

INTERNATIONAL SCIENCE AND ENGINEERING FAIR: selected to go directly to international competition in Portland, Oregon, May 9-15, 2004:

FINALISTS:

Twin Cities:

1020t, Adam Yock: "Sun & Shade Acclimation of Photosynthetic in *G. aeruginosum*"

1022t, William Mitchell: "Suzuki Coupling: Synthesis of Ferrocene-capped Thiophene"

St. Paul:

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

Western Suburbs:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

1054w, Akash Kumar: "Proteome Response of *Staph. aureus* to Iron Limitation"

ALTERNATES:

St. Paul:

1035s, Nathaniel Flath: "A Monte-Carlo Model of Island Biodiversity"

Twin Cities:

1032t, Sara Brinda: "Effect of Permethrin on Monarch Butterfly Larvae"

1063t, Lisa Marquardt: "Drumsticks & Sound"

Western Suburbs:

1052w, Ning Zhou: "Quantitative Trait Loci Modulating Corpus Callosum Size"

1019w, Kyrstin Underbakke: "Effective Application of Gibberellic Acid on *Raphanus sativus*"

SPONSORS AWARDS: Winners must be present at the Awards Ceremony. Awarded to the best projects that represent TCRSF to the sponsors.

Bronze Level: Ribbon

General E. W. Rawlings Chapter, Air Force Association

8046t, Jonathan Killian: "Flight with Ice Buildup on Airfoils"

Twin City Catering

1051t, Allison Schons: "Effect of Topical Antibiotics on Bacteria"

Silver Level: Plaque

Alliant Techsystems:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

Ecolab:

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

Gold Level: Plaque

The Medtronic Foundation

1052w, Ning Zhou: "Quantitative Trait Loci Modulating Corpus Callosum Size"

St. Paul Youth Fund

1025s, Kalia Her: "Can Spontaneous Combustion Be Achieved with Various Chemicals"

Platinum Level: Plaque:

3M Foundation

1054w, Akash Kumar: "Proteome Response of *Staph. aureus* to Iron Limitation"

University of Minnesota

1009t, Jane Vollbrecht: "Effects of Choice Learning on 4th Graders"

DISCOVERY JUNIOR SCIENCE COMPETITION: Top students from 6th, 7th and 8th grades are nominated to the next level of competition, and will receive a pin and a certificate.

6018s, Perihan MacDonald: "Is a Fixed End or Simply Supported Beam Stronger?"

6019s, Keefe Tarnow: "Match Rockets"

6012s, Madeline McCloughan: "Effect of Stir Time on Gluten Production"

- 6025t, Maggie Dolan: "Raising Blood Glucose"
6033s, Madelyne Heyman: "Cover Your Ears"
7103t, Kayla Benson: "Rats in a Maze"
7104s, Brendan Boylan: "Fly Eyes"
7072w, Lindsey Beard: "Stop Freezing Your Head Off"
7089t, Stephen Buckeye: "Metals and Their Heat Conducting Properties"
7043w, Angela Offerman: "Chemical Effects on Freshwater Ecosystems"
7015s, Christopher Brands: "Growing Tall, Growing Strong"
7011w, Sara Steigauf: "Iron in Different Fruits & Vegetables"
7009s, Zachary Kagan: "The Gas We Pass"
7012t, Tiffanie Stone: "Got Bt?"
8004s, Elisabeth Edgerton: "Behavior Modification & Extinction in Male & Female Mice"
8015w, Alexandra Wysopal: "Do Right Handed People Have Better Sense of Taste"
8022s, Margaret Johnson: "Chemical Hormesis"
8044t, Matt Jonza: "Snow Crystal"
8045t, Madelyn Kettner: "Which Vinyl Siding is Best Against Fire & Hail?"
8048t, Daniel Osborne: "Air Filters"
8066t, Annie Georges: "Effects of Light & Age on Contrast Sensitivity"
8073t, Michael Ward: "Effects of Caffeine on Concentration"
8075s, Nada Abou-karam: "Saving Our Antibiotics"
8109t, Elise Cleereman & Katrina Krogh : "How Second-hand Smoke Affects Tardigrades in Cryptobiosis"
6002s, Teddy Johnson: "Golden Beauty: Math or Myth?"
6013t, Joshua Prince: "Will Higher Cost Batteries Last Longer?"
6016t, Daphne Welter: "Oxygenated Tomatoes"
6027t, Karissa Johnson: "The Regulator"
6038t, Chris Wieteki: "Which catapult is the Most Accurate"
6041s, Pat Bode & Tom Pane: "Supports"
8035w, Kyra Underbakke: "Inline Frames & Tables in Web Design"
8049w, Kyle Randolph: "Quest for the Optimum "Box Kite" Tumbleweed Design"
8055t, Cassy Meyer: "Sound Barriers"
8094t, Anneva Knapp: "A Parakeet's Response to Native Bird Sounds"
8099s, Tessa Bisek & Megan Westerheide: "Power of Suggestion"

