

2021 - Final Awards – ND State Science & Engineering Fair

Junior division

In 2021, the top Junior Division Awards will be determined differently this year, due to the virtual nature of the event.

- At each regional fair, the top four place winners will be determined. At the State Fair, all qualifying junior division entries will compete for special awards.
- Determined at each regional fair:
- 1st - 4th place - receive plaques and \$25 Cash

Southwest Central Region

1st place – Talli Eaton (Scranton) A Musical Heart

2nd place – Karady Evans and Ella Anderson (Scranton). The Importance of Fertilizer when Growing Plants

3rd place – Trae Fisher (Dickinson Middle School) Rabbit Feed vs. Rabbit Babies

4th place – Caden Anderson (Scranton) Thawing Gelled Diesel

Southeast Region

1st place -Andrew Jean (Hankinson)- Unmasking the Truth about Masks

2nd place- Elizabeth Ahfeldt (Oak Grove) - How do a skater's height and center of mass impact angular momentum during spins?

3rd place- Sofia Hanson (Hankinson) Can Music Affect Your Mood?

4th place- Denver Nelson (Hankinson) The Cleaning rAg

Northeast Region

1st place -Mallory Kemp (Cavalier) Squirming in Suds - An LC50 Study of the Effects of Traditional vs Plant-based Dish Soaps on Red Worms

2nd place- Sonakshi Singhal (Home)- Brain Tester: Random Question With and Without Hint

3rd place- Olivia Whitney & Rebecca Sather (South) -The Shoe Sole Study

4th place- Madelyn Steryle (South)- To Leave or not to Leave

Senior Division

In 2021, the top Senior Division Awards will be determined differently than in the past, due to the virtual nature of the event.

- Eleven top finishers will represent the state at ISEF and will be awarded: \$500 monetary award; \$1000 UND scholarship. These eleven will be selected:
 - At each regional fair, the allotted number of top placers will be the representatives to ISEF from that region:
 - Northwest: 3
 - Southeast and Southwest Central: 2
 - Northeast: 1

- Additionally, up to four top finishers in each region will compete at the State Fair for three at-large positions.
- All Senior Division participants will compete for special awards.
- Marcus J. Friskop Traveling Trophy: This award will be re-instated at the 2022 NDSSEF.

ISEF Qualifiers

Northwest

- 1st Brook Vachal (Tioga) -Manure to Energy
 2nd Lindsey Vachal (Tioga) How Effective are Face Masks?
 3rd Addie Norgaard (Tioga) Does Gender Affect One's Response to Frustration?

Southeast

- 1st Emma Kratcha (Hankinson) - Soil Farms: A New Approach to Cropland Restoration
 2nd Gavin Kratcha (Hankinson)- An Analysis of Agricultural Tile Drainage and the Impact of Crop Residue Retention

Southwest Central

- 1st Isaac Muth (Mandan)- Language Recognition With Machine Learning
 2nd Blake Bernhardt (Wing)- The Credibility of Eyewitness Memories

Northeast

- 1st Sudiksha Singhal-(Home)- The Orthodontic Brace Cap

At Large

- Shrimayi Patel (Red River)- Design of Novel Scaffolds for Water Filtration by Using Benign and Agriculture Based Precursors
 Alora Kroh & Caiden Belile (Mandan)- Use as Directed
 William Hejzmanek- (Milnor)- The Science of Rocketry

The University of North Dakota – Awards

John D. Odegaard School of Aerospace Sciences

Department of Atmospheric Sciences

- Abigail Post (Hankinson) Indoor Plants: An Analysis of Their Effects on Ambient Air
 \$100 monetary award and a certificate for project in Atmospheric Sciences category, Junior or Senior

