

Montana Tech Regional Science and Engineering Fair

Division 1 Bronze Medal Winners

Grade: 9

Energy and Transportation

8003 **Electrical Generation: Concept of the Future**
Wambeke, Ariel

Three Forks High School

Grade: 10

Animal Science

7100 **The Mass Difference Between Male & Female Rhode Island Red Chicks on a Normal Diet vs. Chicks**
Creighton, Caitlin

Big Sky High School

Grade: 11

Engineering

7801 **Design, Structure and Testing of a Prototype of an Autonomous Robotic Vehicle**
Timblin, Felicia

Big Sky High School

Environmental

8101 **Predicting Temperature Inversions with an Artificial Neural Network (ANN) in Order to Predict Air**
Shannon, Brandon

Sentinel High School

Team Project

9403 **The Effects of Woodstove Smoke Exposure on the Lung Capacities of Specifically Pathogen-Free Mice**
French, Shelby
Tobiason, Sydnee

Sentinel High School

Sentinel High School

Grade: 12

Behavioral and Social Sciences

7201 **Trace Element Analysis of Obsidian Found at the Prehistoric Boss Ranch Site in Southeastern**
Douglas, J. Miles

Hellgate High School

Montana Tech Regional Science and Engineering Fair

Division 1 Silver Medal Winners

Grade:9

Earth and Planetary Science

7702 **Reassessing the Faunal Community of Fossilized Crustaceans of the Bear Gulch Limestone in Hill, Stacia**
Big Sky High School

Plant Sciences

8702 **Hybridization of Onions Resulting in Offspring with Lower Sulfur Absorption Capabilities**
Witt, Catherine
Big Sky High School

Grade: 11

Animal Science

7102 **Brown's Lake Rainbow Trout Study**
Damron, Brady
Big Sky High School

Engineering

7804 **Application of Acoustic Heterodyning and Active Noise Cancellation to Construction Projects**
Sanz, Josh
Hellgate High School

Medicine and Health Sciences

8401 **Purification and Identification of a Peptide Antibiotic Produced by the Human Microbiome Bacterium**
Macgregor, Andrew
Butte High School

Team Project

9402 **How Does Historic Mining on the Clark Fork River Affect the Macro Invertebrate Population?**
Harris, Christopher
Sentinel High School
Hunton, Kolin
Sentinel High School

Grade: 12

Earth and Planetary Science

7703 **Mount Saint Helens Ash Analysis**
Leonard, Hannah
Hellgate High School

Physics and Astronomy

8600 **The Streaming Velocities of Pulsating Aurorae in Relation to the Precipitation of Charged Particles**
Parrott, Derek
Sentinel High School

Montana Tech Regional Science and Engineering Fair

Division 1 Gold Medal Winners

Grade: 9

Team Project

9404 **Effects of PETE Plastic on Common Goldfish**
Stevens, Jessica Sentinel High School

Grade: 10

Team Project

9404 **Effects of PETE Plastic on Common Goldfish**
Williams, Emilee Sentinel High School

Grade: 11

Biochemistry

7300 **Identification of Sculpin Species in the Columbia River Basin of Western Montana**
Squirse, Morgan Big Sky High School

Energy and Transportation

8002 **The Next Generation Locomotive**
Wright, Will Belgrade High School

Physics and Astronomy

8602 **Projectile Configuration vs. Precision of .357 Caliber Hand-loaded Ammunition**
Enich, Mackenzie Big Sky High School

Plant Sciences

8700 **Growth Rates of Beans in Spotted Knapweed & Non-Spotted Knapweed Infested Soils**
Johnson, Samson Sentinel High School

Grade: 12

Chemistry

7501 **Malathion: Hydrolytic Breakdown via Chemical and Enzymatic Means**
Michels, Katherine Big Sky High School

Environmental

8104 **A Genetic Investigation and Characterization of Cramer Creek and Wall Canyon Creek as Westslope**
Dickson, Rose Big Sky High School

Medicine and Health Sciences

8400 **Myocardial Inflammation in Young Adults Exposed to Air Pollution**
Villarreal-Calderon, Rodolfo Big Sky High School

Microbiology

8502 **Isolating an Anti-Cancer Compound from the Acid Mine Waste Fungus *Trichoderma virens*, Phase II**
Zhou, Daoning Butte High School

Team Project

9405 **The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River**
Caye, Bryce Sentinel High School
VonLanken, Luke Sentinel High School

