

## 2019 High Plains Regional Science & Engineering Fair Award Winners

### 6th Grade Winners

#### Biological Sciences Category:

- 1<sup>st</sup> Place: Jace Denholm, St. Thomas More Middle School, “Photosynthesis  $6\text{Co}_2 + 6\text{H}_2\text{O} = 6\text{H}_2\text{O}_6$ ”
- 2<sup>nd</sup> Place: Louis Rancour, Wall School, “Hold Onto That Ground”
- 3<sup>rd</sup> Place: Leonida Bradsky, St. Thomas More Middle School, “Grow Kale Grow”
- 4<sup>th</sup> Place: Katharina Kerkenbush, St. Thomas More Middle School, “Filter Till It’s Safe”
- 5<sup>th</sup> Place: Paylyn Bowar, Spearfish Middle School, “How Dense Are Dancers’ Bones?”

#### Engineering Category

- 1<sup>st</sup> Place: Ramona Ban, St. Thomas More Middle School, “Fun Robotic Hand”
- 2<sup>nd</sup> Place: Teagan Vining, St. Thomas More Middle School, “Help Me I’m Falling!”
- 3<sup>rd</sup> Place: Seth Johnson, St. Thomas More Middle School, “Good Vibes”
- 4<sup>th</sup> Place: Mekhi Mann, St. Thomas More Middle School, “Balloon Powered Car”
- 5<sup>th</sup> Place: Pamela Jimenez, St. Thomas More Middle School, “S’fun Oven”

#### Physical Sciences Category

- 1<sup>st</sup> Place: Ethan Euneau, Hill City, “An Uplifting Project: The Buoyancy of Balloons”
- 2<sup>nd</sup> Place: Taylor Ihde, Spearfish Middle School, “How Does the Size of a Parachute Affect the Rate of the Fall”
- 3<sup>rd</sup> Place: Sydney Baker, Newell School, “Does Barrel Length Affect Shooting Accuracy?”
- 4<sup>th</sup> Place: Michael Strawn, Spearfish Middle School, “Being Forthright About Fortnite”
- 5<sup>th</sup> Place: Casey Nauta, Black Hills Christian Academy, “Ultimate Cookie”

#### Social Sciences Category

- 1<sup>st</sup> Place: Sara Heine, Spearfish Middle School, “Why are Kids and Adults Addicted to their Phones?”
- 2<sup>nd</sup> Place: Sean Holstein, St. Thomas More Middle School, “Center of Balance”
- 3<sup>rd</sup> Place: Gracie Skaley, Spearfish Middle School, “What Are Feral Children?”
- 4<sup>th</sup> Place: Madison Graper, St. Thomas More Middle School, “Read It, Write It, Learn It!”
- 5<sup>th</sup> Place: Sevana Thompson, Spearfish Middle School, “How Does Music Affect Your Mood?”

### 7th Grade Winners

#### Biological Sciences Category

- 1<sup>st</sup> Place: Rachel Erk, Newell School, “Super Sonic Speed”
- 2<sup>nd</sup> Place: Ian Henrichsen & Sean Pelayic, West Middle School, “The Chemical Plants”
- 3<sup>rd</sup> Place: Natasha Winter, Hill City, “Is Playground Snow Too Contaminated to Eat?”
- 4<sup>th</sup> Place: Paol Nash, Spearfish Middle School, “Bacteria in Space”
- 5<sup>th</sup> Place: Alessandra Rolando, Black Hills Christian Academy, “Remove It”

#### Engineering Category

- 1<sup>st</sup> Place: Alexis Grismer, Spearfish Middle School, “Architectural Destruction”
- 2<sup>nd</sup> Place: Brice Blanchett, Black Hills Christian Academy, “The Sky’s The Limit”
- 3<sup>rd</sup> Place: Elliot Jackovich, Spearfish Middle School, “What Snow Fence Angle is Best?”

