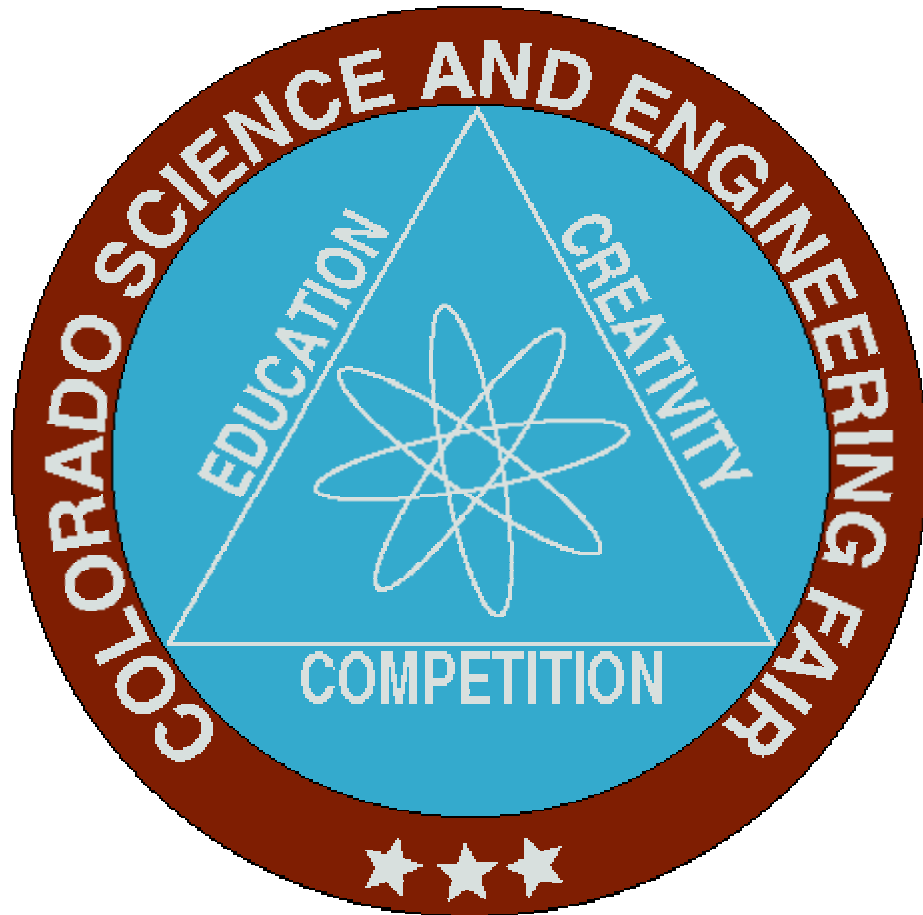


# 1997 Annual Report



September 19, 1997

## 1997 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, which holds a statewide competition each year. This competition, known as the Colorado Science and Engineering Fair (formerly Colorado State Science Fair), 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 participated in the statewide science fair program. The purpose of the CSEF is to stimulate student interest and encourage them in science and engineering by recognition of their ability and achievement.

This year, state winners were chosen from among 236 exhibits presented by 255 finalists from 13 regions within the state. More than 120 professional scientists, engineers and mathematicians interviewed the students and evaluated their projects before selecting the Grand Awards winners. In addition, there are currently over 48 business, professional societies, and government agencies that provide over 110 of their own representatives to judge exhibits based on their own criteria. They judge 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 700 people attended the Awards Ceremony this year.

In addition to getting the rare opportunity to speak with working scientists, Colorado Science and Engineering Fair student participants compete for awards in a number of categories: Botany, Earth & Environmental Sciences, Engineering, Health & Behavioral Sciences, Mathematics & Computer Sciences, Physical Sciences, and Zoology. Recognition for outstanding exhibits in each of these categories as well as an award for technical writing are given to students at the Colorado Science and Engineering Fair Awards Ceremony. The top two Senior Division winners and the top Senior Division team winners at the state level are awarded trips to the International Science and Engineering Fair. In 1997, the International Science and Engineering Fair was held in Louisville, Kentucky, where Colorado students competed with their peers from the United States and 30 countries.

