

2017 Wyoming State Science Fair Special Awards

Air & Waste Management Association, Rocky Mountain Section presents awards to promote responsible application of the environmental sciences.

Senior Division:

1st Place - Dante Sylvester from Greybull, WY

2nd Place - Eduardo Burgos from Greybull, WY

3rd Place - Sierra Spears from Lingle, WY

Junior Division:

1st Place - Ryan Edinger from Lander, WY

2nd Place - Torrey Sanford from Greybull, WY

3rd Place - Weston Adams from Greybull, WY

The American Institute for Aeronautics and Astronautics (AIAA), Rocky Mountain Section is proud to be a supporter of the Wyoming State Science Fair. AIAA is a group of engineers, scientists, other professionals, educators, and students who share a passion for the aerospace engineering field. AIAA is dedicated to igniting and celebrating aerospace ingenuity and collaboration. Our work fuels the collective human drive to explore, create, and be part of something bigger than ourselves. It's part of AIAA member's shared commitment to inspire innovation and drive technological progress in the U.S. and throughout the world. Further information can be found at www.aiaa-rm.org. Award winners receive a certificate, an Arduino Kit and a 1-year student membership to the AIAA.

Excellence in Aeronautics & Astronautics Award Senior Division Award: Qingfeng Li from Laramie, WY

Excellence in Aeronautics & Astronautics Award Junior Division Awards:

1st Place – Charles Koval from Sheridan, WY

2nd Place – Tristan Smith from Saratoga, WY

The American Meteorological Society is the nation's premier scientific and professional organization promoting and disseminating information about the atmospheric, oceanic, and hydrologic sciences. AMS recognizes four senior high school students for their creative scientific endeavors in the areas of atmospheric and related oceanic and hydrologic sciences. Awardees received a certificate, a calculator (provided by the UW Science & Mathematics Teaching Center), and their names may be published in *the*

Bulletin of the American Meteorological Society.

The awardees are:

Alyssa Umphlett from Newcastle, WY

Evan Anderson from Cheyenne, WY

Trent Foster from Sheridan, WY

Weston Adams from Greybull, WY

The American Psychological Association Education Directorate is the largest scientific and professional organization representing psychology in the United States. They recognize two students who have conducted outstanding research in psychological science.

The awardees are:

Riley Schiller and Jace Bohlman from Powell, WY

Fiachra Rottinghaus from Lander, WY

The **Anne Wolff Science Special Award** is presented in memory of Anne Wolff, LCCC faculty, former director of the Southeast Regional Science Fair, and life-long supporter of science fairs. The award recognizes a junior or senior division project that demonstrates originality, creative thinking, resourcefulness, and commendable scientific achievement. The winner receives a certificate and \$150.

The **Anne Wolff Science Special Award** goes to: Bree Coxbill from Torrington, WY

The ASM Materials Education Foundation recognizes the best materials engineering project at the Wyoming State Science Fair. Selection is based on use of materials-related concepts, demonstration of structure-processing-properties-performance relationships, presentation, understanding of the scientific method, and project display aesthetics. A preliminary certificate is presented this morning. A formal award certificate and a medallion will be mailed at a later date.

The awardee is: Qingfeng Li of Laramie, WY

The **Association for Women Geoscientists** is an international organization devoted to enhancing the quality and level of participation of women in geosciences and to introduce girls and young women to geoscience careers. The Association of Women Geoscientists awards certificates to female students

whose projects exemplify high standards of innovativeness and scientific excellence in the geosciences.

Junior Division: Kaitlyn Vigil, Ian Engling, and Shaeleigh Evans from Wheatland, WY

Senior Division: Sierra Spears from Lingle, WY

ASU Walton Sustainability Solutions Initiative Award recognizes two senior high school students who seek innovative solutions to humanity's most challenging problems. The winners will receive a certificate and the opportunity to enter competition for a Grand Prize trip to Arizona for the 2018 Sustainability Solutions Festival.