- 4<sup>th</sup> Place: Alyssa Furnish & Natalie Harris, Spearfish Middle School, “Fan the Flame”
- 5<sup>th</sup> Place: Thane Simons, Wall School, “Zoom Zoom”

#### Physical Sciences Category

- 1<sup>st</sup> Place: Sienna Hopper & Autumn Tabaha, Spearfish Middle School, “Best Containers for Insulating the Cold”
- 2<sup>nd</sup> Place: Rylyn Junek, Spearfish Middle School, “Oil Cleanup Race”
- 3<sup>rd</sup> Place: Madyson Wolfe, Madilyn Foreman, & Kaydence Johnson, South Middle School, “Fire Factors”
- 4<sup>th</sup> Place: Lise Lara Lopez, Spearfish Middle School, “Does Carbon Dioxide Raise the Temperature of the Atmosphere?”
- 5<sup>th</sup> Place: Samantha Zoller, Spearfish Middle School, “Fingerprint Clarity”

#### Social Sciences Category

- 1<sup>st</sup> Place: Maria Bouman & Addi Reiners, Spearfish Middle School, “How Much Does the Nose Know?”
- 2<sup>nd</sup> Place: Sadie Ellingsen, Spearfish Middle School, “Pareidolia Yanny or Laurel?”
- 3<sup>rd</sup> Place: Addyson Allgier, St. Thomas More Middle School, “Bullseye!”
- 4<sup>th</sup> Place: Nora Dinger, Wall School, “Think Fast”
- 5<sup>th</sup> Place: Aidan Hirsch & Haylon Heiting, Spearfish Middle School, “Reaction Time”

### **8th Grade Winners**

#### Biological Sciences Category

- 1<sup>st</sup> Place: Madison Reece, Spearfish Middle School, “Cool Down”
- 2<sup>nd</sup> Place: Natalie Schnoepfer, Timber Lake Middle School, “How Does Time Affect Vitamin C Concentration?”
- 3<sup>rd</sup> Place: Code Enright & Abbey Linderman, Timber Lake Middle School, “The Effects of Soil Nutrition on Plant Growth”
- 4<sup>th</sup> Place: Jett Mohr, Wall School, “Detergent”
- 5<sup>th</sup> Place: Asea Malik, West Middle School, “Mold No More!”

#### Engineering Category

- 1<sup>st</sup> Place: Callie Wince, Spearfish Middle School, “Why Get Wet if You Can Stay Dry?”
- 2<sup>nd</sup> Place: Jason Albertson, St. Thomas More Middle School, “Earth-Shaking Science”
- 3<sup>rd</sup> Place: Abbigail Wagner, St. Thomas More Middle School, “Card Trick?”
- 4<sup>th</sup> Place: Kenna Webb, Timber Lake Middle School, “A Study of Mechanically Stabilized Earth”
- 5<sup>th</sup> Place: Gibson Heathman, Spearfish Middle School, “Viscosity and Solids”

#### Physical Sciences Category

- 1<sup>st</sup> Place: Alyssa Rafferty, Spearfish Middle School, “Water Quality in Spearfish Creek”
- 2<sup>nd</sup> Place: Megan Zhu, Southwest Middle School, “Locally Heated Solar-Driven Clean Water Generation”
- 3<sup>rd</sup> Place: Maquelle Strawn, Spearfish Middle School, “Lights Camera Reaction”
- 4<sup>th</sup> Place: Isaac Flanegan, Flanegan Home School, “Ski Wax Performance Study”
- 5<sup>th</sup> Place: Tom Solano & Macy Stephens, St. Thomas More Middle School, “Fermentation Inflation”

### Social Sciences Category

- 1<sup>st</sup> Place: Shay Kraft, Timber Lake Middle School, “How is Memory Affected by Visual and Audio Cues?”
- 2<sup>nd</sup> Place: Brooklyn Deneui, West Middle School, “Peppermint Affecting Test Scores”
- 3<sup>rd</sup> Place: Enrich Grace Patdu & Grace Payton, West Middle School, “The Stroop Effect”
- 4<sup>th</sup> Place: Grace Ligtenberg, Spearfish Middle School, “23 Unbelievable Projects Students Got Away With!”
- 5<sup>th</sup> Place: Cindy Hoyt & Tobi Hintz, Timber Lake Middle School, “Medicine Deception”

