

2023 – Final Awards – ND State Science & Engineering Fair

Senior Division Sweepstakes Winners

The first place (Marcus J. Friskop Sweepstakes) winner received a gold state plaque, a jacket, a \$200 cash award from the Marcus J. Friskop Family, a \$500 cash award from the University of North Dakota College of Engineering & Mines, and a 1 Year \$2500 Scholarship to the University of North Dakota and will advance to the ISEF in Dallas Texas and will exhibit his/her project.

The second place (sweepstakes runner-up) winner received a gold state plaque, a jacket, a \$250 cash award from the University of North Division College of Arts & Sciences, and a 1 Year \$2000 Scholarship to the University of North Dakota and will advance to the ISEF in Dallas Texas and will exhibit his/her project.

The third place (sweepstakes 2nd runner-up) winner received a state plaque, a hooded sweatshirt, a \$200 cash award from the University of North Dakota School of Medicine & Health Sciences, and a 1 Year \$1000 Scholarship to the University of North Dakota and will advance to the ISEF in Dallas Texas and will exhibit his/her project.

Senior Division – 1st Place – Sweepstakes Winner

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

Senior Division – 2nd Place – Sweepstakes Runner-Up

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

Senior Division – 3rd Place – Sweepstakes Second Runner-Up

Karlee Hoyt, Trenton School District , "Water Daphnia vs. Marine Pollutants"

Senior Division Place Winners

Projects that are selected as finalists received a gold plaque and a jacket and will advance to the ISEF in Dallas Texas in May and will exhibit their project.

Projects selected as alternates received a silver plaque and are alternates to the ISEF in Dallas Texas in May but will not exhibit their project unless a finalist from that region cannot attend.

Northwest Region

1st Finalist: Gracie Nutt, Tioga School District , "Paramount Power Plow"

2nd Finalist; Madison Mock, Trenton School District , "Brand Vs. Natural"

3rd Finalist: Brooke Vachal, Tioga School District , "Cattle Weaning"

1st Alternate: Jerrad Tyler Hiatt, Tioga School District , "What Types Of Wood Burn Hotter"

2nd Alternate: Billee Sunhagen, Tioga School District , "The Colors Of Optical Illusions"

3rd Alternate: Cheryl Hayes, Tioga School District , "Hand Sanitizer Effectiveness"

Northeast Region

1st Finalist: Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

1st Alternate: Sudiksha Singhal, Red River High School , "A Study of the Thermal Properties of Tissue and Fecal Matter to Investigate Potential Biomedical Applications of Thermography with a Focus on IBD"

2nd Alternate: Elizabeth Fedje, Brooke Gullickson, Valley/Edinburg School District , "The Path to Preventing Blue-Green Algae Growth in North Dakota Watersheds"

3rd Alternate: Halle Kohlmeier, Jacie Reardon, Adrianna Tande, Central High School , "This is So Lit!"

Southwest Central Region

1st Finalist: James Gessey, Flasher School District , "Is It Worse Than Nicotine"

2nd Finalist: Summer Fleck, Flasher School District , "Conception Rate in Cattle As Affected By Grade Of Transplanted In Vitro Fertilization Embryos"

1st Alternate: Victoria Richter, Flasher School District , "Think Ink"

2nd Alternate: Grant Hauge, Flasher School District , "An Analysis Of Nitrates In Sorghum, Based On Moisture And Timing"

3rd Alternate: Dani Maychrzak, Scranton School District , "Testing Different Types Of Cattle Bedding To Determine Which Has The Least Amount Of Bacterial Growth"

Southeast Region

1st Finalist: Kenadi David, Hankinson School District , "Brush Up!"

2nd Finalist: Kardelen Hanson, Hankinson School District , "Examining the Effects of Media-Related Confirmation Bias on Adults "

3rd Finalist: Patrick Shen, Davies High School , "Do Single-Cell Hi-C Data Follow a Power-law Decay?"

