

## 2022 High Plains Regional Science & Engineering Fair Award Winners

### 6th Grade Winners

#### Biological Sciences Category:

- 1<sup>st</sup> Place: Tiernan Frederickson, *Flush it Fresh, not Frozen!*, Spearfish Middle School
- 2<sup>nd</sup> Place: Peyton Manke, *Do Dogs Really Know?*, Spearfish Middle School
- 3<sup>rd</sup> Place: Taycee Ziegler, *Cold Mold*, Spearfish Middle School
- 4<sup>th</sup> Place: Lydia Brown, *Dead VS Alive*, Spearfish Middle School
- 5<sup>th</sup> Place: Vianna Shahbazi, *Flood? Drought? How Plants are Affected by Climate Change*, St. Thomas More Middle School

#### Engineering Category

- 1<sup>st</sup> Place: Sydney Telford, *Color Temp*, Spearfish Middle School
- 2<sup>nd</sup> Place: Carter Thompson, *Surveying Then & Now*, Spearfish Middle School
- 3<sup>rd</sup> Place: Demetria Black, *Is This One Faster?*, Spearfish Middle School
- 4<sup>th</sup> Place: Aiden Sawatzky, *How Does Weight Affect Fuel Efficiency*, St. Thomas More Middle School
- 5<sup>th</sup> Place: Ayden Berndt and Carter Hofland, *Stairs to the Stars*, East Middle School

#### Physical Sciences Category

- 1<sup>st</sup> Place: Quan Harper, *Rubik's Cube + Lube = SpeedCube?*, St. Thomas More Middle School
- 2<sup>nd</sup> Place: Leila Riker-Acevedo, *Pintura al Fuego*, St. Thomas More Middle School
- 3<sup>rd</sup> Place: Keegan Reed, *What materials are best for traction*, St. Thomas More Middle School
- 4<sup>th</sup> Place: Edward Senger, *Color of Light Temperatures*, St. Thomas More Middle School
- 5<sup>th</sup> Place: Caydence Lester, *Permanent?*, St. Thomas More Middle School

#### Social Sciences Category

- 1<sup>st</sup> Place: Lauren Poeppel, *Do Men and Women See Things Differently?*, St. Thomas More Middle School
- 2<sup>nd</sup> Place: Ella Schirber, *Do dogs prefer homemade dog treats or store-bought dog treats?*, St. Thomas More Middle School
- 3<sup>rd</sup> Place: Isabella Herrera, *Do dogs prefer wet or dry dog food better?*, St. Thomas More Middle School
- 4<sup>th</sup> Place: Evie Reinicke, *Can people taste the difference between artificial and natural flavors*, St. Thomas More Middle School
- 5<sup>th</sup> Place: Kaitlin Strain, *A Stretchy Substance*, St. Thomas More Middle School

### 7th Grade Winners

#### Biological Sciences Category

- 1<sup>st</sup> Place: Jory Olson, *What is the best Protein Value Delivered to my Cows?*, Belle Fourche Middle School
- 2<sup>nd</sup> Place: Laila Ratzsch, *When is your memory at its best?*, Spearfish Middle School
- 3<sup>rd</sup> Place: River Doyle and Julianna Fast Dog, *Nature vs. Science*, Todd County Middle School
- 4<sup>th</sup> Place: Clay Mackaben, *Does no-tilled or tilled soil absorb more water?*, Belle Fourche Middle School
- 5<sup>th</sup> Place: Zoe Brown, *Tap Water vs. Filtered Water*, St. Thomas More Middle School

### Engineering Category

- 1<sup>st</sup> Place: Hannah Sandgren, *Building Better Bridges*, Spearfish Middle School
- 2<sup>nd</sup> Place: Riley Storm, *The Spotlights on Ethylene*, Spearfish Middle School
- 3<sup>rd</sup> Place: Gabe Raba, *Which Truss is Strongest*, Belle Fourche Middle School
- 4<sup>th</sup> Place: James Binder, *Loud But Quiet*, Spearfish Middle School
- 5<sup>th</sup> Place: Auna Taglioli and Caitlin Lyon, *Can You "Truss" Me?*, Spearfish Middle School