MINNESOTA ACADEMY OF SCIENCE STATE FAIR: Projects selected for competition in St. Paul, Minnesota, March 28-30, 2004

High School

- 1003t, Zachary Howland: "Effect of Caffeine on Sensory & Short-term Memory"
1004t, Jenny Hulke: "Effect of Film Speed on Cognitive Retention & Persuasion"
1005t, Grant Johnson: "Comparison of Advertizing & Content in Media"
1008t, Elizabeth Shaw: "Depression Screening of Children & Adolescents with Diabetes"
1012t, Erin Austad: "Effect of Bluelight on Potato Tuberization"
1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"
1019w, Kyrstin Underbakke: "Effective Application of Gibberellic Acid on Raphanus sativus"
1020t, Adam Yock: "Sun & Shade Acclimation of Photosynthetic in G. aeruginosum"
1022t, William Mitchell: "Suzuki Coupling: Synthesis of Ferrocene-capped Thiophene"
1028t, Michael Vallez: "Effects of CPU Frequencies"
1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"
1032t, Sara Brinda: "Effect of Permethrin on Monarch Butterfly Larvae"
1038w, Emily Stiever: "Tetracycline Resistance in Swine Farm Isolates"

- 1039w, Leah Carlson: "Neuroprotective Effects of TUDCA on Animal Model Parkinson's"
1046t, Paige Nesser: "Tooth Enamel Discoloration"
1047t, Kirsten Olson: "Anthropometrics"
1048w, Yuliya Perepelitsa: "Follow-up of Extremely Premature Infants with Perforated Bowel"
1052w, Ning Zhou: "Quantitative Trait Loci Modulating Corpus Callosum Size"
1054w, Akash Kumar: "Proteome Response of Staph. aureus to Iron Limitation"
1056t, Stephen Anderson: "Cost of Halogen, Fluorescent & Incandescent"
1059t, Isaac Brown: "Superconductor/maganite Bilayer Thin Films in Cross Section"
1071t, Braden Schuenke & Jason Vaurio : "Photovoltaics & the Search of a Solar Constant"
1072t, Lindsay Quass & Libby Strait: "Model Shape vs. Lateral Sway & Wind Pressure"
1074w, Brian Cocker & Matt Hennen: "Trebuchet"
1078t, Laura Heeter & Kristina Naranjo-Rivera: "The 2p-3d Electron Transition Multiplet of Argon 13"
1035s, Nathaniel Flath: "A Monte-Carlo Model of Island Biodiversity"
1063t, Lisa Marquardt: "Drumsticks & Sound"
1025s, Kalia Her: "Can Spontaneous Combustion Be Achieved with Various Chemicals"