### Senior Division Winners

#### Biological Sciences Category

- 1<sup>st</sup> Place: Serenity Engel, Hot Springs High School, “How Ironic: Developing a Ferrofluid”
- 2<sup>nd</sup> Place: Lizzy Escalante & Holly Peckosh, Hill City, “How Music BPM Affects Stamina and Speed of a Hamster”
- 3<sup>rd</sup> Place: Beau Dubray, Timber Lake High School, “Buffalo Collagen vs. Beef Collagen: Analysis and Comparison”

#### Engineering Category

- 1<sup>st</sup> Place: Markie Whitney, Newcastle High School, “Solar Panels: Too Cool”
- 2<sup>nd</sup> Place: Abigail Oliver, Hill City, “Collecting Solar Heat”
- 3<sup>rd</sup> Place: Emily Siemonsma, Sidney Schroeder, and Alexis Cuautle, Hill City, “Factors Effecting Wind Turbine Efficiency”

#### Physical Sciences Category

- 1<sup>st</sup> Place: Shelby Davis, Newcastle High School, “Sequestration in Concrete”
- 2<sup>nd</sup> Place: Gracie Sandquist & Matthew Jewett, Timber Lake High School, “Water Quality Across Reservations”
- 3<sup>rd</sup> Place: Carter Sandven & Jeremy Gillaspie, Hill City, “Wheeling Into a More Efficient Future”

#### Social Sciences Category

- 1<sup>st</sup> Place: Bergen Marshall, Timber Lake High School, “Is Less More? Investigating the Paradox of Choice”
- 2<sup>nd</sup> Place: Alex Peterson, Timber Lake High School, “How Music Evolves Art”
- 3<sup>rd</sup> Place: Rosario Munoz & Ximena Contreras, Hill City, “Does Age Affect Human Reaction Time”

### Special Awards

The American Meteorological Society Award is given to a project for creative scientific endeavors in the areas of atmospheric and related oceanic and hydrologic sciences.

- Winner: Cara Jean Ronish & Rylee Flick, Hill City, “Wind Potential”

The American Psychological Association Award recognizes outstanding research in psychology science under the category of behavior and social sciences or any category related to psychology sciences, biochemistry, computer science, environmental science, mathematical science, medicine and health.

- Winner: Nora Dinger, Wall School, “Think Fast”

The American Society for Clinical Laboratory Science-South Dakota Award is given for exceptional research in clinical laboratory science.

- Winner: Tia Lebeau, Timber Lake High School, “Genomic Instability of GAA DNA Repeats associated with Friedreich Ataxia”

The ASM Materials Education Foundation award is given to the most outstanding exhibit in materials science.

- Winner: Emily Siemonsma, Sidney Schroeder, and Alexis Cuautle, Hill City, “Factors Effecting Wind Turbine Efficiency”

The Association of Women Geoscientists Award is given to a female student whose project exemplifies high standards of innovativeness and scientific excellence in the geosciences.

- Winner: Shelby Davis, Newcastle High School, “Sequestration in Concrete”

The Black Hills Astronomical Society Award is given to the top astronomical-related project.

- Winner: Madison Viergets, Spearfish Middle School, “The Mysteries of Space Exploration”

The Intel Excellence in Computer Science Award is given to the top place high school winner in computer science.

- Winner: Cameron Ausmann, Wall School, “WORD JMULBE”

The Mu Alpha Theta Award is given to a high school project demonstrating the most challenging, original, thorough, and creative investigation of a problem involving mathematics accessible to a high school student.

- Winner: Sarah Barnica, Timber Lake High School, “Correlation Between Lead & Consumable Zinc”

The NASA Earth System Science Award is presented to the student who exhibited outstanding efforts with a project relating to earth systems.

- Winner: Markie Whitney, Newcastle High School, “Solar Panels: Too Cool”

The NASA South Dakota Space Grant Award is given to the top space-related project.