The winners of this award are:

Dante Sylvester of Greybull, WY

Vincent Leahy of Green River, WY

Three projects from this fair have been nominated to compete in the **GENIUS Olympiad competition at SUNY Oswego in June 2017**, an international high school project competition focusing on environmental issues.

Nominees:

Dante Sylvester from Greybull, WY

Sierra Spears from Lingle, WY

Jennel Mead from Cheyenne, WY

The **Institute of Electrical and Electronics Engineers (IEEE)** recognizes the best projects in electronics, power, communications, microcomputer applications, robotics, sensors or bioengineering. The winners each receive a \$100 gift card.

The IEEE Outstanding Junior Division Project: Dmitry Weakly from Laramie, WY

The IEEE Outstanding Senior Division Project: Qingfeng Li from Laramie, WY

Intel Corporation recognizes the importance of encouraging increased participation in computer science, one of today's fastest growing fields and an important source of innovation for the 21st century. The **Intel Excellence in Computer Science Award** goes to the best computer science project at the fair.

This \$200 award and certificate goes to: Qingfeng Li from Laramie, WY

The **Laramie Rivers Conservation District** recognizes exemplary projects that address natural resource conservation issues. Each winner receives a certificate and \$100.

The five recipients of the Laramie Rivers Conservation District awards are:

Mia Copeland from Lander, WY

Ryan Edinger from Lander, WY

Courtney Rainbolt from Newcastle, WY

Dante Sylvester from Greybull, WY

Makyela Sorensen from Greybull, WY

NASA recognizes two projects that best demonstrate insight into Earth's interconnected systems (atmosphere, hydrosphere, cryosphere, and biosphere). Winners of the **NASA Earth System Science Award** receive a certificate and a calculator (provided by the UW Science & Mathematics Teaching Center).

NASA Earth System Science Awards go to:

Sierra Lloyd from Lander, WY

Juliann Healey from Cheyenne, WY

National Center for Atmospheric Research and the Computational and Informational Systems Laboratory Special Awards (NCAR) are presented to projects displaying excellence in the Computer Science or Mathematics, and Geoscience categories in both junior and senior divisions. Each winner receives a certificate of achievement, medal and a cash prize of \$50 for junior division and \$100 for senior division.

The winner of the Computer Science/Mathematics awards is:

1st Place Junior - Gabriel Harris from Lander, WY

The winners of the Geoscience awards are:

1st Place Junior Division - Nicholas Gutierrez from Casper, WY

1st Place Co-Winners Senior Division --

Jennel Mead from Cheyenne, WY

Eduardo Burgos from Greybull, WY

The mission of the **National Oceanic and Atmospheric Administration (NOAA)** is “to understand and predict changes in climate, weather, oceans and coasts, to share that knowledge with others, and To conserve and manage coastal and marine ecosystems and resources.” NOAA presents a certificate and medallion to two individuals whose research emphasizes the NOAA mission.

These winning individuals are:

Dalton Peterson from Encampment, WY

Sierra Spears from Lingle, WY

In an ongoing effort to promote the importance of studies of Wyoming ecosystems and studies of the ecological impacts of development, the **Powder River Basin Resource Council** presents two sets of awards. Each recipient has earned a free membership to the Powder River Basin Resource Council.

Powder River Basin Resource Council Award for Energy Conservation and Renewable Energy is a monetary award for studies of renewable energy, energy conservation and energy efficiency.

The recipient of this \$250 award is: Caitlin Huang of Laramie, WY

The **Bill Barlow Memorial Youth in Conservation Awards** at the Wyoming State Science Fair are presented in the memory of a great rancher and conservationist who was also a founding member of the Powder River Basin Resource Council -- Bill Barlow. These awards honors students whose science fair projects study Wyoming ecosystems, consider impacts of development on the natural environment or our agricultural heritage, or explore innovative energy alternatives.

These \$250 awards go to:

Theresa Bautz from Lander, WY

Roxanne Rogers and Katie Labuda from Pinedale, WY

Ricoh Sustainable Development Certificates go to projects that have principles and technical innovations that offer the greatest potential for increasing our ability to grow environmentally friendly and socially responsible businesses.