1st Alternate: Elise Elliot, Hankinson School District , "Analysis of Topsoil Erosion Prevention"

2nd Alternate: Brayden Sutherland, Lisbon School District , "A Study on the Relationship Between Retention and Work Ethic"

3rd Alternate: Lillian Mittleider, Kidder County School District , "The Effects of Distracted Driving"

Junior Division Sweepstakes Winners

The first place (Sweepstakes) winner received a gold state plaque, a \$150 cash award from the ND IDeA Network of Biomedical Research Excellence.

The second place (Sweepstakes Runner-Up) winner received a silver plaque and a \$100 cash award from the ND IDeA Network of Biomedical Research Excellence.

Junior Division 1st Place – Sweepstakes Winner

Layton Pribula, Blake Solberg, Schroeder Middle School , "Riding the Waves"

Junior Division 2nd Place – Sweepstakes Runner-Up

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

Junior Division Place Winners

All first and second place winners received a gold plaque. All third, fourth, and fifth place winners received a silver plaque.

Northwest Region

1st Place: Landon Gaudreau, ASB School District , "Can Foil Reflect Indirect Heat"

2nd Place: Kiya Sparks, Tioga School District , "Environmental Influences On Worms & Compost"

3rd Place: Macie Fugate, East Fairview School District , "Getting Started"

4th Place: Jake Schlothauer, East Fairview School District , "Sud Studies"

5th Place: Ty Poulsen, East Fairview School District , "Wasteful Wipes"

Northeast Region

1st Place: Amaa Wijetunga, South Middle School , "FilteriCoffee Grounds For Construction"

2nd Place: Ella Lizakowski, Schroeder Middle School , "Green Grass"

3rd Place: Wyatt Larson, Schroeder Middle School , "Beat the Heat"

4th Place: Sean Oncel, Schroeder Middle School , "Power of Colors"

5th Place: Micah Jorgenson, Schroeder Middle School , "Flight Plan"

Southwest Central Region

1st Place: Brooklyn Hepper, Flasher School District , "Deflection In Various Bridge Types"

2nd Place: Jocelyn Zingg, Flasher School District , "Beneficial Biogas"

3rd Place: Ava Hauck, Dickinson School District , "Got Shades?"

4th Place: Cassy Hartman, Flasher School District , "Effect Of Starter Fertilization On North Dakota Crops"

5th Place: Madalyn Bohl, Flasher School District , "Effect Of Acid Rain On Seed Germination"

Southeast Region

1st Place: Keegan Isakson, Kidder County School District , "The Danger of Distracted Driving"

2nd Place: Skylar Johnson, Lisbon School District , "How Safe Is Your Livestocks' Water?"

3rd Place: Alex Jean, Hankinson School District , "Does What You Do Effect Your Hand Strength?"

4th Place: Avery Schoonover, Kidder County School District , "Introvert Vs. Extrovert Who Has the Better Memory"

5th Place: Amla Prochnow, Hankinson School District , "The Application of Citrus Extract as an Antimicrobial Alternative"

Agriculture/Soil Science

Farmers Union Insurance - North Dakota

Project Related to Agriculture

2 Winners: Senior Division: Monetary Award of \$50 And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

Summer Fleck, Flasher School District , "Conception Rate in Cattle As Affected By Grade Of Transplanted In Vitro Fertilization Embryos"

Farmers Union Insurance - North Dakota

Project Related to Agriculture

2 Winners: Junior Division: Monetary Award of \$25 And a Certificate

Jocelyn Zingg, Flasher School District , "Beneficial Biogas"

Macie Fugate, East Fairview School District , "Getting Started"

North Dakota Farm Bureau

Project Related to Agriculture

2 Winners: Senior Division: Monetary Award of \$25 And a Certificate

Grant Hauge, Flasher School District , "An Analysis Of Nitrates In Sorghum, Based On Moisture And Timing"

Brooke Vachal, Tioga School District , "Cattle Weaning"

North Dakota Farm Bureau

Project Related to Agriculture

2 Winners: Junior Division: Monetary Award of \$25 And a Certificate

Kiya Sparks, Tioga School District , "Environmental Influences On Worms & Compost"

Abigail Ferguson, Tioga School District , "The Power Of Grazing"

Chemistry/Biochemistry

Department of Chemistry

Project in Chemistry

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Nevaeh Barten, Williston JH School District , "Mooving From Milk To Plastic.... Udderly Amazing"