Many educational experiences are made available to students 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. The judges' interviews and the opening night Food, Fun and Friendship Mixer after judging allow the students to interact with professional scientists and engineers and with each other. 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 Colorado State University and Colorado School of Mines are also presented. Colorado State University offers a \$4,000 scholarship to the first place winner in each of the seven individual categories. The Colorado School of Mines offers a \$1,000 scholarship to a senior entrant who has declared their intention to attend the School of Mines.

### 1997 Colorado Science and Engineering Fair

The 42<sup>nd</sup> Colorado Science and Engineering Fair was held at the Lory Student Center on the Colorado State University campus on April 10 – 12, 1997. Two hundred fifty-five students participated in this three-day event and competed for honors in their respective categories. Also this year, the CSEF was honored to have Dr. Thomas Cech, Nobel Laureate and Professor of Chemistry and Biochemistry at

the University of Colorado as the Guest Speaker. His talk on “Origins of Life and the Medical Possibilities” was inspirational to all of the finalists.

Top exhibitor of the 1997 Colorado Science and Engineering Fair and winner of an all-expense paid trip to compete in the Intel/International Science and Engineering Fair was Shalini Low-Nam from Superior, CO, grade 9, Boulder High School for the project *Proteases in Laundry Detergents: Energy-saving & Environmentally Friendly*. Runner up for the best in the state science fair, also a winner of the all-expense pair trip to ISEF was Shawna Nicole Neergaard from Greeley, CO, grade 12, Greeley West High School for the project *Vaccinate, Mutate, Over-Medicare*. Awarded 3<sup>rd</sup> Place in the Senior Division, and alternate for the ISEF trip was Lindsay Mitchell from Woodland Park, CO, grade 10, Palmer High School for the project *An Examination of Antibiotic-Producing Microorganisms Found In Soil*. The top Senior Division team members, also winners of the ISEF trip, were Courtney Harms, Carrie Shimada, and Amber Carpio from Greeley, CO, grade 12, Greeley West High School for the project *Is Chitosan a Suitable Substitute?*

The top winner of the Junior Division was Chris Jackson from Vail, CO, grade 7, Minturn Middle School for the project *Patterns of Learning*. The exhibit judged second best in the Junior Division was Ryan Patterson from Grand Junction, CO, grade 7, Orchard Mesa Middle School for the project *Can Electromagnetic Fields be Reduced by Configuring Wires in a Different Manner?* Third best in the Junior Division was Danielle Brown from Durango, CO, grade 8, Escalante Middle School for the project *Buoyancy and Stability*. The top Junior Division team members were Melissa Houtchens and Nichelle Shultz from Greeley, CO, grade 7, Brentwood Middle School for the project *Pump It Up*.

Winners of the scholarships given by the local universities were:

From Colorado State University - \$4,000 scholarships (\$1,000 for each year attended at CSU):

- Shalini Low-Nam from Superior, grade 9, Boulder High School, Boulder
- Cory Stevens from Brush, grade 10, Brush High School, Brush
- Scott Leigh Wisor from Englewood, grade 10, Cherry Creek High School, Englewood
- Aaron Oakley from Englewood, grade 12, Cherry Creek High School, Englewood
- Shawna Nicole Neergaard from Greeley, grade 12, Greeley West High School, Greeley
- Ian Kennedy from Hudson, grade 10, Weld Central High School, Keenesburg
- Lindsay Mitchell from Woodland Park, grade 10, Palmer High School, Colorado Springs

From Colorado School of Mines - \$1,000 scholarship

- Jessica Jordet from Brush, grade 12, Brush High School, Brush

Winner of the Ralph F. Desch Memorial Technical Writing Award of \$100 was Dylan Micah Schwindt from Cortez, grade 12, Montezuma-Cortez High School, Cortez for the project *Tree Chemistry: A New Method for Addressing Ancient Resource Depletion A Wood Sourcing Study of Utah Juniper (*Juniperus Osteosperma*) Growing in Sand Canyon Southwestern Colorado*.