Montana Tech Regional Science and Engineering Fair

Special Awards Division 1

1 **Award:** American Meteorological Society Award

Derek Parrott	The Streaming Velocities of Pulsating Aurorae in Relation to the Precipitation of Charged Particles into the Ionosphere	Sentinel High School
Hannah Leonard	Mount Saint Helens Ash Analysis	Hellgate High School

2 **Award:** American Psychological Association Award

Sara Erickson	The Relationship Between Standard Respiratory and Circulatory Indicators and Time Spent Playing Video Games	Sentinel High School
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3 **Award:** ASM Materials Education Foundation Award

Jessie Kimmel	Strength of Concrete	Hellgate High School
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4 **Award:** Association for Women Geoscientists Award

Hannah Leonard	Mount Saint Helens Ash Analysis	Hellgate High School
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5 **Award:** Berkeley Pit Education Advisory Committee Award

Christopher Harris	How Does Historic Mining on the Clark Fork River Affect the Macro Invertebrate Population?	Sentinel High School
Kolin Hunton	How Does Historic Mining on the Clark Fork River Affect the Macro Invertebrate Population?	Sentinel High School

6 **Award:** Big Hole River Foundation Award

Morgan Squire	Identification of Sculpin Species in the Columbia River Basin of Western Montana	Big Sky High School
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7 **Award:** United States Navy

Mackenzie Enich	Projectile Configuration vs. Precision of .357 Caliber Hand-loaded Ammunition	Big Sky High School
Will Wright	The Next Generation Locomotive	Belgrade High School

8 **Award:** Clark Fork Watershed Education Program Award

Morgan Squires	Identification of Sculpin Species in the Columbia River Basin of Western Montana	Big Sky High School
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9 **Award:** Intel Excellence in Computer Science Award

Felicia Timblin	Design, Structure and Testing of a Prototype of an Autonomous Robotic Vehicle	Big Sky High School
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10 **Award:** Montana Tech Library Award

Rodolfo Villarreal-Calderon	Myocardial Inflammation in Young Adults Exposed to Air Pollution	Big Sky High School
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11 **Award:** Montana Tech Electrical Engineering Department Award

Josh Sanz	Application of Acoustic Heterodyning and Active Noise Cancellation to Construction Projects	Hellgate High School
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12 **Award:** Montana Tech Metallurgy Department Award

J. Miles Douglas	Trace Element Analysis of Obsidian Found at the Prehistoric Boss Ranch Site in Southeastern Arizona	Hellgate High School
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13 **Award:** Montana Tech Mining Engineering Award

Felicia Timblin	Design, Structure and Testing of a Prototype of an Autonomous Robotic Vehicle	Big Sky High School
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14 **Award:** International Sustainable World (Energy, Engineering & Environment)

Ariel Wambeke	Electrical Generation: Concept of the Future	Three Forks High School
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Brady Damron	Brown's Lake Rainbow Trout Study	Big Sky High School
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Katherine Michels	Malathion: Hydrolytic Breakdown via Chemical and Enzymatic Means	Big Sky High School
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15 **Award:** United States Army Award

Justyne McGowan	Factors Affecting the Efficiency of Passive Solar Panels	Sentinel High School
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Katherine Clark	I Remember	Three Forks High School
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Nicole Kelly	Factors Affecting the Efficiency of Passive Solar Panels	Sentinel High School
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Patrick White	Artificial Diet	Ennis High School
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Rachel Stocker	Factors Affecting the Efficiency of Passive Solar Panels	Sentinel High School
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16 Award: Mu Alpha Theta Award

Mackenzie Enich	Projectile Configuration vs. Precision of .357 Caliber Hand-loaded Ammunition	Big Sky High School
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17 Award: National Society of Professional Engineers Award

Felicia Timblin	Design, Structure and Testing of a Prototype of an Autonomous Robotic Vehicle	Big Sky High School
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18 Award: Professional & Technical Communications Award

Bryce Caye	The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River	Sentinel High School
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Luke VonLanken	The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River	Sentinel High School
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19 Award: Student Assistance Foundation Award

Julia Shanafelt	Horses In Herds	Ennis High School
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20 Award: REC Silicon

Brandon Shannon	Predicting Temperature Inversions with an Artificial Neural Network (ANN) in Order to Predict Air Quality	Sentinel High School
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Josh Sanz	Application of Acoustic Heterodyning and Active Noise Cancellation to Construction Projects	Hellgate High School
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21 Award: Montana Orthopedics

Andrew Macgregor	Purification and Identification of a Peptide Antibiotic Produced by the Human Microbiome Bacterium Bacillus flexus	Butte High School
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22 Award: Silver Bow Medical Society