Grade 8

- 8004s, Elisabeth Edgerton: "Behavior Modification & Extinction in Male & Female Mice"
8006s, Jasmine Erickson: "Generic vs. Name Brand"
8011w, Sarah Healy: "Handwriting Analysis"
8015w, Alexandra Wysopal: "Do Right Handed People Have Better Sense of Taste"
8022s, Margaret Johnson: "Chemical Hormesis"
8028t, Kate Letourneau: "Juices & Pennies"
8035w, Kyra Underbakke: "Inline Frames & Tables in Web Design"
8044t, Matt Jonza: "Snow Crystal"
8045t, Madelyn Kettner: "Which Vinyl Siding is Best Against Fire & Hail?"
8048t, Daniel Osborne: "Air Filters"
8053s, Andrew Burnes: "Lichens as Possible Indicators of Air Quality"
8055t, Cassy Meyer: "Sound Barriers"
8066t, Annie Georges: "Effects of Light & Age on Contrast Sensitivity"
8075s, Nada Abou-karam: "Saving Our Antibiotics"
8076t, Erin Boland: "Bacteria's Immune System: Does It Have What It Takes?"
8085t, John McLean: "Puck Mania"
8094t, Anneva Knapp: "A Parakeet's Response to Native Bird Sounds"
8099s, Tessa Bisek & Megan Westerheide: "Power of Suggestion"
8106t, Sandy Clasen & Mandi Randall: "Denture Adhesives"
8109t, Elise Cleereman & Katrina Krogh: "How Second-hand Smoke Affects Tardigrades in Cryptobiosis"
8049w, Kyle Randolph: "Quest for the Optimum "Box Kite" Tumbleweed Design"
8073t, Michael Ward: "Effects of Caffeine on Concentration"

Grade 7

- 7116s, Ann Wolski: "Natural Insulation"
7115s, Abigail Wold: "Disintegrating Cow Eyeballs with Household Cleaners"
7104s, Brendan Boylan: "Fly Eyes"
7094t, Timothy Grimes: "Electricity!"
7089t, Stephen Buckeye: "Metals and Their Heat Conducting Properties"
7088t, John Bliss: "Driving Nails into Different Density Woods"
7076w, Ummul Kathawalla: "Relationship Between Food Consumption & Sleep"
7073t, Peter Capecci: "Effect of Music on Blood Pressure & Heart Rate"
7072w, Lindsey Beard: "Stop Freezing Your Head Off"

- 7066t, Kelly O'Grady: "Temperature Effects on Respiration & Metabolism of Minnows"
7059s, Austin Granger: "Effect of Drop Angle on Rollercoaster Speed"
7049t, Beth Turbak: "Baking"
7043w, Angela Offerman: "Chemical Effects on Freshwater Ecosystems"
7032w, Meghan Donaghy: "How Sense of Smell Affects Taste"
7027s, Carolyn Scorpio: "Talking to Plants"
7015?s, Christopher Brands: "Growing Tall, Growing Strong"
7012t, Tiffanie Stone: "Got Bt?"
7011w, Sara Steigauf: "Iron in Different Fruits & Vegetables"
7009s, Zachary Kagan: "The Gas We Pass"
7006t, Caroline Schevenius: "How Do You Remember?"
7124t, Ashlee Kephart: "Effects of Earthworms on Plants"
7042t, Lindsay Nelson: "Hot Tips for Tanning (Using the Right Sunscreen)"
7103t, Kayla Benson: "Rats in a Maze"

RESEARCH PAPERS SELECTED FOR COMPETITION AT THE MINNESOTA ACADEMY OF SCIENCE STATE FAIR, DULUTH, MINNESOTA IN APRIL 11-13, 2003.