### **1997 International Science and Engineering Fair**

The 48<sup>th</sup> Intel/International Science and Engineering Fair was held May 9 – 16<sup>th</sup> in Louisville, Kentucky. This year more than 1000 finalists represented over 30 countries from around the globe. There were 15 disciplinary categories plus a team projects interdisciplinary category. Once again this was the largest ISEF ever.

Colorado's top state winners, Shalini Low-Nam (9<sup>th</sup> grader from Boulder) and Shawna Neergaard (from Greeley) and our top team of Amber Carpio, Carrie Shimada and Courtney Harms (from

Greeley) represented the CSEF. Altogether, Colorado sent 14 delegates plus two teams from seven state regional fairs (plus the state fair). Of those 16 entries, five Coloradans won ISEF awards.

Heather Mathews (from Pikes Peak Regional Science Fair) won a 3<sup>rd</sup> place Grand Award of \$1000 in the ISEF Environmental Science category, and the Association of Engineering Geologists Award of a technical volume, jacket, hat, subscription and teacher's mug. Ian Rataczak (also from Pikes Peak) won a 4<sup>th</sup> Place Grand Award of \$500 in Behavioral and Social Sciences category. Cristin Davidson (San Luis Valley Regional Science Fair) also won a 4<sup>th</sup> Place in her category of Botany. And Cory Stevens (Morgan/Washington Bi-County Regional Science Fair) won a 4<sup>th</sup> Place in Zoology. Barbara Elinoff (Denver Metro Regional Science Fair) won \$200 for a 3<sup>rd</sup> Place award from the American Chemical Society.

## **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. These groups sustain the CSEF 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 the state science 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 science fairs and a great number of local school science 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 fair is directly dependent upon the support of public and private organizations, government agencies, school districts, universities, and the efforts and coordination of more than three hundred dedicated volunteers. To organize and stage the fair each 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.

## **Mission Statement**

The Colorado Science and Engineering Fair is an organization that:

- Honors winners from Colorado regional science fairs at an annual state science fair.
- Provides an opportunity to send finalists from the State of Colorado to the International Science and Engineering Fair (ISEF).

We support regional science fairs by:

- Providing an alternative to the ISEF affiliation as a means of attending the ISEF.
- Providing a forum where regional science fairs can influence policies, rules, and by-laws of the state science fair.
- Providing rules and requirements for participation in the state science fair.
- Facilitating communication, where practical, regarding science fairs and their participants.

Colorado Science and Engineering Fair Sponsors provide the majority of the financial and resource support. In addition, each sponsor also provides two volunteers to serve on the CSSF, Inc. Board of Directors.

### **Gold Sponsors**

(Providing \$1,000 to \$2,500 in support for the CSEF.)

Anheuser-Busch, Inc.  
Colorado Medical Society  
Colorado State University  
Eastman Kodak Company, Colorado Division  
Lockheed Martin Astronautics  
Norgren  
Old Chicago Restaurant  
Rocky Mountain Remediation Services  
Safe Sites of Colorado, LLC  
US West Advanced Technologies

### **Sponsors**

(Providing \$500 to \$750 in support for the CSEF.)

A Foundation for Basics	OEA, Inc.
American Cancer Society	Raytheon Engineering
Amgen, Inc.	San Luis Valley Regional Science Fair
Colorado Dental Association	StorageTek Foundation
Colorado Engineering Council	Symbios Logic
Colorado State University, College of Engineering	University of Colorado, CEAS
Comlinear	National Institute for Standards and Technology
Cortech, Inc.	National Oceanic and Atmospheric Administration
National Renewable Energy Lab/Midwest	National Telecommunications & Information
Research Institute	Administration
Hewlett-Packard Company	Woodward-Clyde Consultants
Hach Company	

### **Financial Contributors**

(Providing up to \$500 in support for the CSEF.)

Kaiser-Hill Company  
Alfred Manufacturing Company  
COBE Laboratories, Inc.  
Ball Aerospace Technology Corp  
Dan & Carol Blake  
Science Applications International Corporation, Energy Products Division

Many Federal employees contribute monthly through the Combined Federal Campaign.

