federation
*Stockholm Junior Water Prize*
certificate
Katherine Hermann 9th grade
Boulder High School Louisville, CO
*Predicting Water Quality With Landscape Metrics*

**Sponsor:** Yale University Science and Engineering Association
*Yale University Science and Engineering Association Award*
certificate, pewter medallion (mailed to the winner)
Leota McDaniel 11th grade
Brush High School Brush, CO
*An Investigation Into The Weissenberg Phenomenon*