The awardees are:

Oscar Martinez of Greybull, WY

Autumn Lloyd of Lander, WY

Rocky Mountain Water Environmental Association Awards presents two awards each, first and second place in the junior and senior divisions to water-related projects. First Place winners in each division receive a certificate and \$400 cash award. Second Place projects in each division receive a certificate and a \$200 award.

Junior Division - 1st place: Mia Beachler from Cody, WY

Senior Division - 1st Place: Shelby Stith from Newcastle, WY

Senior division projects are eligible to participate in the **Stockholm Junior Prize**. The **Stockholm Junior Water Prize** recognizes outstanding water-related research done at the high school level.

The **Society for In Vitro Biology** presents a certificate to the most outstanding 11th grade student whose research is in plant or animal in vitro biology or tissue culture.

This year's recipient is: Bayley Burns from Greybull, WY

The United States Air Force presents four awards to projects that offer Air Force applicability. Each winner receives an over-the-shoulder sling pack, power bank charger, dog tag USB flash memory drive, and a dual USB car charger.

The award winners are:

Charles Koval from Sheridan, WY

Thomas Whaley from Greybull, WY

Anna Savage from Greybull, WY

Alyssa Umphlett from Newcastle, WY

The U.S. Metric Association recognizes two students whose projects involved a significant amount of quantitative measurement and which best use the SI metric system for those measurements. Winners receive a certificate, and a calculator (provided by the UW Science & Mathematics Teaching Center).

The recipients of this award are:

Kialee Hansen from Pinedale, WY

Sierra Spears from Lingle, WY

The **University of Wyoming Department of Anthropology** offers two \$50 awards to students whose projects address a topic of interest and relevance to one of the major anthropological research fields of archaeology, cultural anthropology, linguistic anthropology, or biological anthropology.

Junior Division: Brie Benasky from Greybull, WY

Senior Division: Caitlin Huang from Laramie, WY

The University of Wyoming Cybersecurity Education and Research (CEDAR) group, a part of the Computer Science Department within the UW College of Engineering and Applied Sciences, is pleased to award two projects that exemplify the use or potential use of computer science and/or computational thinking. Award winners receive mentorship opportunities to enhance or develop computer science components of their current or future science fair projects. Additionally, the award also includes support, in the form of one-on-one computer science professional development and/or classroom visits for a teacher of the student's choice.

Junior Division: Kyland Fuller from Ft. Laramie, WY

Senior Division: Adriana Ruby and Destiny Reed from Big Piney, WY

The University of Wyoming English Department gives a \$100 award to recognize the project that most effectively uses communication techniques to tell the story of the science being done. From the judges, "We acknowledge this project based on its balance of text and visuals, as well as overall readability. Thank you for your excellent work, and congratulations, Gabriel!"

The awardee is: Gabriel Harris from Lander, WY

The University of Wyoming Department of Geology & Geophysics recognizes three projects in the geosciences with a certificate and a monetary prize.

1st place: Sierra Spears from Lingle, WY

2nd place: Dante Sylvester from Greybull, WY

3rd place: Juliann Healey from Cheyenne, WY

University of Wyoming Geology Museum award goes to a student whose project enhances our knowledge and understanding of Wyoming's geology and paleontology. The winner receives a 3D printed model of a fossil in the UW Geology Museum Collections. This year's fossil is a skull of an Oligocene Camelid called a mercoidodontidae (<https://uwdigital.uwyo.edu/islandora/object/wyu%3A169019>).

The winner is: Shayanne Evans from Wheatland, WY

University of Wyoming Department of Statistics recognizes 1st through 3rd places in both Junior and Senior Divisions. First place will receive \$50, second place \$35, and \$25 for third place.

Junior division awards go to:

1st place: Carlos Munoz & Nathan Maxfield from Marbleton, WY

2nd place: Brie Benasky from Greybull, WY

3rd place: Mia Copeland from Lander, WY

The senior division awards go to:

1st place: Fiachra Rottinghaus from Lander, WY

2nd place: Eduardo Burgos from Greybull, WY

3rd place: Sierra Spears from Lingle, WY

The Wyoming Center for Environmental Hydrology & Geophysics (WYCEHG) presents certificates and cash awards to outstanding projects that relate to hydrology, geology, and water.

Junior Division: Juliann Healey from Cheyenne, WY

Senior Division- Kellar Bock from Newcastle, WY

In an ongoing effort to promote wise use of mined minerals, the **Wyoming Mining Association** awards one \$500 educational scholarship to a student whose science fair research is mining related. The **Wyoming Mining Association Russ Beamer Scholarship** may be used at a university of the student's choice.

This year's scholarship goes to: Dante Sylvester

Wyoming NASA Space Grant Consortium presents special monetary awards to students conducting and presenting excellent research on a topic of interest to NASA and Space Grant.

The students receiving these awards are:

Jakobi Hibbert from Big Piney, WY

Charles Koval from Sheridan, WY

Evan Anderson from Cheyenne, WY

Abby Copeland from Lander, WY

Carlos Munoz & Nathan Maxfield from Marbleton, WY

Kaitlyn Vigil, Ian Engling, and Shaeleigh Evans from Wheatland, WY

Nathan Ulery from Sheridan, WY

Juliann Healey from Cheyenne, WY

Makyela Sorensen from Greybull, WY

Eduardo Burgos from Greybull, WY

Qingfeng Li from Laramie, WY

Alyssa Umphlett from Newcastle, WY

The **Wyoming Research Scholars Program (WRSP)** is a research program that pairs UW undergraduate students with a faculty mentor to work in their laboratory, and provides funding for salary, lab supplies, and conference travel. The winner of this award receives automatic entry into the program upon beginning their college education at the University of Wyoming.

This year's winner is: Fiachra Rottinghaus from Lander, WY

The **Yale Science and Engineering Association, Inc.** presents one award to the most outstanding 11th grade entry in computer science, engineering, physics or chemistry. A preliminary certificate is presented this morning. A formal award certificate and medallion will be mailed later.

The recipient of this award is: Sierra Spears from Lingle, WY

2017 Wyoming State Science Fair Category Awards

Each winner of a category award receives a certificate of achievement, a ribbon, and a monetary award.

The category of **Animal and Plant Sciences**

Junior Division

- 3rd Place: Theresa Bautz from Lander, WY
- 2nd Place: Tanner Roberts from Pinedale, WY
- 1st Place: Bree Coxbill from Torrington, WY

Senior Division

- 3rd Place: Kellar Bock from Newcastle, WY
- 2nd Place: Courtney Rainbolt from Newcastle, WY
- 1st Place: Colton Curtis from Meeteetse, WY

The category of **Behavioral & Social Sciences**

Junior Division

- 3rd Place: Aiden Chandler and Samuel Belmont from Powell, WY
- 2nd Place: Gage Gose from Lander, WY
- 1st Place: Colmcille Rottinghaus from Lander, WY

Senior Division

- 3rd Place: Heather Michaelis and Megan Kenney from Newcastle, WY
- 2nd Place: Samuel Palmer from Casper, WY
- 1st Place: Fiachra Rottinghaus from Lander, WY

The category of **Biochemistry and Biological Sciences (Biochemistry/Molecular & Cellular Biology/Computational Biology & Bioinformatics):**

Junior Division

- 3rd Place: Weston Haley from Greybull, WY
- 2nd Place: Bailey Benson from Wheatland, WY
- 1st Place: Riley Shaw from Lusk, WY

Senior Division

2nd Place: Julianne Carlson from Greybull, WY

1st Place: Devon Curtis from Meeteetse, WY

The category of **Chemistry/ Energy: Chemical**

Junior Division

3rd Place: Jaycee Myrtle and Sheela Flury from Torrington, WY

2nd Place: Abby Copeland from Lander, WY

1st Place: Carlos Munoz and Nathan Maxfield from Marbleton, WY

Senior Division

3rd Place: Alicia Brock from Meeteetse, WY

2nd Place: Caitlin Huang from Laramie, WY

1st Place: Makyela Sorensen from Greybull, WY

The category of **Engineering Sciences and Energy: Physical (Engineering Mechanics/Materials Science/Energy: Physical)**

Junior Division

3rd Place: Charles Koval from Sheridan, WY

2nd Place: Nathan Ulery from Sheridan, WY

1st Place: Ethan Adkins from Pinedale, WY

Senior Division

3rd Place: Bradyn Frye from Newcastle, WY

2nd Place: Alyssa Umphlett from Newcastle, WY

1st Place: Jacob Rhoades from Newcastle, WY

The category of **Environmental Sciences and Engineering (Earth & Environmental Sciences/ Environmental Engineering)**

Junior Division

3rd Place: Sierra Lloyd from Lander, WY

2nd Place: Evan Anderson from Cheyenne, WY

1st Place: Mia Copeland from Lander, WY

Senior Division

- 3rd Place: Dante Sylvester from Greybull, WY
- 2nd Place: Eduardo Burgos from Emblem, WY
- 1st Place: Sierra Spears from Lingle, WY

The category of **Mathematics**

Junior Division

- 3rd Place: Benjamin Browning from Lander, WY
- 2nd Place: Preslie Simkins from Pinedale, WY
- 1st Place: Gabriel Harris from Lander, WY

There were NO Senior High School Division mathematics entries.

The category of **Medical Sciences (Biomedical & Health Sciences/ Biomedical Engineering/ Translational Medical Sciences)**

Junior Division

- 3rd Place: Jakobi Hibbert from Big Piney, WY
- 2nd Place: Isabella Lungren from Greybull, WY
- 1st Place: Riley Schiller and Jace Bohlman from Powell, WY

Senior Division

- 3rd Place: Arundathi Nair from Laramie, WY
- 2nd Place: Adrianna Ruby and Destiny Reed from Big Piney, WY
- 1st Place: Anna Savage from Greybull, WY

The category of **Microbiology**

Junior Division

- 3rd Place: Sabrina Donaldson from Pinedale, WY
- 2nd Place: Torrey Sanford from Greybull, WY
- 1st Place: Anna Cecil from Wheatland, WY

Senior Division

- 3rd Place: Merik Votaw from Meeteetse, WY
- 2nd Place: Cheyenne Hunter from Hanna, WY
- 1st Place: Jennel Mead from Cheyenne, WY

The category of **Physics and Astronomy**

Junior Division

3rd Place: Tristan Smith from Saratoga, WY

2nd Place: Brodie Turbitt from Cheyenne, WY

1st Place: Danielle Clapper and Carly Keller from Veteran, WY

Senior Division

3rd Place: Hunter Liggett from Newcastle, WY

2nd Place: Amanda Cooley from Meeteetse, WY

1st Place: Johnna Dawson from Newcastle, WY

The category of **Robotics and Computer Sciences (Robotics & Intelligent Machines/ Embedded Systems/ Systems Software)**

Junior Division

3rd Place: Addison Braten from Powell, WY

2nd Place: Quinton Lawrence from Wheatland, WY

1st Place: Kyland Fuller from Ft. Laramie, WY

Senior Division

3rd Place: Kaden Curren and Talon Logan from Newcastle, WY

2nd Place: Garrett Merchen from Newcastle, WY

1st Place: Qingfeng Li from Laramie, WY

The **Broadcom MASTERS** is the national competition for 6th, 7th, and 8th grade students who participate in affiliated science fairs. Our fair has the honor of selecting top participants to continue their journey to the national competition. Broadcom MASTERS nominees are invited to complete the online application, and are eligible for valuable prizes and awards including \$25,000, iPads, STEM summer camp, and more. Every student who applies online will receive a free Broadcom MASTERS t-shirt and is automatically entered to win fun prizes, like an iPod nano. This nomination is an honor, and distinguishes these projects as among the top 10% in the nation. From the entrants, the top 300 MASTERS (formerly called semifinalists) will be selected, and 30 finalists will be announced this fall. Each finalist wins \$500 and an all-expense-paid trip to the Broadcom MASTERS Finals from October 19-25, 2017.

Additionally, in recognition of the importance of the contributions of schools and teachers to STEM education and the project based learning of Broadcom MASTERS competitors, each of the finalists' schools receive \$1,000, and teachers of semifinalists also receive special awards."

We are pleased to present the junior division students who have been nominated to participate in the **Broadcom Masters competition.**

The Broadcom MASTERS nominees from the Northern Wyoming Regional Fair (selected in the Northern Regional Science Fair in January 2016) are:

Wyatt Peterson and Brayden George with a project titled *"Plasma Cutter"*

Aiden Chandler and Sam Belmont with a project titled *"When Words Fail Music Speaks"*

Jace Bohlman and Riley Schiller with a project titled *"Concussion Effects"*

Amalie Beachler with a project titled *"From Biomass to Biogas"*

Gabrielle Crum with a project titled *"Will a planter designed using the Fibonacci sequence optimize plant growth in the Fittonia plant?"*

Noelle Jenness with a project titled *"Exploring Chromatic Filtering as a Visual Aid Technology"*

Weston Adams with a project titled *"Correlating Forest Fire Activity with Atmospheric CO₂ and Global Temperature"*

Isabella Lungren with a project titled *"Protecting the Bull Rider Spine"*

John Coyne with a project titled *"The Effect of Grain Size on Mars Rover Mobility"*

Toran Graham & Keefer Thomas with a project titled *"Beam'n it"*

Delanie Salzman with a project titled *"How does the shoulder angle gate and height of a horse effect their turning distance between their hooves?"*

The Broadcom MASTERS nominees from the Wyoming State Science Fair are:

Colmille Rottinghaus with a project titled *"But I Thought He Was on My Team! The Effect of Jersey Color on Quarterback Performance"*

Dylan Huelskamp with a project titled *"Type 1 Diabetes and Exercise"*

Abby Copeland with a project titled *"Once Upon Again: Rechargeable Tin Batteries"*

Carlos Munoz with a project titled *"Developing a Microbial Fuel Cell"*

Evan Anderson with a project titled *"Hot Gas"*

Sierra Lloyd with a project titled *"Moovin' for Biodiversity"*

Mia Copland with a project titled *"Harming Our Future One Weed At A Time"*

Kyland Fuller with a project titled *“Discovering the Capability of a Homemade Particle Sensor and Exploring the Dangers of Particulate Matter”*

The Intel International Science and Engineering Fair (Intel ISEF), a program of Society for Science & the Public (the Society), is the world’s largest international pre-college science competition. Each year, approximately 1,800 high school students from more than 75 countries, regions, and territories are awarded the opportunity to showcase their independent research and compete for on average \$4 million in prizes. We are pleased to present the senior division students who will represent Wyoming at the 2017 **International Science and Engineering Fair** in Los Angeles, California this May.

The two qualifying students from the Northern Wyoming Regional Fair (selected in the Northern Regional Science Fair in January 2016) are:

Bailey Burnes, of Greybull High School, with a project titled *“Potential Neuronal Toxicity Associated with Cellular Exposure to Electronic Cigarette Fluids”*.

Dante Sylvester, of Greybull High School, with a project titled *“Evaluating the Effectiveness of a Hydrogel/Fertilizer Matrix to Improve Seed Germination”*

The four qualifying students from the Wyoming State Science Fair are:

Colton Curtis from Meeteetse High School, with a project titled *“The Embryonic Development of *Oncorhynchus mykiss* When Exposed to Heavy Metal Solutions”*

Sierra Spears from Lingle-Fort Laramie High School, with a project titled *“Determination of Soil VOC Content Due to Coal Dust Deposition along Major Railroad Transportation Routes”*

Jennel Mead from Cheyenne South High School, with a project titled *“Shifting Sun Vs. Putrid *Pilobolus*”*

Qingfeng Li from Laramie High School, with a project titled *“Implementing New Methods of Prosthetic Control”*