Department of Chemistry

Project in Chemistry

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

American Chemical Society-Red River Valley Section

Project in Field of Chemistry

1 Winner: Junior Division: \$100 Barnes and Noble Gift Card, A Periodic Table Scroll Pen, And a Certificate

Brenna Eckroth, Flasher School District , "An Analysis Of Toothpaste Efficacy Using Potable Solution Part II"

American Chemical Society-Red River Valley Section

Project in Field of Chemistry

1 Winner: Senior Division: \$100 Barnes and Noble Gift Card, A Periodic Table Scroll Pen, And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

NDSSEF Association

Project in Biochemistry

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Amla Prochnow, Hankinson School District , "The Application of Citrus Extract as an Antimicrobial Alternative"

NDSSEF Association

Project in Biochemistry

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

Earth/Atmospheric Sciences

Department of Atmospheric Sciences

Project in Atmospheric Sciences

1 Winner: Junior or Senior Division: Monetary Award of \$100 And a Certificate

Ava Hauck, Dickinson School District , "Got Shades?"

Department of Geography

Project in Geography

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Ava Hauck, Dickinson School District , "Got Shades?"

Department of Geography

Project in Geography

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Elise Elliot, Hankinson School District , "Analysis of Topsoil Erosion Prevention"

Harold Hamm School of Geology & Geological Engineering

Project in Geology/Geological Engineering

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Madalyn Bohl, Flasher School District , "Effect Of Acid Rain On Seed Germination"

Harold Hamm School of Geology & Geological Engineering

Project in Geology/Geological Engineering

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Josie Fernholz, Trenton School District , "Agriculture On Earth vs The Moon"

North Dakota Geological Society

Project in Field of Geology or Earth Science

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Madalyn Bohl, Flasher School District , "Effect Of Acid Rain On Seed Germination"

North Dakota Geological Society

Project in Field of Geology or Earth Science

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Elise Elliot, Hankinson School District , "Analysis of Topsoil Erosion Prevention"

National Weather Service

Project Related to Meteorology

1 Winner: Junior Division: Certificate

Malory Garcia, Tioga School District , "Solar Eclipse"

National Weather Service

Project Related to Meteorology

1 Winner: Senior Division: Certificate

Grant Hauge, Flasher School District , "An Analysis Of Nitrates In Sorghum, Based On Moisture And Timing"

Association For Women Geoscientists

Project Related to Geosciences

1 Winner (Must Be A Female Exhibitor): Junior or Senior Division: Certificate

Elise Elliot, Hankinson School District , "Analysis of Topsoil Erosion Prevention"

National Oceanic & Atmospheric Administration

Project Related to Improved Understanding of the Earth's Processes

1 Winner: Junior Division: Certificate And a Medallion

Madalyn Bohl, Flasher School District , "Effect Of Acid Rain On Seed Germination"

NASA Earth System Science Award

Project Related to Earth's Interconnected Systems

1 Winner: Junior or Senior Division: Certificate

Chaskee Schmidt, Flasher School District , "An Analysis Of Water Source Quality As Affected By Bacteria Introduced Through Carcass Decomposition"

National Geographic Society

Project Related to Issues of Oceans, Lands, Wildlife, Human History & Cultures, and Human Ingenuity

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Grant Hauge, Flasher School District , "An Analysis Of Nitrates In Sorghum, Based On Moisture And Timing"

Energy/Power/Electricity

Otter Tail Power Company

Project Related to Energy or Electricity

3 Winners: Senior Division: Monetary Award of \$50 And a Certificate

Xzander Schwartz, Trenton School District , "Magnetic Suspension"

Hayden Fischer, Flasher School District , "How Much Weight Does It Take To Drop A Maglev Train?"

Cody Bahm, Flasher School District , "Bullet Destruction"

Otter Tail Power Company

Project Related to Energy or Electricity

2 Winners: Junior Division: Monetary Award of \$50 And a Certificate

Jocelyn Zingg, Flasher School District , "Beneficial Biogas"

Alexander Evans, Scranton School District , "Comparing The Cost Efficiency Of Incandescent And LED Lightbulbs"

Xcel Energy

Project Related to Energy or Electricity

3 Winners: Junior Division: Monetary Award of \$25 And a Certificate

Ava Frolek , Lidgerwood School District , "Oxygen Overload "

Micah Jorgenson, Schroeder Middle School , "Flight Plan"

Ava Hauck, Dickinson School District , "Got Shades?"