### Physical Sciences Category

- 1<sup>st</sup> Place: Elle Anderson, *The Heating of Land and Water*, Spearfish Middle School
- 2<sup>nd</sup> Place: Maggie Elias, *Draw Length (Knowledge or Nonsense)*, Spearfish Middle School
- 3<sup>rd</sup> Place: Raelyn Hlavka, *What finger trap design holds the most weight?*, South Middle School
- 4<sup>th</sup> Place: Maryn Berendse and Catherine Vanwinkle, *High Flyin'*, St. Thomas More Middle School
- 5<sup>th</sup> Place: Morgan Little, *Fire Fight*, Spearfish Middle School

### Social Sciences Category

- 1<sup>st</sup> Place: Gabrielle Johnson, *I See the Light*, St. Thomas More Middle School
- 2<sup>nd</sup> Place: Kailyn Hansen and Remy Myers, *How does font affect memory?*, South Middle School
- 3<sup>rd</sup> Place: Weston Carlson, *What Will Give You The Best Nights Sleep?*, Spearfish Middle School
- 4<sup>th</sup> Place: Lucius Bussiere, *Musical IQ*, Spearfish Middle School
- 5<sup>th</sup> Place: Taliyah Johnson, *How Long Does It Take a 7<sup>th</sup> Grader to Comprehend the Stroop Effect?*, Belle Fourche Middle School

## 8th Grade Winners

### Biological Sciences Category

- 1<sup>st</sup> Place: Corey Ryder, *The Smartest Slime*, St. Thomas More Middle School
- 2<sup>nd</sup> Place: Atlee Olson, *How do Drones affect the Behavior of Cattle?*, Belle Fourche Middle School
- 3<sup>rd</sup> Place: Caileigh Atherton, *DINO-MIGHT*, St. Thomas More Middle School
- 4<sup>th</sup> Place: Denali Larson, *Which Method of Washing Your Hands is Most Effective*, Belle Fourche Middle School
- 5<sup>th</sup> Place: Shourya Goyal, *Let it Live!*, St. Thomas More Middle School

### Engineering Category

- 1<sup>st</sup> Place: Emerett Josephson, *Nikola Tesla's Tesla Coil*, Spearfish Middle School
- 2<sup>nd</sup> Place: Marita Jenshus, *Jack It Up!*, St. Thomas More Middle School
- 3<sup>rd</sup> Place: Tegan Fredericksen, *How Does the Shape of Model Rocket Fins Affect Flight?*, Belle Fourche Middle School
- 4<sup>th</sup> Place: Beige Pritchard, *So long boiled water, you will be mist!*, Spearfish Middle School
- 5<sup>th</sup> Place: Kyle Hendrickson, *How does the design of a bridge affect its strength?*, Belle Fourche Middle School

### Physical Sciences Category

- 1<sup>st</sup> Place: Sylvie Mortimer, *Speedy Shoes*, St. Thomas More Middle School
- 2<sup>nd</sup> Place: Brianna Solano and Sophia Dirks, *The Perfect Pesticide*, St. Thomas More Middle School
- 3<sup>rd</sup> Place: Max Speed and Broeden Sales, *Melting Ice*, St. Thomas More Middle School
- 4<sup>th</sup> Place: Dayla Valandra, Gabrielle Kenny, and Laynie Medicine Eagle, *Cleaning Covid*, Todd County Middle School

- 5<sup>th</sup> Place: Braeden Strain, *Can you see a difference*, St. Thomas More Middle School

#### Social Sciences Category

- 1<sup>st</sup> Place: Kate Williamson, *How Do Different Breathing Techniques Affect Stress Levels?*, Belle Fourche Middle School
- 2<sup>nd</sup> Place: Trinity Hostetter, *Are Subliminal Messages Effective?*, Belle Fourche Middle School
- 3<sup>rd</sup> Place: Jay Skadberg, *Crazy for Color*, Todd County Middle School
- 4<sup>th</sup> Place: Ellie Becker, *The Sound of Science*, Spearfish Middle School
- 5<sup>th</sup> Place: Latecia Fernandes, *Motivation the key to education*, Todd County Middle School

#### Senior Division Winners

##### Biological Sciences Category

- 1<sup>st</sup> Place: Natalie Gross, *Finding a Correlation Between Physical and Mental Health*, Timber Lake High School
- 2<sup>nd</sup> Place: Carlie Lawrence, *Common Essential Oils and Inhibition of E. coli Bacteria*, Timber Lake High School
- 3<sup>rd</sup> Place: Andrew Lindskov and Konor Lindskov, *Breeding Systems In Cattle*, Timber Lake High School