College of Arts and Sciences

Department of Biology

- Abigail Post (Hankinson) Indoor Plants: An Analysis of Their Effects on Ambient Air
 \$100 monetary award, \$300 UND Biology Scholarship, certificate for project in the Biology, Senior division
 Malory Kemp (Cavalier) Squirming in Suds - An LC50 Study of the Effects of Traditional vs Plant-based Dish Soaps on Red Worms
 \$50 monetary award and a certificate for project in the Biology, Junior division

Department of Chemistry

Destiny Simmons (Tioga) Forensic Science Luminol

\$100 monetary award and certificate for project in the Chemistry, Senior division

Malory Kemp (Cavalier) Squirring in Suds - An LC50 Study of the Effects of Traditional vs Plant-based Dish Soaps on Red Worms

\$50 monetary award and certificate for project in the Chemistry, Junior division

Department of Geography

Madelyn Foertsch (Hankinson) It's About More than Just the Touchdowns

\$75 monetary award and a certificate for project in the Geography, Senior division

Karady Evans & Ella Anderson (Scranton) The Importance of Fertilizer when Growing Plants

\$75 monetary award and a certificate for project in the Geography, Junior division

Department of Mathematics

Sudiksha Singhal (Home) - The Orthodontic Brace Cap

\$100 monetary award, \$500 UND Math scholarship, and a certificate for project in the Mathematics, Senior division

Zachary Clark (Hankinson) Construction Challenge

\$50 monetary award and certificate for project in the Mathematics, Junior division

Department of Physics and Astrophysics

William K Hejrtmanek (Milnor) -The Science of Rocketry

\$100 monetary award, \$500 UND Physics scholarship, and a certificate for project in Physics, Senior division

Elizabeth (Ellie) Ahlfeldt (Oak Grove) How do angular momentum and center of mass affect ice skating for people of different heights and weights

\$100 monetary award and a certificate for best project in Physics, Junior division

Department of Psychology

Blake Bernhardt (Wing) The Credibility of Eyewitness Memories

Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?

\$100 monetary award and a certificate for project in the Psychology or Behavioral Science, Senior division: 2 winners

Zachary Clark (Hankinson) Construction Challenge

Madelyn Streyle (South) To Leave or Not to Leave

\$100 monetary award and a certificate for project in the Psychology or Behavioral Science, Junior division: 2 winners

College of Engineering and Mines

Sudiksha Singhal (Home)The Orthodontic Brace Cap

\$500 scholarship plus \$100 monetary award for project in engineering (female winner), Senior division

Isaac Muth (Mandan) Language Recognition With Machine Learning

\$100 monetary award and certificate for project in engineering, Senior division

Zachary Clark (Hankinson) Construction Challenge

\$50 monetary award and certificate for project in engineering, Junior division

Shrimayi Patel (Red River) - Design of Novel Scaffolds for Water Filtration by Using Benign and Agriculture Based Precursors

\$100 monetary award and certificate for project in Energy or Environmental Science, Senior division

Department of Chemical Engineering

Shrimayi Patel (Red River) - Design of Novel Scaffolds for Water Filtration by Using Benign and Agriculture Based Precursors

\$50 monetary award and a certificate for project in the Chemical Engineering, Senior division

Malory Kemp (Cavalier) Squirring in Suds - An LC50 Study of the Effects of Traditional vs Plant-based Dish Soaps on Red Worms

\$50 monetary award and a certificate for project in the Chemical Engineering, Junior division

Department of Civil Engineering

Gavin Kratcha (Hankinson)An Analysis of Agricultural Tile Drainage and the Impact of Crop Residue Retention

\$25 monetary award and a certificate for project in the Civil Engineering, Senior division

Zachary Clark (Hankinson) Construction Challenge

\$25 monetary award and a certificate for project in the Civil Engineering, Junior division

Department of Computer Science

Isaac Muth (Mandan) Language Recognition with Machine Learning

\$50 monetary award and a certificate for project in the Computer Science, Senior division

Sonakshi Singhal (Home) Brain tester: Random question with and without hint

\$50 monetary award and a certificate for project in the Computer Science, Junior division

Dr. Richard Schultz Award - Department of Electrical Engineering

Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?