Xcel Energy

Project Related to Energy or Electricity

3 Winners: Senior Division: Monetary Award of \$25 And a Certificate

Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

Jerrad Tyler Hiatt, Tioga School District , "What Types Of Wood Burn Hotter"

Patrick Shen, Davies High School , "Do Single-Cell Hi-C Data Follow a Power-law Decay?"

Enerplus

Project Related to Energy

2 Winners: Junior Division: Monetary Award of \$250 And a Certificate

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

Layton Pribula, Blake Solberg, Schroeder Middle School , "Riding the Waves"

Enerplus

Project Related to Energy

2 Winners: Senior Division: Monetary Award of \$250 And a Certificate

Gracie Nutt, Tioga School District , "Paramount Power Plow"

Riley Pederson, Tioga School District , "The Swamp Monster"

Engineering

Department of Petroleum Engineering

Project in Engineering

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate
Gracie Nutt, Tioga School District , "Paramount Power Plow"

College of Engineering and Mines

Project in Engineering

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate
Landon Gaudreau, ASB School District , "Can Foil Reflect Indirect Heat"

College of Engineering and Mines

Project in Engineering

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate
Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

College of Engineering and Mines

Project in Engineering (Female Winner)

1 Winner: Senior Division: Monetary Award of \$100 And a \$500 Engineering Scholarship And a Certificate
Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

Biomedical Engineering Program

Project in Biomedical Engineering

1 Winner: Junior Division: Monetary Award of \$75 And a Certificate
Layton Pribula, Blake Solberg, Schroeder Middle School , "Riding the Waves"

Biomedical Engineering Program

Project in Biomedical Engineering

1 Winner: Senior Division: Monetary Award of \$125 And a Certificate
Lyla Gillespie, Lisbon School District , "Which Sunscreen is Most Effective"

Society of Automotive Engineers

Project in Mobility Engineering

1 Winner: Junior Division: Monetary Award of \$125 And a Certificate
Micah Jorgenson, Schroeder Middle School , "Flight Plan"

Society of Automotive Engineers

Project in Mobility Engineering

1 Winner: Senior Division: Monetary Award of \$125 And a Certificate
Hayden Fischer, Flasher School District , "How Much Weight Does It Take To Drop A Maglev Train?"

NPS Metals a Division of Owen Industries

Project Related to Manufacturing

1 Winner: Senior Division: Monetary Award of \$300 And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

NPS Metals a Division of Owen Industries

Project Related to Manufacturing

1 Winner: Junior Division: Monetary Award of \$200 And a Certificate

Landon Gaudreau, ASB School District , "Can Foil Reflect Indirect Heat"

Engineering (Chemical)

Department of Chemical Engineering

Project in Chemical Engineering

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Marlene Perez, ASB School District , "Oil Spill Prototype C.A.B.S."

Department of Chemical Engineering

Project in Chemical Engineering

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Lyla Gillespie, Lisbon School District , "Which Sunscreen is Most Effective"

Engineering (Civil)

Department of Civil Engineering

Project in Civil Engineering

1 Winner: Junior Division: Monetary Award of \$25 And a Certificate

Brooklyn Hepper, Flasher School District , "Deflection In Various Bridge Types"

Department of Civil Engineering

Project in Civil Engineering

1 Winner: Senior Division: Monetary Award of \$25 And a Certificate

Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

Engineering (Electrical)

Dr. Richard Schultz Award - Department of Electrical Engineering

Project in Electrical Engineering

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Evelyn Chambers, Woodhaven Academy , "Generative AI: Can It Fool the Human Senses?"