Senior Division:

- P30, A. Noel Suri: "Determination of the most efficient construct... Maize Cells"
P32, Ning Zhou: "Quantitative Trait Loci ... Mouse Brain"
P34, Sarah Sabalasky: "Does Birth Order Affect Participation in Extracurricular Activities"
P39, Lisa Marquardt: "Drumsticks and Sound"
P42, Sarah Fontana: "Stereopsis Abilities of Athletes vs. Nonathletes"
P46, Joshua Rieck: "The Effects of Golf Club Length and Weight on Shot Distance"
P48, Sarah Cowles: "The Effects of Audio and Visual Stimulation ... Seventh Graders"
P49, Kirsten Olson: "The Effect of Gender, Age, and Race on ... Human Body Meas."
P50, Michael Vallez: "PC CPU frequencies and their effect on the ... L2 cache"
P54, Kyle Braam: "An Examination of Apery's Constant"
P55, Matthew Pham: "The accuracy of a computer program's text-to-audio translator"
P56, Phillip Schmidt: "Differences in Flight of Disc-Golf Discs"
P57, Richard Grider: "Effects of Transcutaneous Electric Nerve Stimulation ... Muscles"
P59, Sara Brinda: "The Effects of Mosquito Control Applications of Permethrin on..."
P60, Leah Carlson: "Neuroprotective Effects of TUDCA on Animal Model Parkinson's"
P62, Akash Kumar: "Characterization of Proteome Response of ... Iron Limitation"
P63, Isaac Bruce: "Superconductor/Manganite Bilayer Thin Films in Cross Section"
P65, Adam Yock: "Sun and Shade Acclimation of the Photosynthetic Apparatus in..."
P66, Elizabeth Shaw: "Depression Screening of Children and Adolescents with Diabetes"
P67, William Mitchell: "Susuki Coupling: Aqueous and Anhydrous Synthesis of ... Thiophene"
P68, Erin Austad: "The Effects of Blue Light at 440 nm on Potato Tuberization..."
P70, Mark Ledford: "Host Fish for the Snuffbox Mussell"
P71, Patrick McCarthy: "Nitric Oxide Synthase in Mouse Brain Tissue that Exhibits..."

Junior Division:

- P10, Kelly O'Grady: "Environmental Temperature Effects... Minnows"
P11, Theodore Sorensen: "Osgood-Schlatter Disease"
P12, Linnea Homan: "Effects of the Environment on Frog Hibernation"

TOP SENIOR HIGH PAPERS: Trophy

First: P32. Ning Zhou

Second: P66 Elizabeth Shaw

Third: P67 William Mitchell

TOP JUNIOR HIGH PAPERS: Trophy

- First P11** Theodore Sorensen
Second: P10 Kelly O'Grady
Third: P12 Linnea Holman

MINNESOTA CHAPTER OF THE AMERICAN FISHERIES SOCIETY:

Senior High

1068t, Mikala Steenholdt: "Sound Frequency Affects on Goldfish"

Junior High

7066t, Kelly O'Grady: "Temperature Effects on Respiration & Metabolism of Minnows"

DEPARTMENT OF RHETORIC, UNIVERSITY OF MINNESOTA:

1078t, Laura Heeter & Kristina Naranjo-Rivera: "The 2p-3d Electron Transition Multiplet of Argon 13"

HENNEPIN MEDICAL SOCIETY ALLIANCE: Certificate and \$50 savings bond

Senior High:

1052w, Ning Zhou: "Quantitative Trait Loci Modulating Corpus Callosum Size"

Junior High:

8066t, Annie Georges: "Effects of Light & Age on Contrast Sensitivity"

ASSOCIATION OF WOMEN GEOSCIENTISTS: Certificate to female whose project exemplifies high standards of innovativeness and scientific excellence in the geosciences.

Twin Cities:

8039t, Kailey Shern: "Effect of Updraft on Tornado Size"

St. Paul:

7057s, Chee Xiong: "Water Retention of Different Soils"

Western Suburbs:

7043w, Angela Offerman: "Chemical Effects on Freshwater Ecosystems"

SOCIETY FOR IN VITRO BIOLOGY: Certificate to the most outstanding 11th grade student exhibiting in the areas of plant or animal in vitro biology or tissue culture.

