



*San Luis Valley Regional  
Science Fair, Inc.  
2015 Annual Report*

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## San Luis Valley Regional Science Fair 2015 Annual Report

From start to finish, and at all levels of participation, the science fair experience is one not only of competition but also of camaraderie, creativity, cooperation, and education. This is the essence of the San Luis Valley Regional Science Fair.

Established in 1949, the San Luis Valley Regional Science Fair, Inc. is a private, non-profit organization, which holds a regional competition each year. More than 800 students from the San Luis Valley and Chaffee County, participate in Science Fair at their school. The purpose of the fair is to stimulate student interest and encourage them in science and engineering by recognition of their abilities and achievements.

This year's winners were chosen from among 374 exhibits presented by 423 finalists. These finalists represented 13 public school districts, home-schoolers from the San Luis Valley, students from Salida, and private schools. More than 250 judges, including professional scientists, engineers, medical professionals, mathematicians, and advanced Adams State University students, interview the students and evaluate their projects before selecting the winners. In addition, there were also businesses, professional societies, and government agencies that provide their own representatives to judge exhibits based on their criteria. These judges confer the Special Awards, including scholarships, summer internships, cash, medals, and scientific calculators, which represents an aspect of the bestowing organization. Over 1500 people attended the Awards Ceremony this year held in the Plachy Hall gym at Adams State University.

In addition, receiving the rare opportunity to speak with working scientists, SLV Regional Science Fair students participate in three grade-level divisions for the grand awards in a number of categories: Behavioral and Social Science, Biomedical Science, Botany, Chemistry, Consumer Science, Earth and Space Science, Engineering, Environmental Science, Mathematics and Computer Science, Physics and Zoology.

Participating in Science Fair is one of the few activities that expects students to integrate virtually all areas of their academic development. The use the library for literature reviews, history and research; the students execute experimentation and generally complete mathematical analysis; they write reports; they utilize artistic styles in the preparation of their presentation boards; and they are expected to orally present their projects to the judges. Awards are also given for technical writing, oratory skills, display, originality, and overall projects. Winning Junior and Senior division projects are awarded trips to the Colorado Science & Engineering Fair, which is held in Fort Collins, Colorado. In addition, the two senior division students with outstanding overall projects are awarded all-expense paid trip to the Intel International Science & Engineering Fair. In 2015 the Intel International Fair was held in Pittsburg, Pennsylvania, where Colorado students competed with their peers from more than 75 countries, regions and territories to showcase their independent research projects.

Many educational experiences are made available to students who participate in the San Luis Valley Regional Science Fair. Recent programs have included Science From CU; the Alamogordo Space Center; Mobil Ed Productions; Physics is Fun; the Denver Museum of Nature and Science; Visible Productions and Mike Mullane (Ret.), NASA Astronaut. Last year's program, "Habitat Hike", was presented by the Cheyenne Mountain Zoo. The students traveled to locations near and far as they explored various habitats animals call home. Students discussed what each habitat provided and animals that lived there, as well as the important roles of wildlife. Adams State University, Title 5, STEM sponsored the educational program for the students

The judges' interviews and the educational programs allow the students to interact with professional scientists and engineers and with each other. Many students have said that having the chance to meet and speak with their peers about their science projects is the most beneficial aspect of the SLV Regional Science Fair.

Scholarships from Adams State University and other organizations are also presented. Adams State University awards \$3,000 in scholarships for outstanding science fair participants who have a desire to further their education at ASU. The San Luis Valley Research Center – Colorado State University, Department of Horticulture and Landscape Architecture - offers a \$900 summer internship to a San Luis Valley student, in grades eight through twelve, who shows excellence in the field of potato research, from the Botany category. A new family scholarship was established a couple of years ago that is awarded to a graduating senior student that will be attending Colorado State University and majoring in a field of science.

The San Luis Valley Regional Science Fair is devoted to increasing the academic involvement and excellence between all fourth through twelfth grade students in our region. Student winners from each category are presented monetary awards. There are also many local and national awards that are presented to deserving student participants. With the help of our local sponsors and contributors, the San Luis Valley Regional Science Fair is able to present \$26,000 (either in monetary awards, scholarships, all-expense paid trips to the international fair or material awards) to the outstanding students of our region.