### **Lynn Butler Memorial Scholarship**

This year, the CSSF, Inc. Board of Directors is proud to establish the Lynn Butler Memorial Scholarship Fund to assist low-income finalists in paying their CSEF registration fee. Lynn Butler was the CSEF 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.

#### **Contributors**

Dan Van Gorp  
Jim Sites  
Gina Holland

Paul Josephson  
Sue Refner

Skip Beck  
Rich Shipman

Bob Morrow  
Kristen Howerton

## Advisory Council

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

## Board of Directors

President: Sue Refner  
Vice President: Bob Morrow  
Secretary: Dave Lovering  
Treasurer: Jim Sites  
Fair Director: Kate Taylor  
A Foundation for Basics – Ruth Taylor, Ken Yoder  
American Cancer Society – Richard Shipman, Heather Tolby  
Anheuser-Busch, Inc. – Skip Beck  
Colorado Dental Association – Robert Morrow, David Wright  
Colorado Engineering Council – Gina Holland, Paul Cheng  
Colorado Medical Society – William Pierson, W. Gerald Rainer  
Colorado State University – Tom Sneider, Jim Sites  
Eastman Kodak Company – Joe Eddins, Sue Refner  
Hewlett-Packard Company – Rob Yockey, Kristin Howerton  
Lockheed Martin Astronautics – Joy Knight, Paul Cheng  
National Renewable Energy Lab – Dan Blake  
San Luis Valley Regional Science Fair – David Holm, Harvey Teyler  
Symbios Logic – Tanya Melton  
US Department of Commerce/NIST – John Lehman, Dave Lovering  
US Department of Commerce/NOAA – Dave Clark, Al Bedard  
US Department of Commerce/NTIA – Carrie Shaw  
US West Technologies – Radford Walker  
University of Colorado, College of Engineering and Applied Science – Kay Bell

## Advisory Council Members At Large

Leo Armstrong	Charles Johnson	Paul Josephson
Bill Brinton	Larry Jakel	Beverly Meier
Carl Edstrom	Dan Van Gorp	James Stevens
Nancy Farrell	Cameron Holm	Doug Steward
Nancy Gettman	Donald Taylor	Russell Stoner

## Regional Science Fairs

### Arkansas Valley

Joel Gray and Jim Herrell, Co-Directors

### Boulder Valley

Patience Linfield and Gary Stetler, Co-Directors

### Denver Metro

Herschel Neumann, Director

### East Central

William Mallory & Marguerite Yowell, Co-Directors

### Longs Peak

Terry Scott and Courtney Willis, Co-Directors

### Morgan/Washington Bi-County

Elemer Bernath & Don Gabriel, Co-Directors

### Northeast Colorado

Donald Hurt, Director

### Pikes Peak

Georgia Matteson, Director

### San Juan Valley

Martha Iverson, Director

### San Luis Valley

Lucy Adams, Director

### Southeast Colorado

Robert Williams, Director

### Spanish Peaks

Usha Herbert, Director

### Western Colorado

Forbes Davidson and Rob Robison, Co-Directors

## Working Committees

Alumni – Bob Morrow

Awards Ceremony – Ken Yoder, Gina Holland, Beverly Meier, Lalana Sperline, Kate Taylor, Sue Refner, Doug Steward

Display & Safety – Elemer Bernath, Dan Van Gorp, Don Gabriel, Don Hurt, Nancy Gettman, Rich Shipman, Paul Josephson, Leo Armstrong, Al Bedard, Kate Taylor, Doug Steward, Deanna Baker, Mindy Frieauf, Blayne Frieauf, Jamie Kelly

Facilities/Monitors – Tom Sneider, Ruth Taylor, Paul Josephson, Sue Refner, Harvey Teyler, Lalana Sperline, Jim Sites, Gina Holland

Finance – Dan Blake, Carl Edstrom, Kristin Howerton, Bob Morrow, Lalana Sperline, David Holm, Dave Lovering, Al Bedard, Harvey Teyler, Kate Taylor

Host Families – Sue Refner

Photography – Joe Eddins, Larry Jakel, Natalie Sexton, Carrie Shaw, Eric Sims, Doug Steward, plus Kodak volunteers