1039w, Leah Carlson: "Neuroprotective Effects of TUDCA on Animal Model Parkinson's"

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES: Certificate to the students who creatively illustrate and expand on healthy lifestyles, healthy diets and no tobacco use.

Twin Cities:

8109t, Elise Cleereman & Katrina Krogh: "How Second-hand Smoke Affects Tardigrades in Cryptobiosis"

Western Suburbs:

1044w, Todd Bower: "Exercise vs. Diet"

EAST-SIDE SCIENCE CLUB ALUMNI AWARDS: Medals are presented to nine outstanding youths that demonstrate innovation and creativeness in project development.

6002s, Teddy Johnson: "Golden Beauty: Math or Myth?"

6020t, Blake Vandekamp: "Roller Coaster Launching System"

6019s, Keefe Tarnow: "Match Rockets"

6032t, Noah Corbeil-Wild: "Skate Mania"

- 7069s**, Hannah Diment: "Effect of Sample Size on Experimental Accuracy"
7043w, Angela Offerman: "Chemical Effects on Freshwater Ecosystems"
7009s, Zachary Kagan: "The Gas We Pass"
8015w, Alexandra Wysopal: "Do Right Handed People Have Better Sense of Taste"
8055t, Cassy Meyer: "Sound Barriers"
8087s, Charlie Moos: "Optimizing Windmill Efficiency"
8039t, Kailey Shern: "Effect of Updraft on Tornado Size"
8040t, Justin Thill: "Erosion"

MU ALPHA THETA

Twin Cities

- 1040t**, Kyle Braam: "Examination of Apery's Constant"

St. Paul:

- 1035s**, Nathaniel Flath: "A Monte-Carlo Model of Island Biodiversity"

Western Suburbs:

- 8049w**, Kyle Randolph: "Quest for the Optimum 'Box Kite' Tumbleweed Design"

AMERICAN METEOROLOGICAL SOCIETY: Certificates or outstanding achievement in Meteorological Science.

Twin Cities:

- 8039t**, Kailey Shern: "Effect of Updraft on Tornado Size"
8044t, **Matt Jonza**: "Snow Crystal"
8057t, Paula Thelen: "Homemade Weather Instruments"

St. Paul:

- 7068s**, Teresa Yang: "Effects of Acid Rain on Seed Germination"
7018s, Sam Dougherty: "Effects of Cold Temperatures on Plants"

Western Suburbs:

- 7064w**, Anthony Kusters: "Soil + Wind, Water & Glaciers = Erosion"

EASTMAN KODAK COMPANY: Camera kit to student and school.

Twin Cities:

- 7040t**, Sean Luna: "Identifying Metals by Color of Flame", **Teacher:** Judy Rouse, Holy Trinity School

St. Paul:

- 1017s**, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize", **Advisor:** Arvin Suri, Harding High School

Western Suburbs:

- 1074w**, Brian Cocker & Matt Hennen: "Trebuchet", **Teacher:** Kris Bergk, Maranatha Christian School

U.S. METRIC ASSOCIATION: Certificate to the student whose project involves a significant amount of quantitative measurement and which best uses the metric system.

Twin Cities:

- 1022t**, William Mitchell: "Suzuki Coupling: Synthesis of Ferrocene-capped Thiophene"

St. Paul:

- 1017s**, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

Western Suburbs:

- 1039w**, Leah Carlson: "Neuroprotective Effects of TUDCA on Animal Model Parkinson's"

INTEL EXCELLENCE IN COMPUTER SCIENCE AWARD: Certificate and \$200 check (in the mail)

Twin Cities:

1027t, Matthew Gustavson: "A Randon Number Generator is Not Random"

AMERICAN PSYCHOLOGICAL ASSOCIATION

Twin Cities:

1005t, Grant Johnson: "Comparison of Advertizing & Content in Media"

Western Suburbs:

1007w, Mandy Robinson: "Sleeping Habits: Genetic or Developed"

STOCKHOLM JUNIOR WATER PRIZE: Certificate and entry in further competition to the student whose project is aimed at improving the quality of water, water resource management, water protection or water and wastewater treatment.