## Organization

The San Luis Valley Regional Science Fair would not be possible without the dedication and tremendous efforts of many committed individuals, as well as public and private organizations, school districts, Adams State University, government agencies, corporations, professional associations, and local businesses. These groups sustain the Fair through their financial and resource support, special awards, and most importantly, through providing dedicated volunteers to serve on the Fair's working committees and/or Board of Directors. Many of these businesses not only make monetary donations, but also allow their employees to serve as judges for the San Luis Valley Regional Science Fair. Prior to this regional event, many local school fairs are conducted throughout the region. Each of these fairs is supported by hardworking and dedicated educators at the local school level. Before a student's project is accepted at the Regional Fair, it requires the encouragement and support from individual teachers, science fair coordinators, and parents to help the student see their project from conception to the finished exhibit. The success of the San Luis Valley Regional Science Fair is dependent on all of these dedicated individuals.

To organize and stage the Fair every year requires a great effort by many people, but it also offers many personal challenges and rewards. To witness the level of achievement, pride, and excitement of these bright young people in their scientific endeavors is one of the rewards that all volunteers of the Fair share. It also speaks of the high level of students' aptitude and enthusiasm for science in the San Luis Valley.

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*"Pharmacoenvironmentology – Developing a Baseline for PPCP Contaminant Levels at the Monte Vista Wildlife Refuge  
My name is Hannah Fischer and I recently went to Pittsburgh, Pennsylvania for the International Science and Engineering Fair (ISEF) May 10-15, 2015. I attended as an alternate from our regional fair. There were over 1700 students representing 78 countries who came to compete on an international level. It was amazing to meet and interact with people that live half way across the world! It opened my eyes to the capabilities and possibilities of people no matter what race, religion, or place they live. I learned new things and ideas from each project that I read, and I gained new insight to problems affecting other areas of our world. I met new people and gained new friends. I had a wonderful time doing it all! It is an extraordinary experience and I hope to attend again. I recommend attending this event , it is truly a wonderful, educational, and inspiring experience.*

**-Hannah Fischer, Sierra Grand High School, International ISEF Attendee 2015**

## Mission Statement

The San Luis Valley Regional Science Fair is an organization that:

- Honors winners from local San Luis Valley school fairs at an annual Regional Science Fair
- Sends finalists from the Regional Science Fair to the Colorado Science and Engineering Fair (CSEF)
- Provides two overall winners at the Regional Science Fair with an all expense paid trip to participate in the Intel International Science and Engineering Fair (ISEF)
- Encourages students to pursue careers in science, technology, mathematics, or engineering
- Provides a forum for developing academic skills, such as conducting an independent scientific investigation, writing a research paper, speaking, preparing an organized display, and becoming familiar with the scientific method.

The San Luis Valley Regional Science Fair supports local school fairs by:

- Providing a forum where local fairs can influence policies, rules, and by-laws of the San Luis Valley Regional Science Fair
- Providing rules and requirements for participation in all fairs – Regional, State, and International.
- Coordinate mentors
- Provides judges and critique at local school fairs.

## Impact Statement

The following represent some of the impacts the San Luis Valley Regional Fair has had on the San Luis Valley:

- Awareness, appreciation, and recognition of the importance of science in our society, livelihoods, academic achievement and lifelong success
- An increased awareness of academic competition and the importance of science among Valley educators
- An increased quality of educational activities in all schools in the region
- An increased usage of libraries and the Internet
- An increased exposure to robotics, holography, pathology, space art, moon geology, and the scientific method to the general public.

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*“Fields for Flight: Effects of Magnetic Fields on Butterfly Navigation”*

*My Experience at ISEF was a once in a lifetime experience; I will most likely remember it for a long time to come. If I were to use one word to describe the experience, I would say it was amazing, it allowed me to express my scientific side to people with the same interest. I have always loved science ever since I understood what science was exactly, and science fair allowed me to show my love for science outside of an ordinary classroom. Of course, what I loved about ISEF is that, in my eyes, it's not just about science, even though that is why everyone is gathered there; it's about meeting people of the same interest, it shows that people can band together and accomplish great things (no matter their nationality) if people have the same interest. I wouldn't trade this experience for the world and ISEF showed me that I am not the only one with an interest and hunger to explore the scientific field.*

**-Jeremiah Etter, Monte Vista High School, International ISEF Attendee 2015**

## **Top Winners of the 2015 San Luis Valley Regional Science Fair**

### **COLORADO AWARD WINNERS**

The following students were chosen to represent the  
San Luis Valley Regional Science  
Fair at the Colorado State Science Fair:

#### **Senior Division**

Jeremiah Etter - Monte Vista High School	Hannah Fischer - Sierra Grande High School
Colby W. Self - Monte Vista High School	Shelly Steinert - Sargent High School
Shlok Rathi - Alamosa High School	Syree Lou Gunnels - Sargent High School
Mary Hood - Sargent High School	Kelsey Lindbloom - Salida High School
Carmen Ruggles - Center High School	Leighton Burt - Sargent High School
Cassidy Plane - Sargent High School	

#### **Junior Division**

Sara Nehring - Monte Vista Middle School	Ethan Gearhart - Sargent Middle School
Molly Nehring - Monte Vista Middle School	Elora Smith - Sargent Middle School
Alyssa Rawinski - Monte Vista Middle School	Clay Kimberling - Sargent Middle School
Eric Lorenz - Saint Peter's Lutheran MS	Nicole Miller - Ortega Middle School
Rachel Sucharski - Ortega Middle School	Parker Randolph - Monte Vista Middle School
Trevor Paskett - Sargent Middle School	Greg Watts - Sargent Middle School
Adrianna Mendoza - Ortega Middle School	

### **INTEL/ISEF WINNERS**

The following two students were chosen to represent the San Luis Valley Regional Science Fair at the  
Intel International Science and Engineering Fair:

Jeremiah Etter - Monte Vista High School	Mary Hood - Sargent High School
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#### **Alternate**

Hannah Fischer - Sierra Grande High School

#### **Junior Observer Award**

Alyssa Rawinski - Monte Vista Middle School

### **TEACHER AWARDS**

The following teachers were chosen to attend the  
Intel International Science and Engineering Fair:

Loree Harvey - Monte Vista High School
Matt Relyea - Sargent High School

### **SCHOOL AWARDS**

The following School Awards are based on the total tabulations of all Grand  
Awards received by their students:

Small Elementary School	Del Norte Elementary School
Large Elementary School	Bill Metz Elementary School
Small Middle School	Sargent Middle School
Large Middle School	Monte Vista Middle School
Small High School	Center High School
Large High School	Monte Vista High School

## WORKING COMMITTEE MEMBERS

Fair Director: Lucy Adams

The Fair Director is actively involved in all working committees hereto mentioned and is also an ex-officio member of the SLV Regional Science Fair Board of Directors.

Awards Ceremony: SLV Regional Science Fair Board of Directors  
Joy DiCamillo  
Judy Prester  
Chad Chavez  
Tayler Rocha

Display and Safety: Dr. Curtis Crawford

Finance: SLV Regional Science Fair Board of Directors

Publishing: Joy DiCamillo and Judy Prester

Registration: SLV Regional Science Fair Board of Directors

Regular Judging: Diana Jones – Judge Coordinator

Room Setup: SLV Regional Science Fair Board of Directors  
Monte Vista High School  
MESA/Science Club  
Parent Volunteers  
ASU Facilities

Scientific Review Committee: Dr. Larry Sveum – Chair  
Curtis Crawford- DVM  
Ms. Jody Oaks  
Mr. Doug Steward  
Dr. Jeff Elison  
Ms. Loree Harvey

Website Committee: Julie Messick  
Chad Chavez

(Note: The Scientific Review Committee must consist of a minimum of three persons. Additional members are recommended to avoid conflict of interest. This committee must include: a biomedical scientist (Ph.D., MD, DDS, or D.O.), a science teacher and at least one other member. The committee examines projects for the following: evidence of library search; evidence of proper supervision; use of accepted research techniques; completed forms; signatures and dates; humane treatment of animals; compliance with rules and laws governing human and animal research; appropriate use of recombinant DNA, pathogenic organisms, controlled substances, tissues and hazardous substances and devices; and appropriate documents and substantial expansion for continuation projects.)

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## **Highlights of the San Luis Valley Regional Science Fair for 2015-2016**

Sixty-six years of Science Fair was celebrated in the San Luis Valley this past year. What an honorable history for an organization! Our Science Fair is one of the oldest in the country!

Our fair was again successful, thanks to wonderful sponsorship that allowed a middle school student to attend the Intel International Science and Engineering Fair, as a Student Observer.

