



*59<sup>th</sup> Annual  
CSEF Awards Ceremony  
April 11, 2014*

# *Colorado Science and Engineering Fair 2014 Awards Ceremony*

## **Welcome**

Ms. Courtney Butler, CSEF Director

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Announcer..... Jody Oaks

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## **Presentation of Signature Special Awards**

SparkFun's Thank You to Educators Award ..... CSEF

Lockheed Martin Teacher of the Year Award..... Larry Knauer

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## **Presentation of Special Awards**

Participating in the science fair as a high school student revolutionized my understanding of scientific research. The experiences that I had through the fair exposed me to dedicated researchers, students who shared similar interests and the extensive opportunities for science to elicit positive change across the globe. I am incredibly thankful for the support and opportunity that I had as a science fair participant which has inspired me to continue studying science. As a college senior, I am writing a research thesis studying the use of near-surface remote sensing to better understand forest dynamics. To this day, I rely on the things I learned in science fair to conduct my research.

Anika Petach (CSEF Alumni 2007, 2008)

# Colorado Science and Engineering Fair 2014 Awards Ceremony

Announcer.....Dr. Carol Morrow

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## Presentation of CSEF Special Awards

Pioneers of Science Awards

(Please see pages 9 & 10 of the program for more information on these awards.)

Poster Art Contest

Student Choice Awards

Ralph F. Desch Memorial Technical Writing Award

Society for Science & the Public Awards

American Psychological Association

Association for Women Geoscientists

Intel Corporation

National High School & Two-Year College Mathematics

Honor Society

Ricoh Americas Corporation

Society for In Vitro Biology

United States Department of Commerce

United States Department of Health & Human Services

United States Metric Association

Water Environment Federation

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## Presentation of Grand Awards

### Junior and Senior Division Category Awards

Animal Sciences

Energy & Transportation

Medicine & Health

Behavioral & Social Sciences

Engineering

Microbiology

Chemistry

Environmental Sciences

Physics

Earth & Space Sciences

Math & Computer Sciences

Plant Sciences

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## Presentation of Scholarships

Colorado State University..... Dr. David Holm

Adams State University ..... Dr. Larry Sveum

Colorado School of Mines .....Derek Mogensen

Colorado State University, Pueblo..... CSEF

University of Colorado, Boulder .....Amanda Parker

Ryan Patterson Scholarship ..... Ryan Patterson

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## Presentation of CSEF Top Awards

Junior Division Best CSEF Project Awards

Senior Division Best CSEF Project Awards

Professional Association of Colorado Educators Teacher Awards

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## Colorado ISEF Finalist Recognition & Closing Remarks

Ms. Courtney Butler

Coming from a rural farming area, I have always had an interest in crops and botany. Science fair allowed me to develop botany into a niche as well as master my speaking and writing skills. Although I often had issues conducting the complex research I had in mind without access to sophisticated technology, mentors from CSU and OSU helped me overcome those difficulties and become quite successful in science fair. As I entered college, my science fair accomplishments allowed for my selection to participate in a prestigious research program. The research professionals I have met through the program, my research background, and my communication skills greatly contributed to the success I had at CSU.

Heather Messick (CSEF Alumni 2003, 2004)

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# *Special Awards Organizations*

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## **Air & Waste Management Association Rocky Mountain States Section**

The Air & Waste Management Association is a nonprofit professional organization that enhances knowledge and expertise by providing a neutral forum for information exchange, professional development, networking opportunities, public education, and outreach to more than 8,000 environmental professionals in 65 countries. A&WMA also promotes global environmental responsibility and increases the effectiveness of organizations to make critical decisions that benefit society.

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## **American Association of University Women**

The American Association of University Women promotes equity for all women and girls, lifelong education and positive societal change. In principle and practice, AAUW values and seeks a diverse membership. There shall be no barriers to full participation in the organization on the basis of gender, race, creed, age, sexual orientation, national origin or disability.

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## **American Chemical Society Colorado Local Section**

The American Chemical Society, founded in 1876, is a congressionally chartered independent membership organization which represents professionals at all degree levels and in all fields of chemistry and sciences that involve chemistry. With more than 163,000 members, the ACS is the world's largest scientific society and one of the world's leading sources of authoritative scientific information. ACS is at the forefront of the evolving worldwide chemical enterprise and the premier professional home for chemists, chemical engineers and related professions around the globe.

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## **American Institute of Chemical Engineers Rocky Mountain Section**

The American Institute of Chemical Engineers, created in 1908, is the world's leading organization for chemical engineering professionals, with more than 40,000 members from over 90 countries. The Rocky Mountain Section of the AIChE encompasses a broad scope of industries including energy (traditional and alternative), biotechnology, microelectronics, and environmental.

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## **American Meteorological Society Denver/Boulder Chapter**

The American Meteorological Society promotes the development and dissemination of information and education on the atmospheric and related oceanic and hydrologic sciences and the advancement of their professional applications. Founded in 1919, the AMS has a membership of more than 14,000 professionals, students and weather enthusiasts. AMS publishes nine atmospheric and related oceanic and hydrologic journals, sponsors more than 12 conferences annually and offers numerous programs and services.

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## **American Public Power Association**

The Demonstration of Energy Efficient Developments (DEED) program offers funding for projects that will develop and demonstrate new technologies and techniques in electric power production, distribution and use. Funding for DEED-sponsored projects comes in the form of grants to DEED member utilities, scholarships to university students studying in energy-related disciplines, and joint projects with American Public Power Association (APPA) committees. APPA is the national service organization for community-owned, not-for-profit electric utilities.

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## **American Statistical Association Colorado/Wyoming Chapter**

The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. The ASA members serve in industry, government and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare. The David Young Memorial Award is named after a former professor from the University of Colorado at Denver, Department of Preventive Medicine and Biometrics. David's skills in both science and statistics allowed him to collaborate with medical investigators at the University of Colorado and help communicate research results.

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## **American Vacuum Society Rocky Mountain Chapter**

The American Vacuum Society was founded in 1953 and is organized into 10 technical divisions and 2 technical groups that encompass a range of established, as well as emerging, science and technology areas. The society promotes communication, dissemination of knowledge, recommended practices, research, and education in the use of vacuum and other controlled environments to develop new materials, process technology, devices, and related understanding of material properties for the betterment of mankind. The AVS divisions include advanced surface engineering, applied surface science, biomaterial interfaces, electronic materials and processing magnetic interfaces and nanostructures, nanometer-scale science and technology, plasma science and technology, surface science, thin film and vacuum technology.

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## **American Water Works Association Rocky Mountain Section &**

The American Water Works Association, Rocky Mountain Section is an international nonprofit educational association dedicated to safe water. Founded in 1881 as a forum for water professionals to share information and learn from each other for the common good, AWWA is the authoritative resource for knowledge, information and advocacy for improving the quality and supply of water originating in Colorado, New Mexico and Wyoming.

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### **ASM International**

ASM International was founded in 1913 as The Steel Treaters Club. ASM International serves materials professionals, nontechnical personnel, and managers worldwide by providing high quality materials information, education and training, networking opportunities, and professional development resources in cost-effective and user-friendly formats. ASM is where materials users, producers and manufacturers converge to do business. The materials engineering "family" plays a critical role in society, and serves nearly every industry, from basic manufacturing to nanotechnology and biomaterials.

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### **Colorado Association of Meat Processors**

The purpose of the Colorado Association of Meat Processors is to provide members with formal and informal opportunities for education and information exchange. Members adhere to the principles of humane treatment and handling of animals and livestock; support full measures and full disclosure within the trade and to its community and the move towards an even safer, healthier meat and food supply for the consumer.

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### **Colorado Association of Science Teachers**

The Colorado Association of Science Teachers is a membership organization that represents educators from elementary and secondary schools, colleges and universities and informal science education. CAST provides its members with professional development opportunities, updates on science events around the state, awards for excellence in science education and discounts on memberships to the Denver Museum of Nature and Science and the Denver Zoo.

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### **Colorado Biology Teachers' Association**

The Colorado Biology Teachers' Association is dedicated to the improvement of biological science instruction at all educational levels. CBTA activities include a Spring Seminar and Fall Workshop to improve teacher and student understanding of a variety of biological topics; co-sponsorship of the Colorado Science Conference for Professional Development each fall in Denver; mini-grants for the support of classroom activities; Outstanding Biology Teacher Award program and a website to keep teachers informed about a variety of activities designed to improve teaching.

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### **Colorado Chemistry Teachers' Association**

Colorado Chemistry Teachers Association supports over 1000 chemistry teachers in the state of Colorado through email, newsletter, classes, etc.

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### **Colorado Dental Association**

The mission of the Colorado Dental Association is to provide CDA membership and the public with superior service and to demonstrate effective leadership in advocacy, education, communication and quality products and services that enhance member practices, professional growth and patient care. The CDA is a diverse and synergistic association, led by dynamic, "people-centered" officers and staff that proactively serve and meet professional and related personal needs of member dentists and the oral health needs of Colorado communities. The CDA is recognized as the preeminent model for state dental associations.

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### **Colorado Division of Reclamation Mining & Safety**

The Colorado Division of Reclamation Mining and Safety is responsible for mineral and energy development, policy, regulation and planning. The division is comprised of the Office of Mined Land Reclamation and the Office of Active and Inactive Mines. The Office of Mined Land Reclamation issues reclamation permits from either the Minerals or Coal Programs. Together, these two programs regulate mining and reclamation activities at coal, metal, aggregate and other mineral mines. The Office of Active and Inactive Mines reclaims and safeguards abandoned mine sites that are dangerous and create environmental hazards. The program also provides safety training for mine operators and employees.

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### **Colorado Environmental Health Association**

The Colorado Environmental Health Association is a nonprofit professional organization that was established in 1947 as the Rocky Mountain Section of the National Association of Sanitarians and enjoys an outstanding reputation statewide as an innovative, progressive organization dedicated to advancing the cause of general, professional or technical environmental health. The CEHA is educationally structured, providing scholarships, one-day trainings, and an Annual Educational Conference to educate and inform environmental health professionals.

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### **Colorado Foundation for Agriculture**

The Colorado Foundation for Agriculture was established in 1991 to promote agricultural literacy in Colorado. CFA is governed by a nine-member board of directors that administers the Agriculture in the Classroom program in Colorado. Projects and materials developed by CFA are made available at no or minimal cost to Colorado educators and others interested in educating about agriculture. The CFA is the only organization that provides our state's educators with current information about Colorado agriculture and natural resources on a regular basis.

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### **Colorado Geographic Alliance**

The Colorado Geographic Alliance, part of a network of fifty Geographic Alliances across the country, was founded in 1989 by the National Geographic Society and geographers in Colorado. The COGA's main objective is to provide resources and professional development for elementary and secondary school teachers, ensuring the public understands the rationale behind comprehensive geography education throughout the state of Colorado. COGA is a state-wide educator's organization in which the collective knowledge of experienced teachers of geography is shared with others to strengthen the position of geography in all Colorado schools. Communication and programs supported by COGA develop and foster grassroots collaboration to facilitate interaction of teachers and to encourage conversations about geographic concepts across the state.

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### **Colorado Medical Society**

The Colorado Medical Society, founded in 1871, is an association of physicians which promotes the science and art of medicine, the betterment of public health and the welfare of the medical profession and the patients it serves. The CMS is an advocate for its physician members, acting as a conduit for continuing medical education and physician liaison with managed care and health maintenance organizations and health insurance providers. The organization works to make the physician's practice more efficient and cost effective and to help physicians navigate the rapidly evolving practice environment. The CMS Education Foundation was founded in 1982 to support educational activities in Colorado, including sponsoring the Colorado Science and Engineering Fair.

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### **Colorado Mineral Society**

The Colorado Mineral Society was founded in 1936 by a group of distinguished individuals within the mineralogical field with the purpose of promoting the study of minerals and other geologic materials, of encouraging mineral collecting as hobby, and of conducting public meetings, lectures, and field trips. The Colorado Mineral Society is the only private organization that has presented special awards during the entire 58-year history of the state science fair.

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### **Colorado Mycological Society**

The Colorado Scientific Society was founded in Denver in 1882, six years after Colorado became a state. Founder S.F. Emmons of the US Geological Survey and 11 colleagues were interested in an exchange of observations and ideas on topics in earth science. The membership has since grown from the original 12 to more than 375 in 1992. Current members include representatives from many earth science organizations, including Federal and State government agencies, universities throughout the region, private industry, and individuals. The society welcomes new members with a background and interest in the sciences.

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### **Colorado State University Clean Energy Supercluster**

A Supercluster is a multidisciplinary alliance that integrates experts from many fields with the goal of improving quality of life - by taking research innovations to the global marketplace more efficiently and at an accelerated pace. Superclusters focus on overlap areas between Colorado State University's internationally competitive research and the great global challenges, such as infectious disease, cancer, and clean energy. Launched in 2008, the Clean Energy Supercluster (CES) team has the breadth, depth, and entrepreneurial drive to make a global impact. CES is comprised of more than 160 self-selected faculty from all eight colleges at CSU. These faculty represent fields as diverse as the natural sciences, engineering, agricultural sciences, natural resources, humanities, applied human sciences, veterinary medicine, and business. In addition, a growing number of students and industry leaders are tapping into this growing network.

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### **Colorado State University College of Agricultural Sciences**

The College of Agricultural Sciences at Colorado State University is dedicated to training men and woman in the sciences of tomorrow's agriculture. It is the science of agriculture that will meet future global challenges to produce safe food, protect the environment and landscape, provide biofuels and energy sources as well as meet the economic challenges of change. By the year 2050, the world population will have increased from the 6 billion of today to 9 billion. In order to feed those global masses, we must increase our global food production by 70%. We must increase food production with less land, less water and less resources. Existing technology cannot meet this challenge, so new science and technology needs to be developed. Young scientists need to be attracted into the fields of agriculture to create new ideas and ways of thinking to increase food production safely in a harmonious fashion with our environment. New technology can then potentially be used for biofuels and energy production that is also in harmony with our environment.

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### **Colorado State University Department of Biochemistry & Molecular Biology**

The Department of Biochemistry and Molecular Biology at CSU is committed to providing high quality undergraduate education. As a biochemistry major, a student's studies will include macromolecular structure and function; cellular biochemistry; metabolism; gene expression, structure, replication and repair; cell organization, communication, growth, aging and death with an emphasis on animal cells. The Biochemistry major is ideally suited for pursuing advanced degrees in biochemistry, molecular biology or related life sciences; for health professions; and for employment in the biotechnology industry. For outstanding undergraduates, the department offers the opportunity to do a semester abroad, the only such program in the biosciences in the country.

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### **Colorado State University Department of Chemistry**

The study of chemistry prepares students for a variety of careers, and the undergraduate program at Colorado State University has been designed to give graduates the background necessary to enter any one of these interesting and exciting areas. Chemists are employed in a wide array of professional fields in private industry, government and education. Chemists work in research, development, analysis and testing, consulting, industrial quality control, environmental resource management and forensics. Participation in internships, volunteer activities, and cooperative education opportunities are available to students through the department to enhance a student's practical training and development.



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**Colorado State University**  
**Department of Horticulture & Landscape**  
**Architecture**

The focus of the Department of Horticulture and Landscape Architecture is to solve problems for people, agriculture and the environment and to improve policy making and public education while developing a workplace conducive to scholarship and creativity fostered by teamwork and individual diversity. The undergraduate program at CSU includes concentrations in landscape business, landscape design and contracting, nursery and landscape management, turfgrass management, landscape architecture, floriculture, horticultural business management, horticultural food crops production, horticultural food crops seed science, horticultural science, horticultural therapy and viticulture and enology.

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**Colorado's Touchstone Energy Cooperatives**

Colorado's Touchstone Energy Cooperatives are the electric co-ops that provide power to 72% of the land mass of Colorado. The electric co-ops have initiated the Colorado EnergyWise Project to support and encourage greater energy efficiency by Colorado's co-op members. Sponsorship of these awards is supported by CoBank, one of the primary lenders to electric co-ops across the country.

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**Colorado Veterinary Medical Association,  
CVMA Auxiliary, & Auxiliary to the AVMA**

The Colorado Veterinary Medical Association is a proactive group of more than 2,200 professionals representing each setting of veterinary medicine - clinical practice, public health, academe, corporate, and uniformed services. CVMA members are determined to work together to advance the science and art of veterinary medicine. The CVMA exists to enhance animal health and welfare; promote the human/animal bond; protect public health; advance the well-being of veterinarians; and foster excellence in veterinary medicine through education, advocacy and outreach.

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**Colorado-Wyoming Society of American  
Foresters**

The Society of American Foresters is a scientific and educational organization representing the forestry profession in the United States. The mission of the society is to advance the science, education, technology, and practice of forestry; to enhance the competency of its members; to establish professional excellence; and to use the knowledge, skills and conservation ethic of the profession to ensure the continued health and use of forest ecosystems and the present and future availability of forest resources to benefit society.

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**Comstock Family**

The Heather Comstock Memorial Award is sponsored by the Comstock family in remembrance of Heather Comstock. Before her untimely death, Heather was an honor student at the University of Michigan. She was a biology major studying stem cell research. She had a real zest for life and some say she was going to save the world.

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**Eppler Family**

The Eppler family of Berthoud, Colorado supports general and science education through teaching, volunteering, and donations. This award is intended to give deserving science students both recognition and the tools they need to continue their work on future projects.

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**Fort Collins Conservation District**

Conservation districts originated in 1937 when President Roosevelt wrote letters to every state Governor asking them to establish locally held volunteer boards that could initiate, champion and/or manage land stewardship and conservation programs. The Fort Collins Conservation district was formed in 1945 along with many Districts across Colorado and the Nation to assist landowners heal from the scars of the Dust Bowl days. The district's boundaries contain irrigated and non-irrigated cropland, range land, forest land, and urban areas. The purpose of the conservation district is to deal with soil and water conservation problems through a cooperative effort with landowners, State and Federal Agencies, and other groups and organizations concerned with water and soil conservation issues.

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**Institute of Electrical & Electronics Engineers**

The Institute of Electrical and Electronics Engineers (IEEE), an association dedicated to advancing innovation and technological excellence for the benefit of humanity, is the world's largest technical professional society. It is designed to serve professionals involved in all aspects of the electrical, electronic and computing fields and related areas of science and technology that underlie modern civilization.

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**Little Shop of Physics**

The Little Shop of Physics is a group of science educators and science students based out of Colorado State University. The mission of the LSOP is to find creative ways to share the wonder of science; to present unique hands-on science experience to diverse ranges of students; to involve undergraduates in significant and meaningful service; and to share ideas and insights with current and future teachers. The Matthew McCausland Memorial Award recognizes the spirit of this kind-hearted inventor, and is given to the student who displays the most creativity and "out of the box" thinking.

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**Lockheed Martin**

Headquartered in Bethesda, MD, Lockheed Martin is a global security company that employs about 126,000 people worldwide and is principally engaged in the research, design, development, manufacturing, integration and sustainment of advanced technology systems, products and services. Lockheed's operating units are organized into the four broad business areas of aeronautics, electronic systems, information systems and global solutions, and space systems. Space Systems has major operations in Colorado and California and is focused on human space flight, global communications systems, commercial space, sensing and exploration systems, missile defense systems, strategic missiles, commercial launch systems, and surveillance and navigation systems.

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## **National Geophysical Data Center**

The National Geophysical Data Center, located in Boulder, is part of the US Department of Commerce, National Oceanic & Atmospheric Administration. The NGDC provides stewardship, products and services for geophysical data describing the solid earth, marine and solar-terrestrial environment, as well as Earth observations from space. NGDC's data holdings currently contain more than 400 digital and analog databases, some of which are very large. As technology advances, so does the search for more efficient ways of preserving this data.

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## **Professional Association of Colorado Educators**

The Professional Association of Colorado Educators' (PACE) mission is to move teaching toward a true profession. In doing so, PACE is providing a new voice for teachers who are willing to embrace professionalism for the sake of our children. As the premier statewide educator organization, PACE helps Colorado teachers be more successful in their profession by providing opportunities for education and training, solid networking, competent legal support, quality insurance protection, grants and other monetary assistance, as well as a host of other services. PACE strives to empower educators as professionals, promote collaborative and innovative educational partnerships and help Colorado become a better place for teachers to teach and for students to learn.

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## **Rocky Mountain Association of Geologists**

The Rocky Mountain Association of Geologists was founded in 1922 and is one of the largest and most active associations of geologists in the United States. The Rocky Mountain Association of Geologists supports professional exchange and education through sponsorship of events, publications, training, and seminars. RMAG publishes a monthly newsletter, *The Outcrop*, a quarterly scientific journal, *The Mountain Geologist*, and regular guidebooks on a variety of subjects.

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## **Rocky Mountain Water Environment Association**

The Rocky Mountain Water Environment Association was founded in 1936 as the Rocky Mountain Sewage Association, and since that time has provided its members with the most current information on water quality issues, technology, regulatory changes, and the latest research developments. The RMWEA is affiliated with the Water Environment Federation, an international organization that sponsors the Stockholm Junior Water Prize, which is the most prestigious youth award for a high school water related research project.

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## **Society for Mining, Metallurgy & Exploration Colorado Section**

A member society of the American Institute of Mining, Metallurgy and Petroleum Engineers, SME's roots date back to 1871. Since its inception, SME has continued to evolve over the years to stay abreast of industry changes and to reflect the ever-broadening interests of its members. SME is organized into eight distinct divisions: coal & energy, environmental, industrial minerals & aggregates, mineral and metallurgical processing, mining & exploration, underground construction association, the International Marine Minerals Society, and the woman's auxiliary to the AIME. More than 60 local SME sections facilitate the exchange of information and increase grassroots participation in SME programs and services.

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## **Society of Manufacturing Engineers Colorado Section 354**

The Society of Manufacturing Engineers is the premier source for manufacturing knowledge, education and networking. Through its local chapters, technical communities, publications, expositions and professional development resources, SME promotes an increasing awareness of manufacturing engineering and keeps manufacturing professionals up to date on leading trends and technologies. Headquartered in Michigan, the Society has members in more than 70 countries and represents manufacturing across all industries.

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## **Society of Women Engineers Rocky Mountain Section**

The Society of Women Engineers is a nonprofit educational and service organization that empowers women to succeed and advance in the field of engineering and to be recognized for their life-changing contributions as engineers and leaders. Founded in 1950, SWE is the driving force that establishes engineering as a highly desirable career for women through an exciting array of training and development programs, networking opportunities, scholarships, outreach and advocacy activities and much more. SWE consists of women and men who are graduate engineers as well as those with equivalent engineering experience and/or those interested in supporting SWE's mission. The Rocky Mountain Section along with the Pikes Peak Section work cooperatively to provide a variety of continuing development and career guidance activities to members throughout the states of Colorado and Wyoming.

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## **SparkFun Electronics**

SparkFun's mission statement is "Sharing Ingenuity". We believe everyone should have the tools, hardware, and resources to play with cool electronic gadgets. SparkFun's goal is to get our hands on current technology and information and pass it on - we want to share it all! We make finding the parts and information you need easier and affordable so you can create sweet projects. By getting technology in your hands we think everyone is better off.

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## **SPIE – International Society for Optics and Photonics**

SPIE, the International Society for Optics and Photonics was founded in 1955 to advance light-based technologies. Serving 225,600 constituents from 150 countries, the Society advances emerging technologies through interdisciplinary information exchange, continuing education, publications, and career and professional growth. In 2011, the Society provided more than \$2.5 million in support of scholarships, grants, and other education programs around the world. This ambitious effort reflects the Society's commitment to education and to the next generation of optical scientists and engineers.



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### **Trout Unlimited**

Trout Unlimited is a nonprofit volunteer organization that is dedicated to improving Colorado's Fishing habitats and the preservation of their cold water ecosystems. Trout Unlimited, through its state council, Colorado Trout Unlimited, along with the local chapter, Boulder Flycasters, works to conserve, protect and restore North America's cold-water fisheries and watersheds. By the next generation, Trout Unlimited will ensure the robust populations of native and wild cold-water fish once again thrive within their North American range, so that tomorrow's children can enjoy healthy fisheries in their home waters.

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### **United States Department of Commerce**

The US Department of Commerce promotes job creation, economic growth, sustainable development and improved standards of living for all Americans by working in partnership with business, universities, communities and our nation's workers. The department touches the daily lives of the American people in many ways, with a wide range of responsibilities in the areas of trade, economic development, technology, entrepreneurship and business development, environmental stewardship, and statistical research and analysis. Cutting-edge science and technology at the department fosters innovation, and a focus on research and development that moves quickly from the lab to the marketplace generates progress and new 21st century opportunities.

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### **United States Geological Survey**

Established in 1879, the US Geological Survey is a science organization that provides impartial research on the health of our ecosystems and environment, the natural hazards that threaten us, the natural resources we rely on, the impacts of climate and land-use change, and the core science systems that help us provide timely, relevant and useable information. As the Nation's largest water, earth and biological science and civilian mapping agency, the USGS collects, monitors, analyzes and provides scientific understanding about natural resource conditions, issues, and problems. The diversity of scientific expertise enables the USGS to carry out large-scale, multi-disciplinary investigations and provide impartial scientific information to resource managers, planners and other consumers.

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### **United States Navy & United States Marine Corps**

The Office of Naval Research is an executive branch within the Department of Defense that provides technical advice to the Chief of Naval Operations and the Secretary of the Navy. Science and technology investments enable the technical superiority of our naval forces by producing knowledge and transitions and growing a healthy science and engineering workforce. ONR has six science and technology departments that coordinate and execute the research: Expeditionary Maneuver Warfare & Combating Terrorism; Command, Control Communications, Computers, Intelligence, Surveillance and Reconnaissance; Ocean Battlespace Sensing; Sea Warfare and Weapons; Warfighter Performance; and Naval Air Warfare and Weapons.

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### **University of Colorado, Denver**

At the University of Colorado, Denver, Anschutz Medical Campus, the Medical Scientist Training Program provides rigorous training for students interested in a career in clinical medicine and basic science research. The MST Program's mission is to provide students with the breadth and depth of training necessary to excel as clinician scientists. Colorado has strengths in molecular and cellular biology, immunology, biomedical engineering, virology, neuroscience, endocrinology, pharmacology, and cancer biology, which provide an exciting spectrum of research opportunities for MSTP students.

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### **University of Northern Colorado MAST Institute**

The MAST Institute, at the University of Northern Colorado, is committed to strengthening science, technology, engineering and mathematics (STEM) education at all levels through projects aimed at students and teachers in formal and informal settings. We strive to make an impact both locally and nationally through professional development of teachers, the education of students, and the creation of new knowledge on how to most effectively develop our next generation of STEM professionals.

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### **Wojtaszek Family**

The Paul Wojtaszek Memorial Award is sponsored by Paul's family and friends and given to the project deemed to be the foremost study in the field of medicine & health in the senior division. The award is named for Dr. Paul Wojtaszek, who for decades was a judge for the CSEF in the senior division for medical projects. Paul looked to not only recognize excellence, but also provide insight to students as to how to attain it. This award is intended to celebrate Paul's life in association with the science fair he loved.

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### **Women in Physics Colorado State University Chapter**

CSU's Women in Physics group was founded a year and a half ago with the mission to advance the role of women in physics and other sciences through mentoring, outreach, and fostering community.

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### **Yale Science and Engineering Association**

The Yale Science & Engineering Association was founded in 1914 and has worked to promote the quality of engineering and science studies at Yale. YSEA's members have volunteered their time, talent, energy and financial support to accomplish this mission. Current YSEA activities focus on publicizing Yale programs to high school students, providing financial support to undergraduate research and design projects, acting as an advocate for science and engineering needs with the Yale administration, and making awards to distinguished Yale science and engineering alumni to recognize their professional accomplishments.

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# Scholarship Providers

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## Adams State University

Since its cornerstone was laid in 1923, Adams State University has grown from a teachers' college into a fine liberal arts college. Adams State was recently designated the Regional Education Provider for southern Colorado. Today, students can earn a bachelor's degree in any of 25 majors and programs with 28 minors and emphases and 8 master's degrees in selected majors. The close-knit campus and friendly community create a supportive environment that fosters success. Adams State is a perfect fit for anyone who loves snowboarding, rock climbing, mountain biking - or the idea that professors will know them by name.

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## Colorado School of Mines

Colorado School of Mines is a public research university devoted to engineering and applied science. It has the highest admissions standards of any public university in Colorado and is among the highest of any public university in the country. Mines has distinguished itself by developing a curriculum and research program geared towards responsible stewardship of the earth and its resources. In addition to strong education and research programs in traditional fields of science and engineering, Mines is one of a very few institutions in the world having broad expertise in resource exploration, extraction, production and utilization. As such, Mines occupies a unique position among the world's institutions of higher education.

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## Colorado State University

With more than 150 programs of study in eight colleges, Colorado State University offers a world-class education at one of the nation's top research universities. Academic programs at CSU are among the best in the nation in quality, innovation, and achievement, with internationally known programs in infectious disease, agriculture, cancer research, atmospheric science, sustainability and clean energy, and much more.

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## Colorado State University, College of Natural Sciences

The College of Natural Sciences' central mission is to train and educate successful scientists, scholars, and responsible citizens. In the College, dedicated professors and strong research programs enable students to become vital participants in the scientific process while preparing to contribute actively and skillfully in a world where knowledge of science and technology has become the standard. Approximately 3,100 of the University's nearly 21,000 undergraduates are enrolled in majors within the College. The College also provides courses for the All-University Core Curriculum as part of the general education component required of all students graduating from the University. Each of our eight departments has strong graduate programs that offer Master of Science and Doctor of Philosophy degrees.

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## Colorado State University, Pueblo

Colorado State University, Pueblo is a regional, comprehensive university with moderately selective admissions standards. The University offers a broad array of baccalaureate programs with a strong professional focus and a firm grounding in the liberal arts and sciences. The University also offers a select number of graduate programs. The University addresses students' immediate and long-term educational needs through a focus on career-oriented education grounded in the traditional liberal arts and sciences. Students graduate with the knowledge to enter their professions and with the learning skills to keep current in those professions into the future.

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## Ryan Patterson Scholarship

The Colorado Science and Engineering Fair, with funds from Intel Corporation have established a nonrenewable scholarship of \$2,000 in the name of Ryan Patterson, the 2001 Intel International Science and Engineering Fair top winner. The scholarship is presented to a deserving high school senior based on criteria set by CSEF.

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At the beginning of my seventh grade year, I was really struggling. It wasn't an academic or family struggle, it was a struggle to be accepted as the extremely nerdy, bookish 12-year old that I was by my middle school peers. I thought I would never find anyone like me. Then I found science fair. I had been participating in science fairs since first grade and had made it to the regional competition with my project in sixth grade. Using a continuation of that project, I advanced to the state level competition in April of seventh grade. I distinctly remember entering the exhibit hall, timid, clutching my parents' hands. I promptly located my spot on the tables, and set up my project, still wondering what lay ahead. Little did I know that the state competition would change my life forever.

When I returned to the exhibit hall that afternoon for judging, I found myself surrounded by other students all about my age, many of whom were girls. They seemed pretty nice, and one even smiled and greeted me. I timidly replied back and we started to chat. Pretty soon, I was meeting all of the girls in my row. As the judges started entering the hall, we ceased chatting and focused on our projects. Through the course of several hours, I met professors and other important individuals from countless organizations and had the chance of a lifetime to discuss my work and passions. I also started to realize something that amazed me – there were other girls like me that actually enjoyed being nerdy!

*Leslie Seitz (CSEF Alumni 2011, 2012)*

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# Pioneers of Science Awards

Category	BOD Sponsor	Pioneer
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## ***Animal Sciences***

***Katlin Hornig***

***Georges L. C. F. Cuvier***

Georges Leopold Chretien Fredric Cuvier (1769 - 1832) was a French naturalist who was a pioneer in the science of comparative anatomy. Georges Cuvier originated a system of zoological classification that comprised four phyla based on differences in structure of the skeleton and organs. His reconstruction of the soft parts of fossils based on skeletal remains greatly advanced the science of paleontology.

## ***Behavioral & Social Sciences***

***Johnny Valdez***

***Sigmund Freud***

Sigmund Freud (1856 – 1939) was an Austrian psychiatrist and founder of psychoanalysis. Psychoanalysis is the treatment of mental ailments by realizing that present patient symptoms are directly traceable to psychic trauma experienced earlier in life. Originally, Sigmund Freud's work was not well received by the medical profession, but is now accepted practice in treating mental patients. Freudian theory has had a wide impact, influencing anthropology, education, art and literature.

## ***Behavioral and Social Sciences***

***Karen McCarthy***

***Margaret Mead***

Margaret Mead (1901- 1978) was an American social anthropologist, receiving her Ph.D. from Columbia University in 1929. Margaret focused her studies on problems of child rearing, personality and culture. Margaret is best known for work among the people of Oceania. Margaret rose to become the president of the World Federation for Mental Health.

## ***Chemistry***

***Dr. Larry Sveum***

***Marie Curie***

Marie Curie (1867 - 1934) a chemist and physicist became the first woman Professor of General Physics in the Faculty of Sciences at the Sorbonne, in Paris, France. In 1903 she shared the Noble Prize in physics with her husband Pierre and Henri Becquerel, for their work on radioactivity; thus, becoming the first woman to win a Noble Prize. Dr. Curie went on to receive a second Nobel Prize in Chemistry in 1911 for isolating the element radium and thus became the first person to ever be awarded a second Nobel Prize.

## ***Earth & Space Sciences***

***Gwyneth Glissmann***

***Edwin Powell Hubble***

Edwin Powell Hubble (1889 – 1953) was an American astronomer best known for changing our views of the universe from being of limited size to being ever expanding and for laying the foundation for modern understanding of the cosmos. Edwin Hubble explained the “red shift” when studying stars. He also formulated Hubble's Law: the greater the distance of a galaxy, the faster it recedes and he devised Hubble's constant for calculating that rate. Hubble explained, “Equipped with five senses, man explores the universe around him and calls the adventure science.”

## ***Energy & Transportation***

***Ed Scholz***

***James Prescott Joule***

James Prescott Joule (1818 - 1889) was an English physicist, born in Sale, near Manchester. Joule studied the nature of heat, and discovered its relationship to mechanical work. This led to the theory of conservation of energy, which led to the development of the first law of thermodynamics. The SI unit of work, the Joule, is named after him. He worked with Lord Kelvin to develop the absolute scale of temperature, made observation on magnetostriction, and found the relationship between the flow of current through a resistance and the heat dissipated, now called Joule's Law.

## ***Engineering***

***Dr. Russ Chadwick***

***Nicola Tesla***

Nicola Tesla (1856 - 1943), a brilliant inventor, was born in Austria and migrated to the United States in 1884. Tesla pioneered the invention of the fluorescent light, AC induction motor, radio, various transformers, wireless communications, and alternating current power transmission. All of these inventions were critical to the modern industrial revolution, and are still in use today. Throughout his life, Tesla received more than 700 patents, along with the Edison Medal.

## ***Environmental Sciences***

***Nancy Glissmann***

***Rachel Louise Carson***

Rachel Louise Carson (1907-1964) was an American writer and marine biologist. Her widely known books on sea life combined keen scientific observation with rich poetic description. Rachel Louise Carson's book, *Silent Spring* is a provocative study of the dangers involved in the use of insecticides and is widely believed to have initiated the environmental movement in the United States.

## ***Environmental Sciences***

***Nancy Glissmann***

***Rosalie Edge***

Rosalie Edge (1877 - 1962) was a firebrand suffragette, who worked to secure women's right to vote. In the early 1900's, she used her advocacy skills to influence conservation organizations to protect and conserve wildlife and natural resources. The Audubon Society was one of her main targets because of its early reliance on gun manufacturers for financial support and its early support of unlimited hunting of predators. She appreciated raptors at a time when they were considered vermin and established the first preserve for raptors, Hawk Mountain in Pennsylvania. This woman, who learned to love birds in Central Park, became one of the most effective environmental activists in an era when women were not to engage in public controversy or challenge the establishment.

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# Pioneers of Science Awards

Category	BOD Sponsor	Pioneer
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## ***Math & Computer Sciences***

***Lucy Adams***

***Grace Hopper***

Grace Hopper (1902-1992) joined the Navy during WWII where she worked on the Navy's first modern computer. By the end of WWII she had published a 500 page manual for its use and was working on a successor. By 1953 she invented the compiler, a computer language, translating program. In 1955 she introduced FLOW-MATIC, the first business oriented programming language. Hopper returned to the Navy in 1967 to compile USA Standard COBOL, retiring from the Navy in 1986 with the rank of rear admiral. She was one of the most forward thinking computer programmers of her time.

## ***Medicine & Health***

***Dr. Bob Morrow***

***Greene Vardiman Black***

Greene Vardiman Black (1836 – 1915) was an American dentist. Greene Vardiman Black rose to become the dean of the Dental School at Northwestern University. Greene Vardiman Black made large contributions to dentistry as a teacher, as an originator of dental methods and instruments, and as an author. The method of preparing amalgam alloys for fillings is still in use today.

## ***Microbiology***

***Jody Oaks***

***Jonas Edward Salk***

Jonas Edward Salk (1914 - 1995) was an American microbiologist who was an authority on virus diseases. Jonas Edward Salk is best known for his development of the first polio vaccine. The *Salk vaccine* is made by cultivating three strains of the poliovirus separately in monkey tissue.

## ***Microbiology***

***Dolly Morrow***

***Louis Pasteur***

Louis Pasteur (1822-1895) was a French chemistry professor. Louis Pasteur gained his first success by studying the wine making, fermentation process. Pasteur discovered that both good and bad yeasts were produced in wine making and that he could kill the bad microbes through heating, a process we now call pasteurization. Pasteur further learned that many common diseases were caused by microbes. This realization lead Pasteur to develop ways of inoculating animals by injecting them with the same heat weakened microbes, thus finding vaccines for the prevention of anthrax, cholera and rabies.

## ***Physics***

***Johnny Valdez***

***Max Planck***

Max Planck (1858 – 1947), a theoretical professor of physics at the University of Berlin came from an ancient German family of great scholars, theologians and lawyers. Max Planck's curiosity about the laws of nature and thermodynamics led him to introduce a whole new realm of physics called quantum mechanics that would transform our understanding of the microscopic world of atoms and subatomic particles. Max Planck's research in thermodynamics evolved into the Quantum Theory for which he received the Nobel Prize for physics in 1918.

## ***Physics***

***Elemer Bernath***

***Albert von Szent-Gyorgyi***

## ***Plant Sciences***

***Dr. David Holm***

***Luther Burbank***

Luther Burbank (1849 - 1926) was widely known as a horticulturist, botanist, and scientist. Burbank only had an elementary education, but he was an avid reader. Burbank went on to become one of history's most inventive and productive plant breeders. Luther has been credited with being the "world's greatest plant breeder." Luther Burbank established a nursery garden, greenhouse and experimental farms in Santa Rosa, California that have become famous throughout the world.

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I am currently a senior undergraduate student at the University of Washington studying bioengineering. The UW Bachelor of Science degree in bioengineering program is heavily based on lab work and my experiences as a student researcher in high school and in the CSEF played an invaluable role in preparing me for this degree track. I came to college excited about engineering research and have pursued this passion throughout my undergraduate studies. Currently, I am completing my senior capstone project on robotic surgery in the UW Department of Orthopedics. I hope to continue pursuing my interest in biomedical research and development as an engineer at medical technology companies after graduation.

*Ian Donaldson (CSEF Alumni 2007)*

# Colorado Science and Engineering Fair Teacher of the Year Honor Roll

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Gary Wilkinson	Monte Vista High School, Monte Vista	2003
Nancy Gettman	Woodlin School, Woodrow	2004
Penny Propst	Merino Jr/Sr High School, Merino	2005
TJ Donahue	Cherry Creek High School, Greenwood Village	2006
Haydee Phelps	Summit Middle School, Boulder	2007
Doug Steward	Monte Vista High School, Monte Vista	2008
Dena Palser	Lone Star School, Otis	2009
James DePue	Wray High School, Wray	2010
Daniel Newmyer	Center High School, Center	2011
David Miner	Brush High School, Brush	2012
Candus Muir	The Classical Academy, Colorado Springs	2013

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## 2013 Intel ISEF Results

### Grand Award Winners

Michael Chen from Fairview High School won \$3,000 (1<sup>st</sup> Place) in the Chemistry category.

Kai Kloepfer from Fairview High School won \$3,000 (1<sup>st</sup> Place) in the Electrical & Mechanical Engineering category.

Logan Collins from Fairview High School won \$1,500 (2<sup>nd</sup> Place) in the Microbiology category.

Nurul MohdReza from Union Colony Charter School won \$1,500 (2<sup>nd</sup> Place) in the Microbiology category.

Rachel Rossi from Durango High School won \$1,500 (2<sup>nd</sup> Place) in the Environmental Management category.

Lawrence Zhang from Fairview High School won \$1,500 (2<sup>nd</sup> Place) in the Cell & Molecular Biology category.

Matthew Hileman from The Classical Academy College Pathways won \$1,000 (3<sup>rd</sup> Place) in the Electrical & Mechanical Engineering category.

### Special & Governmental Award Winners

Michael Chen won a four-year scholarship (worth \$8,000/year) and a one-time \$2,500 research award from Arizona State University. Michael also won \$1,000 (3<sup>rd</sup> Place) from the National Aeronautics and Space Administration.

Matthew Hileman won a four-year scholarship (worth \$8,000/year) and a one-time \$2,500 research award from Arizona State University.

Kai Kloepfer won \$1,500 (1<sup>st</sup> Place) from the International Council on Systems Engineering.

Easton LaChappelle from Mancos High School won \$150 (2<sup>nd</sup> Place) from the Patent and Trademark Office Society. Easton also won a four-year scholarship from West Virginia University.

Jacob Nicols from Brush High School won a four-year scholarship from West Virginia University.

Taylor Rocha from Monte Vista High School won \$750 (2<sup>nd</sup> Place) from the American Geosciences Institute. Taylor also won a full tuition scholarship (\$150,000) from Drexel University.

Rachel Rossi won a full tuition scholarship (\$150,000) from Drexel University.

Sara Stalcup from Delta High School won a full tuition scholarship (\$150,000) from Drexel University.

Dr. Paul Strode, a teacher at Fairview High School in Boulder won the Agilent Technologies Teacher Award of \$5,000.

## 2013 Broadcom MASTERS Finalists

Broadcom MASTERS, a program of Society for Science and the Public, is a national competition for middle school students. Broadcom MASTERS nominees are eligible to register and complete an online application to compete nationally for valuable prizes and awards. Ten students from Colorado were named as Semifinalists and two were chosen as Finalists in 2013:

Rebecca Bloomfield, grade 8, of Colorado Springs, CO for her project *A Slippery Slope: The Effects of Slope and Remediation Treatments on Post-Fire Sedimentation*. Rebecca won a \$2,500 (2<sup>nd</sup> Place) Technology Award.

Johann Kailey-Steiner, grade 8, of Denver, CO for his project *Rocket Design, Part 3: Exploring How Vortex Generators Affect Boundary Layer Airflow*. Johann won a \$3,500 (1<sup>st</sup> Place) Mathematics Award.

# Colorado Science and Engineering Fair

## Copper Sponsors

(Sponsorships of \$500 - \$749)

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### Colorado Engineering Council

The Colorado Engineering Council consists of representatives of 22 professional engineering, architectural and scientific organizations. The CEC coordinates and promotes the interests of the constituent organizations by providing a unified effort devoted to the advancement of the professional, technical, educational, and ethical interests and standards of professional organizations engaged in the various branches of engineering, architecture or science.

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### ICAT Managers

ICAT is a leading provider of property insurance to businesses and residential property owners located in hurricane and earthquake regions of the US. We are Underwriters at Lloyd's of London and we underwrite on behalf of other insurance companies. Our purpose is to assist businesses and people to recover from natural disasters and to provide best-of-market product and services to our policy holders, agents and brokers.

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### IEEE High Plains Section

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### Jill Rickards & Company, CPAs

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### Optimal Schedule

Optimal Schedule is a Colorado company providing advanced employee scheduling software to help our clients create more satisfied customers, more efficient managers, and happier employees. We manage the complexity of shift-scheduling, shift-trading and overtime so our clients can focus on operations and everyone works the shifts that make sense for their schedule.

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### San Luis Valley Regional Science Fair, Inc.

The San Luis Valley Regional Science Fair (SLV RSF) is located in the San Luis Valley of southern Colorado. The first science fair for the SLV RSF was held in 1949, making it the oldest science fair in Colorado and one of the oldest in the nation. The fair received nonprofit status in 1981 and today the SLV RSV has a board of directors and a paid program director.

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### Society of Women Engineers, Rocky Mountain Section

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### Sundyne Corporation

Headquartered in Arvada, CO, Sundyne is a leading manufacturer of highly reliable and efficient centrifugal pumps and compressors for use in the oil and gas, petrochemical, chemical, power generation and water processing industries. With a global channel consisting of more than 300 sales and service locations, and a manufacturing network that employs over 1,000 people across 5 facilities, Sundyne provides high quality engineered fluid handling solutions to customers around the world.

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### Vaughan Web Works, LLC

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# Colorado Science and Engineering Fair

## Gold Sponsors

(Sponsorships of \$2,500 – 4,999)



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Colorado Dental Association

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GoDaddy is the world's largest domain name registrar, hosting provider and SSL certificate provider focused on helping small businesses grow larger. GoDaddy has corporate philanthropy ingrained in its culture and believes that its responsibility as a corporate citizen is to make a difference in the communities in which it operates.

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Seagate is the world's leading provider of storage devices, providing solutions for enterprise, desktop, mobile computing, consumer electronics and retail markets. Seagate has the broadest product portfolio in the industry, offering hard disk, solid state hybrid and solid state drives. The company, headquartered in Cupertino, CA employs more than 55,000 worldwide.

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The Society of Petroleum Engineers (SPE) is a worldwide society with over 80,000 members and locally, the Denver Section has approximately 1,200 active members. Besides being a proud sponsor of the Denver Metro Regional Science Fair and the Colorado Science and Engineering Fair, we also support 5 colleges and universities by providing scholarships to students of the junior and senior class level with a minimum 2.5 GPA and who participate in a Petroleum Engineering Curriculum.

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This is not your parents' engineering school. Chalk and talk, so-called gatekeeper courses, and teaching theory without practice went out years ago. In their place, CU-Boulder faculty has pioneered a new approach to engineering education that places the students' needs first. CU Engineering, Colorado's top-ranked engineering college, has a tradition of excellence in engineering education dating back to 1893, and we continually update and improve our programs to reflect the highest standards in teaching and learning, discovery and innovation, and community and culture.

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## Silver Sponsors

(Sponsorships of \$1,000 – 2,499)

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AREVA Federal Services

AREVA is a global company focused on all aspects of the nuclear industry. AREVA Federal Services focuses on the support of government nuclear environmental projects, mostly for the Department of Energy. In the US, there are over 4,000 AREVA scientists and engineers working to ensure the nuclear industry provides the public with the benefits of safe, environmentally sound nuclear power. AREVA encourages excellence and looks to the Colorado Science and Engineering Fair as a source of its future employees.

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Colorado Medical Society

The Colorado Medical Society is a nonprofit organization whose membership comprises the majority of physicians, residents, and medical students in Colorado. The Society's mission is to promote the science and art of medicine, the betterment of public health, and the welfare of Colorado physicians and their patients.

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Google

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Tava Wu Cuttum

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## Bronze Sponsors

(Sponsorships of \$750 - \$999)

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Bohemian Foundation

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Colorado Science Teachers Association

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### Galvanic Engineering

Galvanic Engineering LLC is a small Colorado business that provides consulting and contracting services in the fields of electrical and software engineering. Galvanic has extensive experience in the design, manufacture and testing of electronic and electromechanical products, specializing in embedded computing and control systems. Galvanic was founded by CSEF alumnus and current CSEF Board of Directors member Ryan Patterson, who competed at the CSEF from 1997 to 2001.

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### Picosecond Pulse Labs

Founded in 1980, Picosecond Pulse Labs (PSPL) is a leading manufacturer of serial data test instruments and broadband components for use from DC to 100GHz. PSPL products are used in serial data testing and characterization, high-speed measurements, and high-performance system applications. PSPL's products are targeted at providing leading performance, user friendly features and excellent value. Picosecond is based in Boulder and currently employs over 40 electrical engineers, test technicians and electronic assemblers. Recruitment of both interns and full time employees is commonly from local universities such as CSU, CSM and CU Boulder.

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# Colorado Science and Engineering Fair

## Diamond Sponsors

(Sponsorships of  $\geq$  \$10,000)



## Colorado State University

### Office of the Provost/Executive Vice President

Colorado State University ([www.colostate.edu](http://www.colostate.edu)), a land-grant institution and a Carnegie Doctoral/Research University-Extensive is one of the nation's leading research universities, with world-class research in infectious disease, atmospheric science, clean energy technologies and environmental science. Founded in 1870, CSU is the "University of Choice" for Colorado residents. In addition to excellent programs in those areas, CSU offers among the very best professional programs in the US in veterinary medicine, engineering, alternative energy, occupational therapy, journalism, agriculture and construction management.

### College of Natural Sciences

The Colorado of Natural Sciences comprises a dynamic community of scholars in the physical, mathematical, behavioral and life sciences. Our mission is to conduct cutting edge research in our foundational fields, to actively engage in important interdisciplinary research and to educate and inspire the next generation of scholars, researchers and professional leaders.

### CNS Education & Outreach Center

The College of Natural Sciences Education & Outreach Center is an incubator for innovation in STEM education. We serve both CSU and K-12 students and faculty through a wide variety of programs. A common thread that weaves through all of our programs is increasing the quality, quantity and diversity of students in STEM disciplines. Particular emphasis is on finding new ways to promote scientific creativity and innovation, attributes essential for global competitiveness in the 21<sup>st</sup> century.



Congratulations to all participants at the Colorado Science and Engineering Fair. We know you learned a lot of new skills, had fun, and are anxious to celebrate your well-deserved success! You have all demonstrated that you can solve problems and create solutions, sticking with it despite the many challenges. At Intel, we believe that's how we all learn to be successful, and we applaud your hard work. All of us at Intel wish you the best of luck today and thank you for your participation. Please keep innovating!

## Platinum Sponsors

(Sponsorships of \$5,000 - \$9,999)



From daily weather forecasts, severe storm warnings and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need, when they need it.



NTIA is the Executive Branch agency that is principally responsible for advising the President on telecommunications and information policy issues. NTIA's programs and policymaking focus largely on expanding broadband Internet access and adoption in America, expanding the use of spectrum by all users and ensuring that the Internet remains an engine for continued innovation and economic growth.



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