1037t, Shannon Stemper: "Pollutants at Mississippi River Sites"

8037t, Regina Quandt: "Insulation of Water"

8040t, Justin Thill: "Erosion"

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS: Certificate, pin

Twin Cities:

1063t, Lisa Marquardt: "Drumsticks & Sound"

St. Paul:

7059s, Austin Granger: "Effect of Drop Angle on Rollercoaster Speed"

Western Suburbs:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

CONSULTING ENGINEERS COUNCIL OF MINNESOTA: Certificate

AMERICAL COUNCIL OF ENGINEERING COMPANIES:

Grand Award: Calculator

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

Honor Awards: Certificate

1056t, Stephen Anderson: "Cost of Halogen, Fluorescent & Incandescent"

8046t, Jonathan Killian: "Flight with Ice Buildup on Airfoils"

7060s, Joe Kreisman: "Strength of Bridges"

6018s, Perihan MacDonald: "Is a Fixed End or Simply Supported Beam Stronger?"

INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING: Certificate & entry in further competition

1012t, Erin Austad: "Effect of Bluelight on Potato Tuberization"

1071t, Braden Schuenke & Jason Vaurio: "Photovoltaics & the Search of a Solar Constant"

YALE SCIENCE AND ENGINEERING ASSOCIATION, INC: Certificate and medallion to the most outstanding eleventh grade exhibit in Computer Science, Engineering, Physics or Chemistry.

Twin Cities:

1060t, Sarah Farnes: "Color Accuracy of Brands of Still-photography Film"

ISEF ALUMNI AWARD:

Sponsor: Tamara Underbakke: \$25 and a certificate

8066t, Annie Georges: "Effects of Light & Age on Contrast Sensitivity"

Sponsor: Michael Lohman: for excellence in aviation, Glitter light

8061s, Nancy Dietman: "Geodesic Domes: An Equation for Weight Bearing"

MINNESOTA AGRICULTURE IN THE CLASSROOM:

Certificate and \$75 to the best project in agricultural sciences

Senior High:

1038w, Emily Stiever: "Tetracycline Resistance in Swine Farm Isolates"

Junior High:

7012t, Tiffanie Stone: "Got Bt?"

7022t, Elizabeth Houns: "Worms and Plant Growth: What's the Connection?"

Certificates and \$75 to the best research paper in agricultural science

USDA-AGRICULTURE RESEARCH SERVICE: Books related to the area of study

6016t, Daphne Welter: "Oxygenated Tomatoes"

8053s, Andrew Burnes: "Lichens as Possible Indicators of Air Quality"

8056s, Katie Spitzmueller: "Seed Needs"

1012t, Erin Austad: "Effect of Bluelight on Potato Tuberization"

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

MINNESOTA ASTRONOMICAL SOCIETY: Certificate & prize package

7055t, Chris Whaley: "Craters"

7092t, Emily Dewey: "Refraction in Action"

1078t, Laura Heeter & Kristina Naranjo-Rivera: "The 2p-3d Electron Transition Multiplet of Argon 13"

MINNESOTA SPACE FRONTIER SOCIETY: Certificate & prize package

6019s, Keefe Tarnow: "Match Rockets"

7030t, Van Wifvat: "Can Gravity Affect Grass?"

7054w, Erik Velgersdyk: "Up, Up and Away"

7102w, Emily Swanson: "Energy Force: Will Action Yield Equal but Opposite Reaction?"