Again this past year, SLVRSF added new contributors to the listing.

The 2015 Regional Fair had a total of 374 projects with 423 students participating.

24 SLV students attended the Colorado State Science and Engineering Fair. These 24 students received a total of 54 awards, plus two teacher awards were presented to valley teachers.

Of all the San Luis Valley projects entered at CSEF, 79.2% won an award. San Luis Valley students won 12.3% of all total special awards given. The following are examples:

- 16 of those students placed in the grand awards, totaling \$1025.
- There were 21 different special awards given to our students, which had a total monetary amount of \$2200 and included other prizes.
- Adams State University awarded 2 scholarships to Valley students, which is equivalent to one-year tuition and fees, (approximately \$15,000)
- One student was awarded a \$1,000 renewable undergraduate scholarship from Colorado School of Mines, renewable for up to 3 additional years.
- One student was awarded two \$1,000 scholarships to attend CSU -Ft. Collins, renewable for up to 3 additional years.
- Three students were awarded a four year scholarship to attend the University of Colorado, Boulder.
- Three middle school students were nominated to participate in the Broadcom Masters program.
- Mr. Diego Martinez, math and science teacher at Center High School, received the Lockheed Martin, CSEF Teacher of the Year Award. The \$3000.00 award is to be used for classroom equipment.
- One of our local students won Best CSEF project; as a result of this, our fair was then asked to send our alternate to Intel ISEF. We registered her sibling as a student observer, so this year we had 5 local students in attendance at the Intel ISEF.

Board member Jody Oaks and Fair Director Lucy Adams were members of the Display and Safety Committee at the Intel International Science and Engineering Fair held in Pittsburg, PA.

The biggest accomplishment this year is our website. The site was designed by our work study student, Chad Chavez, and a board member. We are now able to receive online student registrations for the fair.

Also on the website is a judge registration that is going to be used this year. Other information listed on the site includes: the SLV Regional Science Fair Board of Directors, Mission Statement, History, and other information.

New contributors and visitors to the site are able to view information on how to donate/contribute to the fair. Additional support to the SLV Regional Science Fair can be given by using GoodSearch, GoodShop, and AmazonSmiles. Links may be found by visiting our website at:

**SLVRSF.org**



## Another great year for the San Luis Valley Regional Science Fair!

*“SMART Cane: A Technology Integrated Device to Reduce the Fall Susceptibility of the Elderly”*

*Attending the ISEFS in 2014 and 2015 have been some of the most incredible experiences of my life. My first ISEF left me open-mouthed. It was truly inspiring to see so much advancement to science in such a small space, and by so young of people. I most enjoyed the keynote speaker and the Universal Studios night.*

*By the time ISEF 2015 rolled around, I had my footing better. With the initial shock and awe gone, I was able to dig deeper into the ISEF experience. Particularly, I made a greater effort to actually communicate with kids from other countries, rather than just horde their pins. It is truly inspiring to meet so many kids from so many different countries, in peace, in the name of science. This was probably my favorite part of ISEF 2015, along with kayaking the Ohio and trying the motion-sensor video games. While I disappointingly did not place, the conversations and opportunities ISEF presented me for the development of my project were incredible.*

*In June I was invited by one of the state science fair award sponsors to attend one of their “Inventor’s Round Table” meetings and present my project. There, I met a man who owns a rapid prototyping company, and we are now working on 3D printing a sleeker prototype of my cane in anticipation of presenting it to potential licensers.*

*Also in June, I attended a National FBLA conference in Chicago, and had the opportunity to partake in a leadership course called “Business Incubator.” At this course, more than 200 high school students formed teams, created a product, and pitched it to fellow students and “sharks” in a mock shark tank. My team formed our business “Freedom Cane” around my science fair project, and walked away with the top prize of \$1000.*

*Finally, I was invited by Popular Science to do a camera shoot about my project for their video series entitled “Generation Make,” which is intended to encourage young students to become more interested in the STEM fields. This opportunity came after they read an article about my project published in the SSP blog during ISEF 2015. I completed the shoot in early August, and it was an incredible experience. The video is amazing, and they are expecting to post it on their website within the next several weeks.*

*Overall, I am extremely excited at the places my project is going. I am forever in debt to science fair for making this dream a reality. “*

### **-Mary Hood – Sargent High School, 2014 International ISEF attendee; 2015 Colorado State Science Fair International ISEF Attendee**