Dr. Richard Schultz Award - Department of Electrical Engineering

Project in Electrical Engineering

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Gracie Nutt, Tioga School District , "Paramount Power Plow"

Engineering (Mechanical)

Department of Mechanical Engineering

Project in Mechanical Engineering

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

Department of Mechanical Engineering

Project in Mechanical Engineering

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Xzander Schwartz, Trenton School District , "Magnetic Suspension"

Environmental Sciences

College of Engineering and Mines

Project in Energy/Environmental Science

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Elise Elliot, Hankinson School District , "Analysis of Topsoil Erosion Prevention"

Ricoh Corporation

Project Related to Environmentally Friendly Businesses

1 Winner: Senior Division: Certificate

Gracie Nutt, Tioga School District , "Paramount Power Plow"

NDSSEF Association

Project Related to Environmental Remediation

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Amla Prochnow, Hankinson School District , "The Application of Citrus Extract as an Antimicrobial Alternative"

NDSSEF Association

Project Related to Environmental Remediation

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

Human Nutrition/Food Science

Hot Cakes Café & Lodging

Project That Has Emphasis on Food Quality or Food Safety

1 Winner: Junior Division: Monetary Award of \$25, T-Shirt, And a Certificate

Ty Poulsen, East Fairview School District , "Wasteful Wipes"

Hot Cakes Café & Lodging

Project That Has Emphasis on Food Quality or Food Safety

1 Winner: Senior Division: Monetary Award of \$25, T-Shirt, And a Certificate

Emma Taylor, Tioga School District , "Are Food Handler Gloves Really Beneficial?"

NDSSEF Association

Project Related to Human Nutrition or Food Science

2 Winners: Senior Division: Monetary Award of \$25 And a Certificate

Layla Krinke, Scranton School District , "The Public Knowledge Of Egg Labeling"

Taelyn Boldt, Flasher School District , "Toxicity In Energy Drinks"

NDSSEF Association

Project Related to Human Nutrition or Food Science

2 Winners: Junior Division: Monetary Award of \$25 And a Certificate

Denver Nelson, Hankinson School District , "Storing Your Fruit the Right Way"

Hailey Qual, Lisbon School District , "A Comparison of Bacterial Colonization on Animal Based Proteins versus Plant Based Proteins"

ISEF Alumni

ISEF Alumni

Project as Determined by ISEF Judges

1 Winner: Junior or Senior Division: Monetary Award of \$200 And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

ISEF Alumni

Project as Determined by ISEF Judges

1 Winner: Junior or Senior Division: Monetary Award of \$100 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

Life Sciences (animal & plant)

Department of Biomedical Sciences

Project in Area of Life Sciences (Molecular Biology Emphasis)

2 Winners: Junior Division: Monetary Award of \$50 each And a Certificate

Chloe Maychrzak, Scranton School District , "Smelling The Difference Between Real & Artificial Smells"

Austin Ulrich, Schroeder Middle School , "Smelly Beans"

Department of Biomedical Sciences

Project in Area of Life Sciences (Molecular Biology Emphasis)

2 Winners: Senior Division: Monetary Award of \$50 each And a Certificate

Sudiksha Singhal, Red River High School , "A Study of the Thermal Properties of Tissue and Fecal Matter to Investigate Potential Biomedical Applications of Thermography with a Focus on IBD"

James Gessey, Flasher School District , "Is It Worse Than Nicotine"

Department of Biology

Project in Biology

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Romana Eaton, Scranton School District , "Family Resemprints"

Department of Biology

Project in Biology

1 Winner: Senior Division: Monetary Award of \$100 And a \$500 Biology Scholarship And a Certificate

Patrick Shen, Davies High School , "Do Single-Cell Hi-C Data Follow a Power-law Decay?"

North Dakota Veterinary Medical Association

Project Related to Veterinary Medicine

1 Winner: Senior Division: Monetary Award of \$300 And a Certificate
Brooke Vachal, Tioga School District , "Cattle Weaning"

North Dakota Veterinary Medical Association

Project Related to Veterinary Medicine

1 Winner: Senior Division: Monetary Award of \$225 And a Certificate
Grant Hauge, Flasher School District , "An Analysis Of Nitrates In Sorghum, Based On Moisture And Timing"

North Dakota Veterinary Medical Association

Project Related to Veterinary Medicine

1 Winner: Junior Division: Monetary Award of \$75 And a Certificate
Skylar Johnson, Lisbon School District , "How Safe Is Your Livestocks' Water?"