Rodolfo Villarreal-Calderon	Myocardial Inflammation in Young Adults Exposed to Air Pollution	Big Sky High School
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23 **Award:** US Metric Association

Derek Parrott	The Streaming Velocities of Pulsating Aurorae in Relation to the Precipitation of Charged Particles into the Ionosphere	Sentinel High School
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24 **Award:** US Department of Health & Human Services

Frankie Bache'	Comparison of Physical Fitness in Female Varsity Athletes Participating in Soccer and Basketball within a 10-Week Season	Big Sky High School
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25 **Award:** 2010 Regional Ricoh Sustainable Development Award

Will Wright	The Next Generation Locomotive	Belgrade High School
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26 **Award:** Yale Science & Engineering Award

Morgan Squire	Identification of Sculpin Species in the Columbia River Basin of Western Montana	Big Sky High School
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27 **Award:** Stockholm Junior Water Prize Award

Jordan Costello	The Removal of Human-made Barriers in Burnt Fork Creek with Regard to Water Temperature Suitable for Native Trout	Sentinel High School
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28 **Award:** United States Air Force

Blake McKittrick	Does a Parent's Example at Home Affect How Kids Use Alcohol, Tobacco or Drugs?	Ennis High School
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Gus Hemphill	Piezo Electric Water Wheel	Hellgate High School
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Madyson McKittrick	Does a Parent's Example at Home Affect How Kids Use Alcohol, Tobacco or Drugs?	Ennis High School
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Timothy Koester	Piezo Electric Water Wheel	Hellgate High School
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29 **Award:** Montana Tech Petroleum Engineering Department Award

Nathan Taylor	Efficiently Extracting Oil from Oil Shale	Hellgate High School
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30 **Award:** Montana Tech Biological Science "Best of Show" Award

Rodolfo Villarreal-Calderon	Myocardial Inflammation in Young Adults Exposed to Air Pollution	Big Sky High School
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31 **Award:** George Grant Trout Unlimited

Brady Damron	Brown's Lake Rainbow Trout Study	Big Sky High School
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32 **Award:** Montana Tech Innovative Award

Nathan Taylor	Efficiently Extracting Oil from Oil Shale	Hellgate High School
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Stacia Hill	Reassessing the Faunal Community of Fossilized Crustaceans of the Bear Gulch Limestone in Central Montana after 30 Years	Big Sky High School
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33 **Award:** Montana Tech, College of Technology Award

Gina Andrew	The Corn Launcher: Affect of Increased Power On Distance that Corn Launcher Launches Corn and Itself	Heart Butte
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Kaitlyn Boy	The Corn Launcher: Affect of Increased Power On Distance that Corn Launcher Launches Corn and Itself	Heart Butte
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34 **Award:** Highest Scoring 9th Grade Project

Catherine Witt	Hybridization of Onions Resulting in Offspring with Lower Sulfur Absorption Capabilities	Big Sky High School
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35 **Award:** Highest Scoring 10th Grade Project

Emilee Williams	Effects of PETE Plastic on Common Goldfish	Sentinel High School
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36 **Award:** Highest Scoring 11th Grade Project

Will Wright	The Next Generation Locomotive	Belgrade High School
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37 **Award:** Highest Scoring 12th Grade Project

Rodolfo Villarreal-Calderon	Myocardial Inflammation in Young Adults Exposed to Air Pollution	Big Sky High School
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38 **Award:** Montana Tech Silver Access Award

Luke VonLanken	The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River	Sentinel High School
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39 **Award:** 2nd Place Team Grand Award (ISEF Alternate Team)

Bryce Caye	The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River	Sentinel High School
Luke VonLanken	The Effects of Milltown Dam Removal on Macro Invertebrate Populations in the Clark Fork River	Sentinel High School

40 **Award:** 1st Place Team Grand Award

Emilee Williams	Effects of PETE Plastic on Common Goldfish	Sentinel High School
Jessica Stevens	Effects of PETE Plastic on Common Goldfish	Sentinel High School

41 **Award:** 3rd Place Individual Grand (Alternate)

Daoning Zhou	Isolating an Anti-Cancer Compound from the Acid Mine Waste Fungus <i>Trichoderma virens</i> , Phase II	Butte High School
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42 **Award:** 2nd Place Individual Grand Award

Will Wright	The Next Generation Locomotive	Belgrade High School
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43 **Award:** 1st Place Individual Grand Award

Rodolfo Villarreal-Calderon	Myocardial Inflammation in Young Adults Exposed to Air Pollution	Big Sky High School
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44 **Award:** 2nd Place School

Butte High School

45 **Award:** 1st Place School

Big Sky High School-Missoula