*“Do Certain Traits, Skills, or Characteristics Affect Bird Estimating and Can a Computer Model Improve Estimating Accuracy? You Can Count On It!”*

*This year’s Intel International Science and Engineering Fair in Pittsburg, Pennsylvania was just incredible! I went as the student observer for the San Luis Valley Regional Science Fair, and had an amazing time! It was unbelievable how many countries, languages, and students were represented there. I was very fortunate to be able to experience that amazing week at the Intel ISEF.*

*To start, I really enjoyed the opening ceremony! I really appreciated all presentations from the guest speakers. It was very interesting to hear what they had to say about their careers and ideas. Additionally, the Roll Call was very entertaining! I loved seeing all of the different country representatives come up to stage with their posters! But, of course, the most exciting part was the X-Pogo Stunt Men! They performed incredible tricks, including front flips and back flips, all while jumping on pogo sticks!*

*The most inspiring part of the trip though, was listening to the Nobel Laureates speak. They had great advice on becoming successful, working hard, and life in general. It was wonderful to hear geniuses talking to me, telling me to never give up, work hard and do my best! At the end of the panel, I actually got to meet H. Robert Horvitz, Nobel Prize winner in Physiology and Medicine!*

*However, I must say, my favorite part about the week was the pin exchange! I met so many people from so many extraordinary countries! I exchanged pins with students from Australia, China, Ireland, South Korea, Canada, Brazil and many others! What truly amazed me, was that almost everyone I talked to knew how to say “Hello,” and “Where are you from?” in English! All in all, it was a terrific night!*

*Overall, I had a remarkable week in Pittsburg at the Intel ISEF! It was an experience that will remain with me my whole life! I am so thankful for the opportunity I was given to go to the International Science and Engineering Fair in 2015, I would like to thank everyone who helped me get there!*

### **-Alyssa Rawinski, Monte Vista Jr High School, Intel/ISEF Student Observer 2014**

*“Fueling the Future Phasae 4:Constructing an Aqueous Vehicle Powered by a Microbial Fuel Cell”*

*I started participating in San Luis Valley Regional Science Fair my fifth grade year. I'd loved science my whole life and it was an eye-opening experience, for the first time, to be around adults and other youth who shared my love of science. I have continued in science fair from fifth grade on, including this year, my senior year in high school. For the past four years, my projects have focused on the advancement of microbial fuel cell technology and integration of this technology into the real world. I am currently researching how microbial fuel cells can be used as biosensors.*

*Beginning in seventh grade and to the present, I have been selected to participate in Colorado Science and Engineering Fair. Through CSEF, opportunities have been presented to me that I could never have imagined. I was selected to present at Colorado Rural Electric Association Energy Innovations Summit and Spark! Colorado on the Cutting Edge of Energy Innovation. At these events, I met people who encouraged my research and pushed me to try harder in my scientific endeavors. My sophomore year, I was given the chance to compete for a place at the Frontiers of Science Institute. I was selected for this event and it changed my life. Because of my achievements at science fair, I performed graduate level research and met people with whom I am still friends.*

*San Luis Valley Regional Science Fair initiated its student observer program for the International Science and Engineering Fair in 2011 and I was selected as the first student observer. At ISEF, I met young scientists from around the world. It was an incredible experience to interact with people from all walks of life who shared a common love of the STEM disciplines. Since attending ISEF as a seventh grader, it has been my goal to attend once again as a high school student.*

*When people ask me how I have become the person I am today, I always answer science fair. Science fair has given me experiences, self-confidence, and academic rigor that nothing else in my life could. Science fair is the reason I stayed in high school. It has given me goals for which to strive. I would not be me without science fair.*

**-Kelsey Lindbloom Salida High School, CSEF Attendee 2012 – 2015, Intel/ISEF Student Observer 2011**

*My name is Keaton Fischer, a 7th grader from Sierra Grande School. I had the opportunity to attend ISEF as a student observer. I was really amazed by the amount of students and projects at this event, there were 2 floors with projects displayed. I met students and learned new things at the workshops I attended. There was a volunteer day, where myself and other student observers helped with school group tours that came in to ISEF for the day. I enjoyed my visit to ISEF and I look forward to attending ISEF as a participant in high school.*

**-Keaton Fischer, Sierra Grand Middle School, Intel/ISEF Student Observer 2015**