\$50 monetary award and a certificate for project in the Electrical Engineering, Senior division

McKayla Sagini (Schroeder) Citrus Circuits

\$50 monetary award and a certificate for project in the Electrical Engineering, Junior division

Harold Hamm School of Geology & Geological Engineering

Emma Kratcha (Hankinson) Soil Farms: A New Approach to Cropland Restoration

\$100 monetary award and certificate for project in the earth & atmospheric science, Senior division

Brooklyn Bergemann (Lisbon) Water!

\$100 monetary award and certificate for project in the earth & atmospheric science, Junior division

Department of Mechanical Engineering

William K Hejrtmanek (Milnor) The Science of Rocketry

\$50 monetary award and a certificate for project in the Mechanical Engineering category, Senior division

Caden Anderson (Scranton) Thawing Gelled Diesel

\$50 monetary award and a certificate for project in the Mechanical Engineering category, Junior division

Department of Petroleum Engineering

William K Hejrtmanek (Milnor) The Science of Rocketry

\$50 monetary award and a certificate for project in the Petroleum Engineering category, Senior division

School of Medicine and Health Sciences

Sudiksha Singhal (Home) The Orthodontic Brace Cap

\$100 monetary award and certificate for project related to Medical or Health Sciences, Senior division

Alora Kroh and Caiden Belile (Mandan) Use as Directed

\$50 monetary award and certificate for project related to Medical or Health Sciences, Senior division

Joshua Hallaway (Oak Grove) Bone Conduction

\$100 monetary award and certificate for project related to Medical or Health Sciences, Junior division

Department of Biomedical Sciences

Alora Kroh and Caiden Belile (Mandan) Use as Directed

\$100 monetary award and certificate for project in Pharmacology/Immunology, Senior division

Ezekiel Dustin (Dickinson) Is your sunscreen doing any good?

\$100 monetary award and certificate for project in Pharmacology/Immunology, Junior division

Paige Hollingshead (Tioga) GMO or Not?

Lindsey Vachal (Tioga) How Effective are Face Masks?

\$50 monetary award and certificate for project in the area of Life Sciences, Senior division, 2 winners

Brooke Carlson & Brookelyn Vandal-Jenkins (South) Icky Mask Bacteria

Andrew Jean (Hankinson) Unmasking the Truth about Masks

\$50 monetary award and certificate for project in the area of Life Sciences, Junior division, winners

Abigail Post (Hankinson) Indoor Plants: An Analysis of Their Effect on Ambient Air

Lindsey Vachal (Tioga) How Effective are Face Masks?

\$100 monetary award and certificate for project in microbiology or infectious disease, Senior division, winners

Andrew Jean (Hankinson) Unmasking the Truth about Masks

Olivia Whitney, Rebecca Sather (South) The Shoe Sole Study

\$50 monetary award and certificate for project in microbiology or infectious disease, Junior division, 2 winners

Denver Nelson (Hankinson) The Cleaning rAg

\$100 monetary award and certificate for project in Medicine or Health Sciences, Junior division

Alora Kroh and Caiden Belile (Mandan) Use as Directed

\$100 monetary award and certificate for project in Medicine or Health Sciences, Senior division

Department of Pathology/ND INBRE

Lindsey Vachal (Tioga) How Effective are Face Masks?

\$100 monetary award and certificate for project in Medicine and Health, Senior division

Ezekiel Dustin (Dickinson) Is your sunscreen doing any good?

\$50 monetary award and certificate for project in Medicine and Health, Junior division

Virginia George Inheritance Fund

Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?

\$125 monetary award for project in Social or Behavioral Science, Senior division

Arista Welsh (South) What is a dog's favorite color?