8046t, Jonathan Killian: "Flight with Ice Buildup on Airfoils"

8049w, Kyle Randolph: "Quest for the Optimum "Box Kite" Tumbleweed Design"

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

1071t, Braden Schuenke & Jason Vaurio: "Photovoltaics & the Search of a Solar Constant"

7091t, Andy Click: "Electromagnetism"

6017s, Alexander Ethier: "Wind Tunnels & Why We Need Them"

7123s, Malcolm DeBoer & Simon Olson: "Aerodynamics of Objects in a Wind Tunnel"

8039t, Kailey Shern: "Effect of Updraft on Tornado Size"

8081s, R. Michael Francomb: "Efficiency of Solar Cells"

8082w, Philip Hansen: "Difference Between a Laser & Flashlight on a Solar Cell"

8057t, Paula Thelen: "Homemade Weather Instruments"

8103t, Jonathan Alstad & Max Lee: "Magnificent Maglev"

TCRSF TEAM PROJECT AWARDS: Trophies to the best teams in each level of competition.

High School

1078t, Laura Heeter & Kristina Naranjo-Rivera: "The 2p-3d Electron Transition Multiplet of Argon 13"

Grade 8

8109t, Elise Cleereman & Katrina Krogh: "How Second-hand Smoke Affects Tardigrades in Cryptobiosis"

8099s, Tessa Bisek & Megan Westerheide: "Power of Suggestion"

Grade 7

7117t, Monica Mgeni & Lauren Ott: "Best Types of Music to for Studying"

Grade 6

6041s, Pat Bode & Tom Pane : "Supports"

GLEN DOMEIER MEMORIAL AWARD: Compass & use book, \$50 to the project that best demonstrates excellence in environmental sciences.

1038w, Emily Stiever: "Tetracycline Resistance in Swine Farm Isolates"

1032t, Sara Brinda: "Effect of Permethrin on Monarch Butterfly Larvae"

HERBERT HOOVER YOUNG ENGINEER AWARD: Certificate and medal to the project that best demonstrates outstanding engineering effort.

Twin Cities:

1022t, William Mitchell: "Suzuki Coupling: Synthesis of Ferrocene-capped Thiophene"

St. Paul:

7097s, Danny Johnson, Jr.: "Effect of Wheels on a Trebuchet's Throwing Distance"

Western Suburbs:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

INTEL EXCELLENCE IN ENVIRONMENTAL HEALTH AND SAFETY AWARD: Certificate and \$200 (in the mail) for the best project in Environmental Science:

Twin Cities:

1032t, Sara Brinda: "Effect of Permethrin on Monarch Butterfly Larvae"

St. Paul:

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

Western Suburbs:

1038w, Emily Stiever: "Tetracycline Resistance in Swine Farm Isolates"

SCHOOL TROPHIES: Trophy to all participating schools.

Blake Middle School

Blessed Trinity Catholic Schhool

Breck School

Burnsville High School

Calvin Christian School-Blaine

Calvin Christian School-Edina

Calvin Christian School-Edina

Capitol Hill Magnet School

Central Middle School-Eden Prairie

Central Middle School-White Bear Lake

Como Park High School

Corondelet Catholic School

Cyber Village Academy

Eden Prairie High School

L'Etoile du Nord

Harding High School

Holy Trinity School

Hopkins High School

IHM St Luke School

Immaculate Conception School

Jefferson Community School

Jefferson High School

Johnson High School

Maranatha Christian Academy

Minnetonka High School

Murray Junior High School

Nativity of Our Lord School
Presentation School
Ramsey Jr. High School
Robbinsdale Armstrong High School
St. Charles Borromeo School
St. Helena School
St. John the Baptist School

St. Pascal School
St. Peters Catholic School
Susan B. Anthony Middle School
Thomas Jefferson Sr. High School
Trinity Catholic School
Wayzata High School
North View Junior High School

US NAVY/MARINE AWARDS:

Senior High

1062t, Michael Labukas: "Effects of Current on Magnesium Corrosion Prevention"

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

Junior High

8044t, Matt Jonza: "Snow Crystal"

8045t, Madelyn Kettner: "Which Vinyl Siding is Best Against Fire & Hail?"