- Winner: Luke Rupert, Hill City, “Is a Passive Solar Tracker More Efficient Than an Active Solar Tracker?”

The National Oceanic and Atmospheric Administration Taking the Pulse of the Planet Award goes to an individual whose research emphasizes NOAA’s mission of science, service and stewardship: to understand and predict change in climate, weather, oceans, and coasts; to share that knowledge and information with others; and to conserve and manage coastal and marine ecosystems and resources.

- Winner: Natasha Winter, Hill City, “Is Playground Snow Too Contaminated to Eat?”

The Office of Naval Research is committed to supporting science, technology, engineering and math initiatives and programs for our nation’s young people and recognizes one senior and one junior division winner.

- Junior Division Winner: Madison Reece, Spearfish Middle School, “Cool Down”
- Senior Division Winner: Markie Whitney, Newcastle High School, “Solar Panels: Too Cool”

Ricoh Americas Corporation recognizes outstanding efforts in addressing issues of environmental responsibly and sustainable development in their science and engineering project with the Sustainable Development Award.

- Winner: Markie Whitney, Newcastle High School, “Solar Panels: Too Cool”

The Sanford Promise Award recognizes excellence in biomedical science.

- Winner: Trey Bollinger & Ty Ducheneaux, Timber Lake, “Fasting: An Unknown Cure for Diabetes (Phase II)”

The Society for In Vitro Biology Award is given to the most outstanding 11<sup>th</sup> grade student exhibiting in the areas of plant or animal in vitro biology or tissue culture.

- Winner: Austyn Vaughn, Newcastle High School, “What are the ‘Weezens’ for Esophageal Decay?”

The South Dakota Science Teachers Association Award is presented for excellence in the field of scientific research.

- Winner: Madison Reece, Spearfish Middle School, “Cool Down”

The South Dakota Veterinary Medical Alliance provides the Veterinary Award to the top scorer in biological sciences.

- Winner: AJ Lindskov & Konor Lindskov, Timber Lake Middle School, “Is There a Relationship Before Birth Weight and Weaning Weight in Charolais Cattle?”

The Stockholm Junior Water Prize Competition recognizes outstanding water-related research at the high-school level.

- Winner: Lashae Nash & Lorenda Long, Timber Lake High School, “What’s In Your Water”

The United States Air Force Research Laboratory is proud to support science, technology, engineering, and math initiatives for our nation’s youth and recognizes one senior and one junior division winner.

- Junior Division Winner: Alyssa Rafferty, Spearfish Middle School, “Water Quality in Spearfish Creek”
- Senior Division Winner: Shelby Davis, Newcastle High School, “Sequestration in Concrete”

The U.S. Metric Association sponsors the SI Metric Award for a project that involves scientific measurements and expresses those measurements consistently and correctly in SI metric.

- Winner: Ethan Euneau, Hill City, “An Uplifting Project: The Buoyancy of Balloons”

The Yale Science & Engineering Association, Inc., Award recognizes the most outstanding 11<sup>th</sup> grade project exhibiting in the areas of computer science, engineering, physics or chemistry.

- Winner: Beau Dubray, Timber Lake, “Buffalo Collagen vs. Beef Collagen: Analysis and Comparison”

South Dakota EPSCoR provided funding for the High Plains Fair to send the top-scoring 10<sup>th</sup> grade student to attend the Intel International Science and Engineering Fair as an observer.

- Observer: Rose Smith, Sturgis Brown High School, “Plastic Eating Bacteria”

The runner-up qualifier for the Intel International Science and Engineering Fair was selected from the top-scoring projects in the senior division and will replace the first-place qualifier if for any reason the qualifier cannot attend the International Fair.

- Runner-up qualifier: Alex Peterson, Timber Lake High School, “How Music Evolves Art”

The first-place qualifier for the Intel International Science and Engineering Fair is the student was chosen from the top-scoring projects in the senior division and will represent the High Plains Region on an all-expense paid trip to the international fair in Phoenix, Arizona, May 12-17, 2019.

- First place qualifier: Serenity Engel, Hot Springs High School, “How Ironic: Developing a Ferrofluid”