\$75 monetary award for project in Social or Behavioral Science, Junior division

Other Organizations, Societies, and Agencies Sponsoring Awards

American Chemical Society, Red River Valley Section

Allison Habib (Hankinson) A Chemical Analysis of Surface Waters

\$100 Barnes and Noble Gift Card, A Periodic Table Scroll Pen, and a Certificate

American Meteorological Society

Payton Raan (Tioga) Do You Trust The Process?

Ezekiel Dustin (Dickinson) Is your sunscreen doing any good?

A certificate for project related to Meteorology, Senior or Junior divisions, 2 winners

American Psychological Association

Brayden Sutherland (Lisbon) Do Fears Change With Age?

A certificate for project related to Psychology, Senior or Junior division

American Water Works Association

Jordan Peters (South) The Not so Clean Snow

\$75 monetary award and a certificate for project related to drinking water quality, Junior and Senior divisions

ASM Materials Foundation

Sudiksha Singhal (South) The Orthodontic Brace Cap

A ribbon and a certificate for project in Materials Engineering, Senior or Junior division

Association for Women Geoscientists

Allison Habib (Hankinson) A Chemical Analysis of Surface Waters

A certificate for project related to Geosciences, Senior or Junior division (Must be a female exhibitor)

Auxiliary to the North Dakota Veterinary Medical Association

Trae Fisher (Dickinson) Rabbit Feed vs. Rabbit Babies

\$50 monetary award and a certificate for project related to veterinary medicine, Junior division

Farmers Union Insurance—North Dakota

Emma Kratcha (Hankinson) Soil Farms: A New Approach to Cropland Restoration

\$50 monetary award and a Certificate for project related to agriculture, Senior division

Karady Evans & Ella Anderson (Scranton) The Importance of Fertilizer when Growing Plants

\$25 monetary award and a certificate for project related to agriculture, Junior division

ISEF Alumni

Emma Kratcha (Hankinson) Soil Farms: A New Approach to Cropland Restoration

\$200 and a certificate for project determined by ISEF judges, Senior or Junior division

Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?

\$100 and a certificate for project determined by ISEF judges, Senior or Junior division

MDU Resources Group, Inc.

William K Hejrtmanek (Milnor) The Science of Rocketry
Brooke Vachal (Tioga) Manure to Energy
Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?
\$25 monetary award and a certificate for project related to energy or electricity, Senior division, 3 winners
Caden Anderson (Scranton) Thawing Gelled Diesel
McKayla Sagini (Schroeder) Citrus Circuits
Elizabeth (Ellie) Ahlfeldt (Oak Grove) How do angular momentum and center of mass affect ice skating for people of different heights and weights
\$25 monetary award and a certificate for project related to energy or electricity, Junior division, 3 winners

Mu Alpha Theta

Emma Kratcha (Hankinson) Soil Farms: A New Approach to Cropland Restoration
A certificate for project involving modern mathematics, Senior division

National Oceanic & Atmospheric Administration

Daryn Daku and Rylie Lelm (South) Stop the Stank
A certificate and a medallion for project related to improved understanding of the earth's processes,
Junior division

North Dakota Academy of Family Physicians

Andrew Jean (Hankinson) Unmasking the Truth about Masks
\$50 monetary award and certificate for project related to medicine, Junior division

North Dakota Geographic Society

Gavin Kratcha (Hankinson)- An Analysis of Agricultural Tile Drainage and the Impact of Crop Residue Retention
\$50 monetary award and certificate for project related to Earth Science, senior division

North Dakota Pharmacists Association

Alora Kroh and Caiden Belile (Mandan) Use as Directed
\$100 monetary award and a certificate for project in the field of pharmacology, Senior division
Hailey Qual (Lisbon) Comparisons of Hand Sanitizers
\$75 monetary award and a certificate for project in the field of pharmacology, Junior division