8048t, Daniel Osborne: "Air Filters"

7012t, Tiffanie Stone: "Got Bt?"

7043w, Angela Offerman: "Chemical Effects on Freshwater Ecosystems"

7089t, Stephen Buckeye: "Metals and Their Heat Conducting Properties"

6018s, Perihan MacDonald: "Is a Fixed End or Simply Supported Beam Stronger?"

UNITED STATES ARMY SCIENCE & ENGINEERING AWARDS:

Certificate

Twin Cities:

1021t, Patrick Kelly-Gross: "Anomolour Effects in Deprotonation & Alkylation of Ketones"

1047t, Kirsten Olson: "Anthropometrics"

1056t, Stephen Anderson: "Cost of Halogen, Fluorescent & Incandescent"

8028t, Kate Letourneau: "Juices & Pennies"

7092t, Emily Dewey: "Refraction in Action"

7029t, Libby Stille: "We Drink It All the Time, But Can They Grow On It?"

8096t, Michelle Boris & Sarah Wilde: "How Does Color Affect Taste?"

8103t, Jonathan Alstad & Max Lee: "Magnificent Maglev"

St. Paul:

7027s, Carolyn Scorpio: "Talking to Plants"

7025s, Illana Livstrom: "North, East, South, West: Which Light Grows the Best?"

7024s, Andrew Leyden: "Soil's Effect on Plants"

7020s, Mariah Hensley: "Colored Lights on Plants"

7040t, Sean Luna: "Identifying Metals by Color of Flame"

7013t, Isabel Arisso: "Rainforest Plant Growth"

7006t, Caroline Schevenius: "How Do You Remember?"

8044t, Matt Jonza: "Snow Crystal"

8028t, Kate Letourneau: "Juices & Pennies"

8016s, Aaron Avenido: "Exercise & Its Effect on Blood Glucose"

Western Suburbs:

1048w, Yuliya Perepelitsa: "Follow-up of Extremely Premature Infants with Perforated Bowel"

7026w, James O'Connor: "Largest Plants from Hydroponic or Soil-based Farming"

7051w, Libby Bird: "Get Wired!"

7054w, Erik Velgersdyk: "Up, Up and Away"

7064w, Anthony Kosters: "Soil + Wind, Water & Glaciers = Erosion"

7072w, Lindsey Beard: "Stop Freezing Your Head Off"

7087w, Amber Backus: "Relation Between Amount of Air & Distance in a Kicked Soccer Ball"

Certificate in Army Folder:

Twin Cities:

1034t, Whitney Engstrom: "Water Quality in Minnesota Rivers"

1041t, Matthew Pham: "Accuracy of a Text-to-text Translator"

St. Paul:

1025s, Kalia Her: "Can Spontaneous Combustion Be Achieved with Various Chemicals"

Western Suburbs:

1038w, Emily Stiever: "Tetracycline Resistance in Swine Farm Isolates"

1039w, Leah Carlson: "Neuroprotective Effects of TUDCA on Animal Model Parkinson's"

Army Polo Shirt and Certificate in Army Folder:

Twin Cities:

1032t, Sara Brinda: "Effect of Permethrin on Monarch Butterfly Larvae"

1059t, Isaac Brown: "Superconductor/maganite Bilayer Thin Films in Cross Section"

St. Paul:

1053s, Nadine Abou-Karam: "Do Antibiotic Feed Additives Increase Bacterial Resistance"

1017s, Noel Suri: "Optimizing Protein Production in Transgenic Sweet Maize"

Western Suburbs:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

1054w, Akash Kumar: "Proteome Response of Staph. aureus to Iron Limitation"

1052w, Ning Zhou: "Quantitative Trait Loci Modulating Corpus Callosum Size"

Bonze Medallion, Army Polo Shirt & Certificate in Army Folder:

Twin Cities:

1036t, Rachael Kraemer: "Macroinvertebrate Quality Indicators in Creeks"

St. