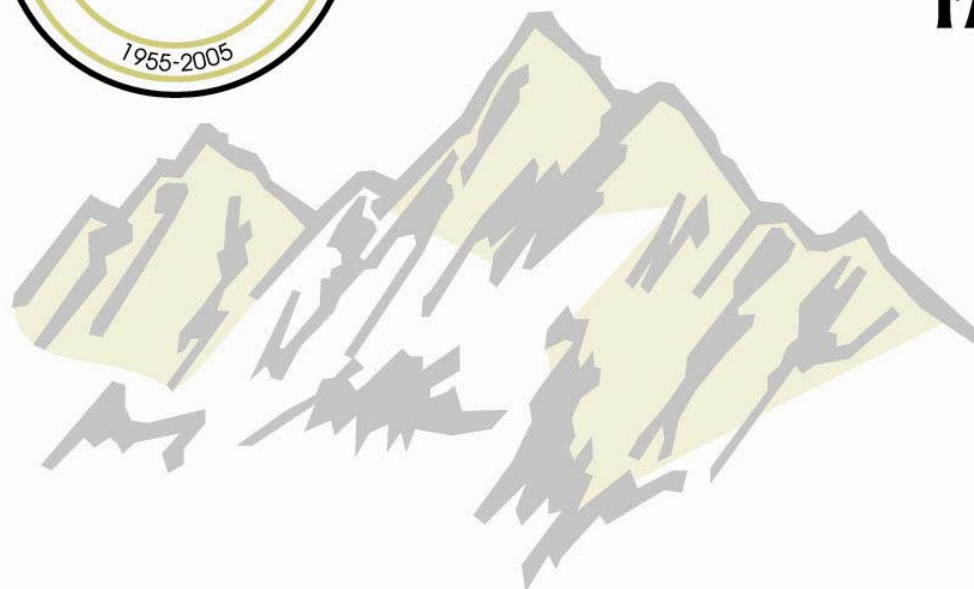




# COLORADO SCIENCE & ENGINEERING FAIR

**CELEBRATING 50 YEARS**  
**1955-2005**



*50<sup>th</sup> Annual*  
*CSEF Awards Ceremony*  
*April 8, 2005*

Welcome ..... Ms. Courtney Butler, CSEF Director

### Special Awards

Announcer ..... Ms. Jody Oaks, San Luis Valley Regional Science Fair, Inc.

Agilent Technologies  
 Air and Waste Management Association  
 American Association of University Women  
 American Chemical Society  
 American Institute of Chemical Engineers  
 American Meteorological Society  
 American Vacuum Society  
 American Water Works Association  
 Analex Corporation  
 Armbruster Associates  
 ASM International  
 Association for Women Geoscientists  
 Colorado Association of Science Teachers  
 Colorado Biology Teachers Association  
 Colorado Dental Association  
 Colorado Division of Wildlife  
 Colorado Environmental Health Association  
 Colorado Foundation for Agriculture  
 Colorado Geological Survey/Division of Minerals & Geology  
 Colorado Medical Society  
 Colorado Mineral Society  
 Colorado Mycological Society  
 Colorado Scientific Society  
 CSU, Department of Biochemistry and Molecular Biology  
 CSU, Department of Chemistry  
 CSU, Department of Horticulture and Landscape Architecture

Colorado Veterinary Medical Association  
 Colorado-Wyoming Society of American Foresters  
 Eastman Kodak Company  
 Eppler Family  
 Fort Collins Soil Conservation District  
 Lockheed Martin Space Systems Company  
 Luzenac Group  
 National Geophysical Data Center  
 National Renewable Energy Laboratory  
 Optical Society of America  
 Rocky Mountain Association of Geologists  
 Rocky Mountain Inventors Association  
 Rocky Mountain Goats Foundation  
 Rocky Mountain Water Environment Association  
 Society of Manufacturing Engineers  
 Society of Women Engineers  
 Soil and Water Conservation Society  
 United State Air Force ROTC  
 United States Army  
 United States Department of Commerce  
 United States Geological Survey  
 United States Navy and Untied States Marine Corps  
 UCHSC Medical Scientist Training Program  
 Visible Productions  
 Yale Science and Engineering Association  
 Zonta Club of Boulder County

### Grand Awards

Announcer ..... Dr. Bonnie Hames, NREL

Presenter ..... Dr. David Holm, President, Colorado State Science Fair, Inc.

#### Junior and Senior Division Individual Project Category Awards

Behavioral & Social Sciences  
 Botany  
 Chemistry  
 Earth & Space Sciences

Engineering  
 Environmental Sciences  
 Mathematics & Computer Sciences

Medicine & Health  
 Microbiology  
 Physics  
 Zoology

Pioneers of Science Awards  
 Science Service Awards  
 Poster Art Contest  
 Student Choice Awards

Ralph F. Desch Memorial Technical Writing Award

#### Scholarships

Adams State College ..... Dr. Randall Emmons  
 Colorado School of Mines ..... Dr. John Speer  
 University of Colorado ..... Mr. Ryan Patterson  
 The Ryan Patterson Scholarship ..... Mr. Ryan Patterson

Junior and Senior Division Best Team Project Awards  
 Junior and Senior Division Best Individual Project Awards  
 Intel Foundation Computer Awards  
 Teacher of the Year Award

Colorado ISEF Finalist Presentation & Closing Remarks ..... Ms. Courtney Butler

## Special Award Organizations

### **Adams State College Foundation**

A scholarship has been established by the Adams State College Foundation, Board of Directors. The Scholarship is intended to recognize students participating in the Colorado Science and Engineering Fair who are identified as having significant performance potential in science and mathematics. The value of the scholarship will be equivalent to one-year resident tuition and fees and will be awarded to one student in each of the following Senior Division categories: Behavioral & Social Sciences, Botany, Chemistry, Earth & Space Sciences, Engineering, Environmental Sciences, Mathematics & Computer Sciences, Medicine & Health, Microbiology, Physics, and Zoology.

### **Agilent Technologies**

Agilent Technologies manufactures electronics equipment for test and measurement, communications, life sciences, chemical analysis and other applications. Agilent has several sites within Colorado including Loveland, Ft. Collins, and Colorado Springs. Agilent is a major sponsor of the CSEF, ISEF and a variety of science education programs.

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

The Air and Waste Management Association, Rocky Mountain States Section, is a non-profit professional organization whose mission is to provide a forum for the discussion of technical concepts and issues related to complex air quality and waste management problems. The membership is comprised of local, state and federal government employees, industry representatives, private consultants, environmental activists, and students.

### **American Association of University Women**

The American Association of University Women became interested in presenting an award to girls in Middle School in the Fields of Math and Science when our studies showed that girls were falling behind in these two fields. In principle and in practice, AAUW values and seeks a diverse membership.

### **American Chemical Society, Colorado Section**

The Colorado Section of the American Chemical Society was founded over 100 years ago as an organization to support and promote the profession and interest of chemists and chemical engineers. One major aim of the Society is to encourage an interest in the chemical sciences in the young people of Colorado.

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

The Rocky Mountain Section of the American Institute of Chemical Engineers contains over 500 members in a geographic area that includes Colorado and Wyoming as well as parts of South Dakota and New Mexico. Its members are involved in the petroleum, energy services, chemical and environmental industries, and are well represented in both academia and government.

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

The American Meteorological Society is an organization whose membership is open to anyone who has an interest in meteorological matters. The aims of the American Meteorological Society are to promote "the development and dissemination of knowledge of meteorology in all its phases and the advancement of its professional ideals."

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

The American Vacuum Society is a member society of the American Institute of Physics. We promote 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 Rocky Mountain Chapter of the AVS is made up of several hundred scientists, engineers, technicians, and others involved with the use of vacuum in their work in the Rocky Mountain Region.

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

The Rocky Mountain Section of the American Water Works Association (RMSAWWA) is a group of highly motivated water professionals that participate at a regional level to improve the quality and supply of drinking water. The Section includes the states of Colorado, Wyoming and New Mexico, and is part of a much larger organization (AWWA) which has over 50,000 members throughout the world. The Rocky Mountain Section of the American Water Works Association strives to be the pre-eminent resource for education, training, information, and research for the water industry in the Rocky Mountain region. The Rocky Mountain Section of the American Water Works Association, Research Committee, is proud to be part of the Colorado Science and Engineering Fair.

### **Analex Corporation**

Analex Corporation designs, develops, and tests aerospace and medical products and systems, and analyzes and supports defense systems. For almost twenty years, the Colorado division has supported the successful development and operation of launch vehicles that place critical communications satellites in orbit for military and government use. Today, the division also provides advanced software engineering support to highly technical medical device programs. An award certificate and \$100.00 are presented by Analex to the individual who most clearly demonstrates an understanding of good software development methodologies.

### **Armbruster Associates**

Armbruster Associates is an organization which designs, develops, and markets motivational products for use in learning.

### **ASM International, Rocky Mountain Chapter**

ASM International is a professional society of materials scientists and engineers. It was formed during the 1920's as an outgrowth of the Heat Treating Society. The Rocky Mountain Chapter was founded in 1941 and has about 450 members.

### **Association for Women Geoscientists Denver Chapter**

The goals of the Association for Women Geoscientists, Denver Chapter, are to encourage the participation of women in the geosciences; to exchange education, technical and professional information; and to enhance the professional growth and advancement of women in the geosciences. To this end, the Association for Women Geoscientists, Denver Chapter, awards a \$50 check and a rock sample for the Best Senior and Junior Earth Science Project by a Female Student.

## Special Award Organizations

### Colorado Association of Science Teachers

The Colorado Association of Science Teachers is a state chapter of the National Association of Science Teachers and represents educators from elementary and secondary schools, colleges, and universities. The purpose of CAST is to support, stimulate and improve science education at all levels of instruction (pre-K through college) in the state of Colorado. The awards are given on the basis of the teaching value of the exhibit display to the general public. Two awards are given in both the Junior and Senior Divisions in recognition of those who show excellence in the use of the scientific method. A fifth award is given in the name of Gerald Gromko.

### Colorado Biology Teacher's Association

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

### Colorado Dental Association

The Colorado Dental Association is the largest professional association of dentists in Colorado, representing 80 percent of the licensed dentists in the state. The Colorado Dental Association is actively involved in public education projects promoting oral hygiene and care. To this purpose, the Colorado Dental Association awards, at the Colorado Science and Engineering Fair, prizes and plaques to the Senior and Junior participants whose projects best relate to dental technology.

### Colorado Division of Wildlife

The mission of the Colorado Division of Wildlife is to perpetuate the wildlife resources of the state and provide people the opportunity to enjoy them. The Division regulates hunting and fishing activities by issuing licenses and enforcing regulations. We also manage more than 230 state wildlife areas for public recreation; conduct research to improve wildlife management activities; provide technical assistance to private and other public landowners concerning wildlife and habitat management; and develop programs to protect and recover threatened and endangered species. We provide wildlife recreation opportunities for residents and visitors, including hunting, fishing and wildlife viewing.

### Colorado Environmental Health Association

Colorado Environmental Health Association is a nonprofit professional organization whose mission is to promote environmental health as a profession which strives for continual improvement in environmental health quality and the growth of individual professionalism. CEHA has 300 members comprised of local and state health department professionals and industry representatives. CEHA is educationally structured, providing scholarships, one-day trainings, and an Annual Educational Conference to educate and inform environmental health professionals.

### Colorado Foundation for Agriculture "Agriculture in the Classroom"

The purpose of the "Agriculture in the Classroom" Task Force is to educate consumers of food, fiber, and nutritional supplement consumers on the importance of agriculture in our daily lives through educational programs.

### Colorado Geological Survey & Division of Minerals and Geology

The Colorado Geological Survey and Division of Minerals & Geology serve the people of Colorado by providing sound geologic information and evaluation, and educating the public about the important role of earth sciences in everyday life in Colorado.

### Colorado Medical Society

The Colorado Medical Society is a 133-year-old professional organization of 5,500 physician members dedicated to providing excellence in healthcare to all Coloradans. The Colorado Medical Society Education Foundation is a non-profit, tax-exempt charitable foundation established primarily to support educational and charitable programs in Colorado. It has dedicated itself to funding first-year medical student scholarships and educational programs such as the Colorado State Science and Engineering Fair.

### Colorado Mineral Society

The Colorado Mineral Society is an educational society of professionals and amateurs with an interest in the earth sciences. The Society promotes the study of minerals and other geologic materials, encourages mineral collecting as a hobby, and conducts public meetings, lectures, and field trips. In addition, the society engages in a number of other activities which relate to the society's purposes. The Colorado Mineral Society is the only private organization that has presented special awards during the entire 50-year history of the State Science Fair.

### Colorado Mycological Society

The Colorado Mycological Society was founded in 1966 to stimulate interest in and advance the understanding of the field of mycology or the study of fungi. The Society's major emphasis is the study of wild mushrooms; however the Colorado Mycological Society presents a Special Award for the best exhibit advancing our knowledge of any of the fungi.

### Colorado School of Mines

The Colorado School of Mines together with the CSM Alumni Association in making available a total of five scholarships for Colorado Science and Engineering Fair winners in five specified categories for high school seniors who graduated in May 2005. These scholarships are for full-resident tuition for four years. The specified categories are Earth & Space Science, Engineering, Mathematics and Computer Science, Physical Science and Environmental Sciences.

### Colorado Scientific Society

The Colorado Scientific Society was founded in 1882 to promote the interchange of information among Colorado scientists. The Society seeks to stimulate the interest of young people, and to educate the general public, in areas relating to earth sciences. The Colorado Scientific Society awards cash prizes of \$100 and \$75 each for 1st and 2nd place winners in the Senior Division; and \$75 and \$50 respectively, for 1st and 2nd place winners in the Junior Division, in fields relating to Geology and the Earth Sciences.

## Special Award Organizations

### **CSU, Department of Chemistry**

The faculty and students of the Department of Chemistry at Colorado State University are committed to excellence in chemical education and research. Research at all levels promotes the practice of the scientific method. In that spirit, the Department of Chemistry recognizes through financial awards the excellence in chemistry research at the science fair by presenting awards for two projects - one from the senior division and one from the junior division - judged to have represented the best exhibits in the area of chemistry.

### **CSU, Department of Biochemistry and Molecular Biology**

The Department of Biochemistry and Molecular Biology at CSU is committed to providing high quality undergraduate education. A strong, well-balanced background in the biological, physical, and mathematical sciences is provided. As a biochemistry major, your 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. Our 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. Several opportunities for experiential learning and working closely with our faculty are provided. Dedicated modern laboratories with state-of-the-art instrumentation ensure that our students receive the best possible training. More than 25% of the 180 biochemistry majors are participants in the university honors program, the largest representation from any major. Most of our majors engage in independent research projects under the guidance of one of our 13 faculty members. For outstanding undergraduates, the Department offers the opportunity to do a semester abroad, funded by a grant from the National Science Foundation, the only such program in biosciences in the United States. A local internship program providing our students with work experience in our Macromolecular Resource Facility or in industrial laboratories is also available.

### **CSU, Department of Horticulture and Landscape Architecture**

Horticulture is the application of scientific principles in the growing, developing, marketing, processing and utilizing of fruits, vegetables, flower and foliage plants, trees, shrubs, and turfgrasses. The major requires a strong grounding in botany, chemistry, horticulture, and business. There are four concentrations in the horticulture major - floriculture, horticultural business management, horticultural food crops, and horticultural science.

### **Colorado Veterinary Medical Association CVMA Auxiliary to the AVMA**

The Colorado Veterinary Medical Association and its auxiliary's mission is to enhance animal health and welfare and the status of the veterinary profession, through advocacy, education, and increased public awareness of the value of Veterinary medicine. It is a proactive group of more than 1,600 professionals representing clinical practice, public health, academe, industry, and military.

### **Colorado-Wyoming Society of American Foresters**

The Society of American Foresters, Colorado-Wyoming State Society, is a nonprofit professional organization whose mission is 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. The membership is comprised of local, state and federal government employees, industry representatives, private consultants, and students.

### **Eastman Kodak Company**

The Eastman Kodak Company, a sponsor of the Colorado Science and Engineering Fair, contributes from its Colorado Division and Corporate Division to award students who make the most effective use of photography in a Science Fair project. The project itself need not be concerned directly with the science of photography.

### **Eppler Family**

The Eppler family of Loveland, Colorado supports general and science education through teaching, volunteering, and donations. The Eppler Family Award is intended to give deserving science students both recognition and the tools they need to continue their work on future projects. This year's award is for outstanding use of electrical measurement and/or control, and consists of a microprocessor development kit and a digital multimeter. Future awards will focus on other scientific disciplines on a rotating basis.

### **Fort Collins Conservation District**

The Fort Collins Conservation district was formed in 1945, along with many Districts across Colorado and across the Nation, to assist landowners heal 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. The Fort Collins Conservation district gives awards to the best Project in both Junior and Senior divisions with a soil or water conservation theme.

### **Lockheed Martin**

Headquartered in Bethesda, Maryland, Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The Corporation reported 2003 sales of \$31.8 billion. Lockheed Martin Space Systems Company, headquartered near Denver, CO., is one of the major operating units of Lockheed Martin Corporation. Space Systems Company designs, develops, tests and manufactures a variety of advanced technology systems for space and defense. Chief products include space launch systems, defense systems, interplanetary and science spacecraft, spacecraft for commercial and government customers, fleet ballistic missiles and missile defense systems.

### **Luzenac Group**

Luzenac's talc provides benefit to a wide range of products in the agricultural, paper, plastic, and personal care industries. Each year, more than 1.4 million tons of talc is processed from 11 mines and in 20 plants throughout the world. North American headquarters is located in Centennial, CO.

## Special Award Organizations

### National Geophysical Data Center

The National Geophysical Data Center provides scientific stewardship, products and services for geophysical data describing the solid earth, marine, and solar-terrestrial environment, as well as earth observations from space.

### National Renewable Energy Laboratory

The National Renewable Energy Laboratory (NREL) is the U.S. Department of Energy's premier laboratory for renewable energy research, development and deployment, and a leading laboratory for energy efficiency. As such, NREL is a world leader in the development of these technologies, benefiting both the environment and the economy. The laboratory's mission is to develop renewable energy and energy efficiency technologies and practices, advance related science and engineering, and transfer knowledge and innovations to address the nation's energy and environmental goals.

### Optical Society of America Rocky Mountain Section

The Rocky Mountain Section of the Optical Society of America fosters interest in optics and seeks to advance the study and practice of optical science and engineering.

### Rocky Mountain Association of Geologists

The Rocky Mountain Association of Geologists is one of the largest associations of geologists in the United States. The RMAG is composed of earth scientists from industry, government, and academia encompassing a wide spectrum of backgrounds. All share a common interest in the geology of our Rocky Mountain area. Founded in 1922, the RMAG is one of the most active geological societies in the country. 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. For additional information about the Rocky Mountain Association of Geologists, visit: [www.rmag.org](http://www.rmag.org).

### Rocky Mountain Inventors and Entrepreneurs Congress

The Rocky Mountain Inventors and Entrepreneurs Congress is a Colorado non-profit corporation organized in 1978. It is dedicated to the education, professional growth, and success of people involved in all aspects of the innovation process. The Rocky Mountain Inventors and Entrepreneurs Congress presents awards for two Senior and one Junior Division exhibits for outstanding innovations and educational applications.

### Rocky Mountain Goats Foundation

The Rocky Mountain Goats Foundation is a non-profit group dedicated to the preservation of high-country wildlife, habitat and overall wildlife conservation. The Foundation funds various educational and scholarship activities, grade-school through college. Wildlife habitat is disappearing in Colorado at the rate of 72 football fields every day and because of that, we are trying to encourage the study of wildlife habitat. The Rocky Mountain Goats Foundation has purchased 3 new Rocky Mountain Goat kids for the Cheyenne Mountain Zoo in Colorado Springs as well as provided monies for improvements to the shelter facilities at the Zoo.

### Rocky Mountain Water Environment Association

The Rocky Mountain Water Environment Association is a leading organization of dedicated and knowledgeable professionals collectively working together to preserve and enhance the watershed environments originating in the states of Colorado, Wyoming, and New Mexico. The Rocky Mountain Water Environment Association is affiliated with the Water Environment Federation, recognized as the worldwide organization dedicated to the preservation and enhancement of the global water environment.

### Society of Manufacturing Engineers Chapter 354, Electro-Mechanical

The Society of Manufacturing Engineers (SME) is a non-profit professional organization that serves the technical and professional growth of its members by providing a variety of information resources and seeks to increase the image and public awareness of manufacturing. Its membership consists of engineers, scientists, technicians and students engaged in supporting manufacturing. The Front Range Chapter (serving members from Denver to Cheyenne, and east to Greeley) emphasizes electrical and electronics and mechanical manufacturing. The Special Award(s) are given to finalist(s) who's project(s) best exemplify manufacturing principles, processes, or preparation for manufacturing.

### Society of Women Engineers Rocky Mountain Section

The Society of Women Engineers is a nonprofit educational service organization. It 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 education goals. The national organization of SWE was founded in 1950. The Denver Section was chartered in 1954 and renamed the Rocky Mountain Section in 1986. One of SWE's goals is to inform young women, their parents, counselors and the general public of the qualifications and achievements of women engineers and the opportunities open to them. To fulfill this mission, the Rocky Mountain Section provides outreach and career guidance activities in math, science and engineering at the elementary, middle, high school and college levels. In addition to participation in events such as the CSEF, SWE has college scholarship programs at both the local and national levels. To learn more about SWE go to [www.societyofwomenengineers.org](http://www.societyofwomenengineers.org).

### Soil and Water Conservation Society Colorado Chapter

The Soil and Water Conservation Society (SWCS) is dedicated to advancing the science and art of good land and water use world-wide to the end that soil, water, air, wildlife and vegetation in abundance may be used and enjoyed by all mankind.

### United States Air Force ROTC

Air Force ROTC, Detachment 90, at Colorado State University is one of the top ten largest AFROTC units in the nation. The mission of Detachment 90 is to commission highly qualified Air Force officer candidates by recruiting, educating, training and motivating cadets at both CSU and UNC and prepare them to lead in the world's greatest air and space force.

## Special Award Organizations

### United States Army

The US Army and the Fort Collins US Army Recruiting station would like to recognize and congratulate all of the participants involved with the 2005 Colorado State Science Fair. The US Army understands the importance of these events and the effects they can have on an individual's academic record. The categories the US Army has recognized are Engineering, Earth and Environmental Sciences, Health and Behavioral Sciences, Mathematics and Computer Science and Physical Sciences in the Senior Division. The winners in each of the 5 categories will receive a certificate of achievement with a presentation folder. Four of the five category winners will each receive a \$50 US savings bond. The most outstanding of the five will receive a \$100 U.S. savings bond and the Army's silver medallion for science/engineering excellence.

### United States Department of Commerce

The U.S. Department of Commerce, through its Agencies, the National Institute of Standards and Technology, the National Ocean and Atmospheric Administration, and the National Telecommunications and Information Administration, provides a major sponsorship of the Colorado Science and Engineering Fair. The Department research laboratories in Boulder, Colorado, serve as a center around which a major technological complex had developed in the Boulder Area. The Department of Commerce awards an opportunity for summer employment for a graduating student in a research environment with professional scientists. This offer also provides a possibility for future continuing employment with the Department of Commerce.

### United States Geological Survey

The United States Geological Survey (USGS) is a science research organization established by Congress in 1879 and is responsible for providing the nation with reliable and impartial research of earth science problems relevant to society. The USGS is organized into geologic, water resource, mapping, and biological resource divisions. There are over 300 USGS Field Offices in the United States. The USGS produces geologic and topographic maps, databases, and research reports of the earth sciences, all of which are available to the general public.

### United States Navy and Marine Corps

The Office of Naval Research has relentlessly pursued science and technology. Research initiatives undertaken by Naval scientists and engineers have enabled the extremely capable Naval forces we depend upon today. Science is a central aspect of our society and economic productivity. Advancement in science and technology helps us maintain the military advantage that is vital to our national security.

### University of Colorado at Boulder

#### College of Engineering and Applied Sciences

This award is given by the College of Engineering at the University of Colorado at Boulder to recognize outstanding innovation and excellence in science and engineering. At the College of Engineering and Applied Science at the University of Colorado at Boulder, we strive to train engineers who are not only creative and have deep technical knowledge, but who are also broadly educated as citizens and future leaders of the world. The one year scholarships may be renewable, based on the academic performance of the recipient.

### University of Colorado, Health Sciences Center Medical Scientist Training Program

At the University of Colorado School of Medicine, the Medical Scientist Training Program (MSTP) is a seven to eight year program for highly motivated students interested in a career in academic medicine. Our program excels in preparing students for such a career by having students complete a Medical Degree (M.D.) and a Doctorate in Philosophy (Ph.D.). This program in the biomedical sciences combines graduate training in basic research skills with outstanding clinical preparation. To learn more about our program please check us out on the web at <http://www.uchsc.edu/sm/mstp/>. Our program will award a certificate and a \$50 check to each of the top two biomedical sciences projects.

### Visible Productions

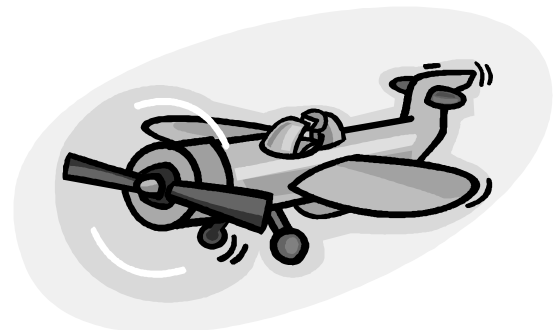
Visible Productions, a multimedia company based in Fort Collins, Colorado, specializes in animations for the medical community. In addition, we build training, educational, and marketing pieces incorporating the animations with video, motion graphics, and 2D animations for CD, DVD and Web-based programs. Our artists and animators, with over 100 years of combined medical and art training and experience, bring their expertise to each project by fusing art and science to help communicate difficult topics into easy-to-understand messages.

### Yale Science and Engineering Association

Yale University is an outstanding educator in the sciences and engineering. The Yale Science and Engineering Award is given to a 11th grade student for the most outstanding exhibit at a state or regional high school Science Fair in Computer Science, Engineering, Physics, or Chemistry. The Award consists of the YSEA medal and a formal certificate. Each winner also receives a brochure about undergraduate studies in Engineering at Yale. The list of winners is forwarded to the Yale Admissions Office.

### Zonta Club of Boulder County

Zonta International, founded in 1919, is an organization of executive and professional women. Amelia Earhart was one of its most famous members, and this award is given in her memory.



## Colorado State Science Fair - Pioneers of Science Awards

<b>Category</b>	<b>Sponsor</b>	<b>Pioneer</b>
<b><i>Behavioral &amp; Social Sciences</i></b>	<b><i>John Parker</i></b>	<b><i>Abraham Maslow</i></b>
Abraham Maslow (1908 – 1970) is best known for the concept of self-actualization and his famous hierarchy of needs. Abraham is an inspirational figure in personality theories and was one of the pioneers in the movement to bring human beings (vs. dogs and rats) back into psychology and the person back into personality.		
<b><i>Botany</i></b>	<b><i>David Holm</i></b>	<b><i>Luther Burbank</i></b>
Luther Burbank (1849 – 1926) was widely known as a horticulturist, botanist, and scientist. Luther only had an elementary education, but he was an avid reader. Luther 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 as nursery garden, greenhouse and experimental farms in Santa Rosa, California that have become famous throughout the world.		
<b><i>Chemistry</i></b>	<b><i>Bonnie Hames</i></b>	<b><i>Marie Curie</i></b>
Marie Curie (1867-1934) was a French chemists and physicist who shared the Noble Prize in physics with her husband, Pierre (1859-1906) in 1903 for their work in radioactivity. Marie went on to receive a second Nobel Prize in Chemistry in 1911 for her continued work in isolating radioactive isotopes, specifically in isolating the element radium. Marie thus became the first person to ever be awarded a second Nobel Prize.		
<b><i>Earth &amp; Space Sciences</i></b>	<b><i>Sam Bartlett</i></b>	<b><i>Alfred Lothar Wegner</i></b>
Alfred Lothar Wegner (1880-1930) was a German geologist, geophysicist, meteorologist and arctic explorer who is known for the theory of continental drift. Alfred was the first to investigate in detail the idea of continental drift and published his findings in 1915. However his work was widely criticized and it was not until the late 1960s that this theory was accepted as the basis for plate tectonics.		
<b><i>Engineering</i></b>	<b><i>Trudy Forsyth</i></b>	<b><i>James Buchanan Eads</i></b>
James Buchanan Eads (1820-1887) was an American engineer and inventor. James invented the diving bell in 1841 for engineering work on the Mississippi River. He designed and built the first major bridge spanning the mighty Mississippi River and engineered a system of jetties at the mouth of the Mississippi River to prevent silting of the mouth with the ultimate goal of making New Orleans a major sea port. James Buchanan also constructed a fleet of ironclads for the Union navy during the Civil War.		
<b><i>Environmental Sciences</i></b>	<b><i>Alfred Bedard</i></b>	<b><i>Rachel Louise Carson</i></b>
Rachel Louise Carson (1907- ) 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, <i>Silent Spring</i> is a provocative study of the dangers involved in the use of insecticides and is wildly believed to have initiated the environmental movement in the United States.		
<b><i>Mathematics &amp; Computer Sciences</i></b>	<b><i>Ryan Patterson</i></b>	<b><i>Charles Babbage</i></b>
Charles Babbage (1792-1871) was a British mathematician and inventor who designed and built mechanical computing machines on the principles that anticipated the modern computer. Charles Babbage excelled in a variety of scientific and philosophical subjects through his present-day reputation rests largely on the invention and design of his vast mechanical calculating engines, causing him to frequently be referred to as the “father of the computer.”		
<b><i>Medicine &amp; Health</i></b>	<b><i>Jody Oaks</i></b>	<b><i>Hippocrates</i></b>
Hippocrates (460-377 B.C.) was a Greek physician known as “the father of medicine.” Hippocrates’ work was an enormous importance in separating medicine from superstition. Hippocrates recognized the link between environment and disease was considered one of the most important steps in the development of modern medicine. The Hippocratic oath, which all doctors ascribe to, is named in honor of Hippocrates and his teachings.		
<b><i>Microbiology</i></b>	<b><i>Robert Morrow</i></b>	<b><i>Jonas Edward Salk</i></b>
Jonas Edward Salk (1914- ) was an American microbiologist who was an authority on virus diseases. Jonas is best known for his development of the 1 <sup>st</sup> polio vaccine. The <i>Salk vaccine</i> is made by cultivating three strains of the poliovirus separately in monkey tissue.		
<b><i>Physics</i></b>	<b><i>Gina Holland</i></b>	<b><i>Albert Einstein</i></b>
Albert Einstein (1879-1955) was a professor of theoretical physics who is best known for his general theory of relativity and his contributions to quantum physics. Einstein received the Noble Prize for physics in 1921 for his work in theoretical physics, most notably on the photoelectric effects. He fled Nazi Germany in 1933 and became an American Citizen. Albert Einstein was an ardent pacifist and was active in the cause of world peace.		
<b><i>Zoology</i></b>	<b><i>Elemer Bernath</i></b>	<b><i>Georges LCF Cuvier</i></b>
Georges Leopold Chretien Fredric Cuvier (1769-1832) was a French naturalist was a pioneer in the science of comparative anatomy. Georges 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 base on skeletal remains greatly advanced the science of paleontology.		