Auxiliary to the North Dakota Veterinary Medical Association

Project Related to Veterinary Medicine

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate
Layla Krinke, Scranton School District , "The Public Knowledge Of Egg Labeling"

Society for In Vitro Biology

Project in the Area of Tissue Culture

1 Winner: 11th Grader Division: Certificate
Patrick Shen, Davies High School , "Do Single-Cell Hi-C Data Follow a Power-law Decay?"

NDSSEF Association

Project in Botany

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate
Haylee Mauch, Hankinson School District , "To Fertilize or Not to Fertilize...Which Kind is the Question"

NDSSEF Association

Project in Botany

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate
Josie Fernholz, Trenton School District , "Agriculture On Earth vs The Moon"

Mathematics/Computer Science

Mu Alpha Theta

Project Involving Modern Mathematics

1 Winner: Senior Division: Certificate

Riley Pederson, Tioga School District , "The Swamp Monster"

North Dakota Guaranty & Title Co.

Project Related to Computer Science (Emphasis in Artificial Intelligence)

1 Winner: Junior Division: Monetary Award of \$250 And a Certificate

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

Department of Mathematics

Project in Mathematics

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Layton Pribula, Blake Solberg, Schroeder Middle School , "Riding the Waves"

Department of Mathematics

Project in Mathematics

1 Winner: Senior Division: Monetary Award of \$100 And a \$500 Mathematics Scholarship And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

School of Electrical Engineering & Computer Science

Project in Computer Science

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

School of Electrical Engineering & Computer Science

Project in Computer Science

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Gracie Nutt, Tioga School District , "Paramount Power Plow"

Medicine/Health

ND IDEa Network of Biomedical Research Excellence

Project in Medical or Health Sciences

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Milla Fagerholt, Gianna Hall, Valley/Edinburg Middle School , "Hidden Hazards"

ND IDEa Network of Biomedical Research Excellence

Project in Medical or Health Sciences

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Daci Wells, Flasher School District , "Welding UV Radiation In Accordance With The Law Of Reflection"

School of Medicine & Health Sciences

Project in Medical or Health Sciences

1 Winner: Senior Division: Monetary Award of \$300 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

School of Medicine & Health Sciences

Project in Medical or Health Sciences

1 Winner: Senior Division: Monetary Award of \$150 And a Certificate

Sophia Hertz, Flasher School District , "Sanitation Rate Of UVC Light On CPAP Apparatus"

School of Medicine & Health Sciences

Project in Medical or Health Sciences

1 Winner: Junior Division: Monetary Award of \$300 And a Certificate

Amla Prochnow, Hankinson School District , "The Application of Citrus Extract as an Antimicrobial Alternative"

Department of Biomedical Sciences

Project in Pharmacology/Immunology

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Taelyn Boldt, Flasher School District , "Toxicity In Energy Drinks"

Department of Biomedical Sciences

Project in Pharmacology/Immunology

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

North Dakota Dental Foundation

Project Related to Dentistry

1 Winner: Junior Division: Monetary Award of \$50 And a Certificate

Brenna Eckroth, Flasher School District , "An Analysis Of Toothpaste Efficacy Using Potable Solution Part II"

North Dakota Dental Foundation

Project Related to Dentistry

2 Winners: Senior Division: Monetary Award of \$50 And a Certificate

Kenadi Houle, Trenton School District , "Lets Talk Germs"

Olivia Koehler, Hankinson School District , "Does Chewing Gum Impact the Bacteria In Your Mouth?"

North Dakota Academy of Family Physicians

Project Related to Medicine

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Mykenzie Winkler, Grant County School District , "Stressed Out?"