##### Engineering Category

- No students competed in this category

##### Physical Sciences Category

- No students competed in this category

##### Social Sciences Category

- 1<sup>st</sup> Place: Kenna Webb, *Retention Rates of Students Depending on the Color of Paper*, Timber Lake High School
- 2<sup>nd</sup> Place: Shay Kraft, *Accuracy of Memorization with Different Methods of Learning*, Timber Lake High School
- 3<sup>rd</sup> Place: Code Enright, *How much does social media affect stress and anxiety?*, Timber Lake High School

#### Special Awards

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

- Winner: Kaya Scull, *Babbling Bridges*, St. Thomas More Middle School
- Winner: Mason Harvey, *Wind Turbine Study*, Spearfish Middle School

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: Taliyah Johnson, *How Long Does It Take a 7th Grader to Comprehend the Stroop Effect?*, Belle Fourche Middle School

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

- Winner: Abby Inman, *Batter Up*, St. Thomas More Middle School

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: Alexis Pickett, *Is radiation from the 1950's Nevada Test Site Fallout still prevalent in Western South Dakota Soil?*, Belle Fourche Middle School

The Environmental Protection Agency Award is presented to the project which best applies Science, Technology, Engineering, and Mathematics (STEM) to research and solutions that aim to protect the environment and human health.

- Winner: Alexis Pickett, *Is radiation from the 1950's Nevada Test Site Fallout still prevalent in Western South Dakota Soil?*, Belle Fourche Middle School

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: Sawyer Holzer, *A Comprehensive Analysis of Extraneous Factors in Anterior Cruciate Ligament Injuries*, Timber Lake High School

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

- Winner: Elle Anderson, *The Heating of Land and Water*, Spearfish Middle School

The 2022 National Geographic Society That's Geography! – Cultivating Empathy for the Earth Award is presented to a student project that is seeking solutions to the Earth's most pressing challenges around oceans, land, wildlife, human history and cultures, and human ingenuity.

- Winner: Zoe Crassard and Manuela Molinera-Munoz, *Does storing food with fresh herbs decrease the rate of spoiling?*, Timber Lake High School

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: Thomas Hughes and Alex Eisner, *CO2 & its Effect on Temperature*, Spearfish Middle School

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: Emerett Josephson, *Nikola Tesla's Tesla Coil*, Spearfish Middle School
- Senior Division Winner: Natalie Gross, *Finding a Correlation Between Physical and Mental Health*, Timber Lake High School

The Regeneron Biomedical Science Award is presented to an exceptional student scientist who not only demonstrates an impressive command of biomedical sciences but also embodies Regeneron's core values.

- Winner: Carlie Lawrence, *Common Essential Oils and the Inhibition of E. coli Bacteria*, Timber Lake High School

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: Clay Mackaben, *Does no-tilled or till soil absorb more water?*, Belle Fourche Middle School

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

- Winner: Tegan Fredericksen, *How does the shape of model rocket fins affect flight?*, Belle Fourche Middle School

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: Carlie Lawrence, *Common Essential Oils and the Inhibition of E. coli Bacteria*, Timber Lake High School

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

- Winner: Tiernan Frederickson, *Flush it Fresh, not Frozen!*, Spearfish Middle School

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 division winner.

- Winner: Carlie Lawrence, *Common Essential Oils and the Inhibition of E. coli Bacteria*, Timber Lake High School

The Yale Science & Engineering Association, Inc., Award recognizes the most outstanding 11<sup>th</sup> grade project exhibiting in the areas of Science, Technology, Engineering, and Mathematics.

- Winner: Kenna Webb, *Retention Rates of Students Depending on the Color of Paper*, Timber Lake High School

The runner-up qualifier for the Regeneron 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: Kenna Webb, *Retention Rates of Students Depending on the Color of Paper*, Timber Lake High School

The first-place qualifier for the Regeneron 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 Atlanta, Georgia May 7-13, 2022.

- First place qualifier: Natalie Gross, *Finding a Correlation Between Physical and Mental Health*, Timber Lake High School