Publicity – Dave Clark, John Lehman, Al Bedard, Carrie Shaw

Registration – Kate Taylor, Ruth Taylor, Carl Edstrom, Beverly Meier, Lucy Adams, Sue Refner, Harry Wolf

Regular Judging – Gina Holland, Carl Edstrom, Russell Stoner

Room Set-Up – Jim Sites, Ken Yoder, John Lehman, Elemer Bernath, Paul Josephson, Dan Van Gorp, Tony Gorsted, Tom Sneider, Rob Yockey, Kate Taylor

Scholarships – David Holm, Ken Yoder

Scientific Review – Elemer Bernath, Charles Johnson, Steve Iona, Kate Taylor

Special Awards Judging – Ken Yoder, Beverly Meier, Kate Taylor, Gina Holland, Paul Cheng

Student Activities/Speaker – Lucy Adams, John Lehman, Al Bedard, Ruth Taylor, Cameron Holm

Tours – Rich Shipman, Kristin Howerton, Skip Beck, Nancy Farrell

### **Past Colorado Science and Engineering Fair Directors**

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

**Colorado State Science Fair, Inc.**

<b>INCOME</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
Sponsors	\$7,850	\$9,500	\$12,250	\$9,000	\$16,500
Contributions	\$2,250	\$2,200	\$2,544	\$4,869	\$1,792
Tours	\$107	\$1,302	\$316	\$149	\$433
Registration Fees	\$4,928	\$5,800	\$5,925	\$6,325	\$9,345
Meal Tickets	\$3,423	\$3,266	\$4,238	\$0	\$0
Interest	<u>\$134</u>	<u>\$104</u>	<u>\$58</u>	<u>\$0</u>	<u>\$0</u>
	\$18,692	\$23,172	\$25,311	\$20,343	\$28,070

<b>EXPENSES</b>					
Student Awards	\$2,946	\$3,044	\$4,987	\$5,644	\$5,019
Travel to ISEF	\$2,708	\$2,761	\$2,926	\$3,369	\$4,286
ISEF Affiliation	\$500	\$500	\$500	\$500	\$500
Meals	\$8,110	\$8,656	\$7,067	\$4,213	\$2,539
Coordinator	\$1,750	\$3,600	\$4,200	\$6,300	\$5,800
Printing	\$1,646	\$2,930	\$1,226	\$1,635	\$3,026
Busses/Tours	\$0	\$2,300	\$0	\$422	\$400
Supplies, Misc.	<u>\$1,420</u>	<u>\$1,506</u>	<u>\$1,836</u>	<u>\$1,981</u>	<u>\$3,243</u>
	\$19,080	\$25,297	\$22,745	\$23,564	\$24,813

<b>ASSETS</b>					
Checking	\$324	\$1,152	\$2,957	\$772	\$4,476
Savings	<u>\$3,068</u>	<u>\$124</u>	<u>\$905</u>	<u>\$0</u>	<u>\$0</u>
	\$3,392	\$1,276	\$3,862	\$772	\$4,476

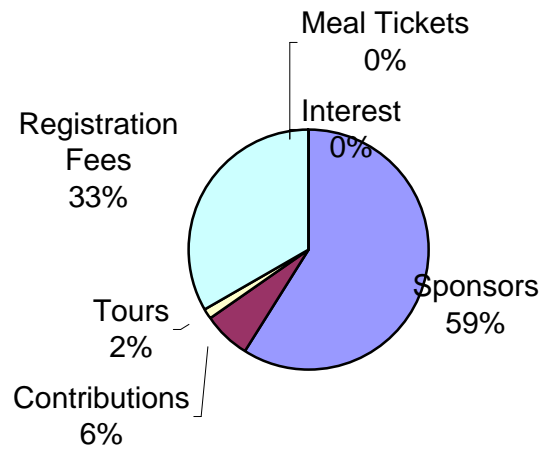
<b>PARTICIPANTS</b>	224	228	238	253	255
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In-Kind Contributions (Tracking begun in 1997)					\$5,945
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## 1997 Financial Profile

### Income for 1997



### Expenses for 1997