American Society for Clinical Laboratory Science - North Dakota

Project Related to Laboratory Medicine

3 Winners: Senior Division: Monetary Award of \$50 And a Certificate

Taylor Zenker, Flasher School District , "Synthetic vs. Natural"

James Gessey, Flasher School District , "Is It Worse Than Nicotine"

Kaitlyn Hauge, Flasher School District , "Mask Efficacy"

American Society for Clinical Laboratory Science - North Dakota

Project Related to Laboratory Medicine

3 Winners: Junior Division: Monetary Award of \$50 And a Certificate

Carrie LaDuke, Flasher School District , "The Effect Of Disinfectant Wipes On Bacteria"

Jake Schlothauer, East Fairview School District , "Sud Studies"

Gracie Melberg, Tioga School District , "Dandelions & Their Health Benefits"

North Dakota Pharmacists Association

Project in Field of Pharmacology

1 Winner: Junior Division: Monetary Award of \$75 And a Certificate

Wyatt Larson, Schroeder Middle School , "Beat the Heat"

North Dakota Pharmacists Association

Project in Field of Pharmacology

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

James Gessey, Flasher School District , "Is It Worse Than Nicotine"

Microbiology

Department of Biomedical Sciences

Project in Microbiology/Infectious Disease

2 Winners: Junior Division: Monetary Award of \$50 each And a Certificate

Taelyn Boldt, Flasher School District , "Toxicity In Energy Drinks"

Skylar Johnson, Lisbon School District , "How Safe Is Your Livestocks' Water?"

Department of Biomedical Sciences

Project in Microbiology/Infectious Disease

2 Winners: Senior Division: Monetary Award of \$100 each And a Certificate

Karlee Hoyt, Trenton School District , "Water Daphnia Vs. Marine Pollutants"

Denver Nelson, Hankinson School District , "Storing Your Fruit the Right Way"

Department of Biomedical Sciences

Project in Medical or Health Sciences

1 Winner: Junior Division: Monetary Award of \$100 And a Certificate

Amla Prochnow, Hankinson School District , "The Application of Citrus Extract as an Antimicrobial Alternative"

Department of Biomedical Sciences

Project in Medical or Health Sciences

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyretic Pharmaceuticals And Antibiotics"

Military/Navy

Navy

Project (All Categories Considered)

2 Winners: Senior Division: Educational Recognition Award Valued at \$75, A Medallion, And a Certificate

Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

Josie Fernholz, Trenton School District , "Agriculture On Earth vs The Moon"

Navy

Project (All Categories Considered)

2 Winners: Junior Division: Medallion And a Certificate

Marlene Perez, ASB School District , "Oil Spill Prototype C.A.B.S."

Che Yu, South Middle School , "Self-driving car made from Raspberry Pi with 360 degrees Lidar sensing"

Military/North Dakota Army National Guard

North Dakota Army National Guard

Project That Has Applications Useful to North Dakota Army National Guard

1 Winner: Junior Division: Backpack With Assortment of Items

Milla Fagerholt, Gianna Hall, Valley/Edinburg Middle School , "Hidden Hazards"

North Dakota Army National Guard

Project That Has Applications Useful to North Dakota Army National Guard

1 Winner: Senior Division: Duffle Bag With Assortment of Items

Cody Bahm, Flasher School District , "Bullet Destruction"

Military/United States Air Force

Air Force

Project That Has Applications Useful to Air Force

4 Winners: Junior or Senior Division: An Over-the-Shoulder Sling Pack, Power Bank Charger, Dog Tag USB Flash Drive, A Dual USB Car Charger, And a Certificate

Micah Jorgenson, Schroeder Middle School , "Flight Plan"

Evelyn Chambers, Woodhaven Academy , "Generative AI: Can It Fool the Human Senses?"

Gracie Nutt, Tioga School District , "Paramount Power Plow"

Xzander Schwartz, Trenton School District , "Magnetic Suspension"

Physics/Astronomy

Department of Physics & Astrophysics

Project in Physics & Astronomy

2 Winners: Junior Division: Monetary Award of \$100 And a Certificate

Amaa Wijetunga, South Middle School , "FilteriCoffee Grounds For Construction"

Aerin Salgado, Kenai Auch, Schroeder Middle School , "It's Electric!"

Department of Physics & Astrophysics

Project in Physics & Astronomy

1 Winner: Senior Division: Monetary Award of \$100 And a \$500 Physics Scholarship And a Certificate

Hayden Fischer, Flasher School District , "How Much Weight Does It Take To Drop A Maglev Train?"