North Dakota Physics Teachers Association

Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?
\$25 monetary award, t-shirt, and a certificate for project in the area of physics or physical science, Junior and Senior divisions
Elizabeth Ahfeldt (Oak Grove) - How do a skater's height and center of mass impact angular momentum during spins?
\$25 monetary award, t-shirt, and a certificate for project in the area of physics or physical science, Junior and Senior divisions

North Dakota Society for Clinical Laboratory Science

Payton Raan (Tioga) Do You Trust The Process?
Aubrey Aaland & Jirillian Hughes (Lisbon) Keep Your Distance!
Lindsey Vachal (Tioga) How Effective are Face Masks?
\$50 monetary award and a certificate for project related to laboratory medicine, Senior division, 3 Winners
Madelyn Streyle (South) To Leave or Not to Leave
Denver Nelson (Hankinson) The Cleaning rAg
Andrew Jean (Hankinson) Unmasking the Truth about Masks
\$50 monetary award and a certificate for project related to laboratory medicine, Junior division, 3 Winners

North Dakota Veterinary Medical Association

Kline, Emily (Scranton) The Effect of Classical Music on Dogs' Heart and Respiratory Rates
\$300 monetary award and a certificate for project related to veterinary medicine, Senior division
\$225 monetary award and a certificate for project related to veterinary medicine, Senior division
Arista Welsh (South) What is a dog's favorite color?
\$75 monetary award and a certificate for project related to veterinary medicine, Junior division

Ottertail Power Company

William K Hejrtmanek (Milnor) The Science of Rocketry

Brooke Vachal (Tioga) Manure to Energy
Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?
\$50 monetary award and a certificate for project related to energy or electricity, Senior division, 3 winners
Caden Anderson (Scranton) Thawing Gelled Diesel
McKayla Sagini (Schroeder) Citrus Circuits
\$50 monetary award and a certificate for project related to energy or electricity, Junior division, 2 winners

Ricoh Corporation

Emma Kratcha (Hankinson) Soil Farms: A New Approach to Cropland Restoration
A certificate for project related to environmentally friendly businesses, Senior division

Society for In Vitro Biology

A certificate for project in the area of tissue culture, 11th-grader

Society of Automotive Engineers

William K Hejrtmanek (Milnor) The Science of Rocketry
\$100 monetary award and a certificate for best project in mobility engineering, Junior and Senior division

United States Air Force

William K Hejrtmanek (Milnor) The Science of Rocketry
A Certificate for a project that has applications useful to the Air Force, Junior or Senior Division

United States Metric Association

Caden Anderson (Scranton) Thawing Gelled Diesel
Ezekiel Dustin (Dickinson) Is your sunscreen doing any good?
Malory Kemp (Cavalier) Squirming in Suds - An LC50 Study of the Effects of Traditional vs Plant-based Dish Soaps on Red Worms
Kenady David (Hankinson) Coffee vs Eggshells"
A certificate for project using metric system for measurements, Junior division, 5 winners

Water Environment Federation

Gavin Kratcha (Hankinson)- An Analysis of Agricultural Tile Drainage and the Impact of Crop Residue Retention
A certificate for project related to water quality or water conditions, Junior or Senior division

Xcel Energy

Caden Anderson (Scranton) Thawing Gelled Diesel
McKayla Sagini (Schroeder) Citrus Circuits
Elizabeth (Ellie) Ahlfeldt (Oak Grove) How do angular momentum and center of mass affect ice skating for people of different heights and weights
\$25 monetary award and a certificate for project related to energy or electricity, Junior division, 3 winners
William K Hejrtmanek (Milnor) The Science of Rocketry
Brooke Vachal (Tioga) Manure to Energy
Adeline Norgaard (Tioga) Does Gender Affect One's Response Frustration?
\$25 monetary award and a certificate for project related to energy or electricity, Senior division, 3 winners

Yale Science and Engineering Association

Isaac Muth (Mandan) Language Recognition with Machine Learning
A medallion and a certificate for project in areas of computer science, Senior division