United States Metric Association

Project Using Metric System for Measurements

5 Winners: Junior Division: Certificate

Milla Fagerholt, Gianna Hall, Valley/Edinburg Middle School , "Hidden Hazards"

Harrison Mathre, Schroeder Middle School , "Frozone"

Aerin Salgado, Kenai Auch, Schroeder Middle School , "It's Electric!"

Ava Hauck, Dickinson School District , "Got Shades?"

Layton Pribula, Blake Solberg, Schroeder Middle School , "Riding the Waves"

Social/Behavioral Sciences

Department of Psychology

Project in Psychology or Behavioral Science

2 Winners: Junior Division: Monetary Award of \$100 And a Certificate

Layla Krinke, Scranton School District , "The Public Knowledge Of Egg Labeling"

Evelyn Chambers, Woodhaven Academy , "Generative AI: Can It Fool the Human Senses?"

Department of Psychology

Project in Psychology or Behavioral Science

2 Winners: Senior Division: Monetary Award of \$100 And a Certificate

James Gessey, Flasher School District , "Is It Worse Than Nicotine"

Karady Evans, Scranton School District , "Difference Between Teaching Different Types Of Kinesthetic Lessons To Elementary Aged Students, While Teaching Ag In The Classroom"

Virginia George Inheritance Fund

Project in Social or Behavioral Science

1 Winner: Senior Division: Monetary Award of \$50 And a Certificate

Kardelen Hanson, Hankinson School District , "Examining the Effects of Media-Related Confirmation Bias on Adults"

Virginia George Inheritance Fund

Project in Social or Behavioral Science

1 Winner: Junior Division: Monetary Award of \$25 And a Certificate

Layla Krinke, Scranton School District , "The Public Knowledge Of Egg Labeling"

American Psychological Association

Project Related to Psychology

1 Winner: Junior or Senior Division: Certificate

Evelyn Chambers, Woodhaven Academy , "Generative AI: Can It Fool the Human Senses?"

Sweepstakes

Yale Science And Engineering Association

Project in Areas of Computer Science

1 Winner: Senior Division: Medallion And a Certificate

Gavin Kratcha, Hankinson School District , "Sustainable Hydroponic Production Using Automated Agricultural Nutrient Reclamation"

Regeneron Biomedical Science Award

Project Related to Biomedical Science and Research

1 Winner: Senior Division: Monetary Award of \$375 And a Certificate

Jada Bonogofsky, Flasher School District , "Antimicrobial Resistance Of A Biofilm-Forming Pathogen Probed With Antipyreptic Pharmaceuticals And Antibiotics"

Water Quality

American Water Works Association

Project Related to Drinking Water Quality

1 Winner: Junior Division: Monetary Award of \$75 And a Certificate

Skylar Johnson, Lisbon School District , "How Safe Is Your Livestocks' Water?"

American Water Works Association

Project Related to Drinking Water Quality

1 Winner: Senior Division: Monetary Award of \$75 And a Certificate

Cora Oster, Lisbon School District , "Does Water Temperature Affect Bacteria Colonization"

North Dakota Water Environment Association

Project Related to Water Quality

1 Winner: Senior Division: Monetary Award of \$75 And a Certificate

Malory Kemp, Cavalier School District , "Sustainable Solutions - Comparing Electrochemical vs Traditional Methods of Wastewater Remediation"

North Dakota Water Environment Association

Project Related to Water Quality

1 Winner: Junior Division: Monetary Award of \$75 And a Certificate

Madalyn Bohl, Flasher School District , "Effect Of Acid Rain On Seed Germination"

North Dakota Rural Water Systems Association

Project Related to Water Quality

1 Winner: Senior Division: Monetary Award of \$100 And a Certificate

Karlee Hoyt, Trenton School District , "Water Daphnia Vs. Marine Pollutants"

Water Environment Federation

Project Related to Water Quality or Water Conditions

1 Winner: Junior or Senior Division: Certificate

Chaskee Schmidt, Flasher School District , "An Analysis Of Water Source Quality As Affected By Bacteria Introduced Through Carcass Decomposition"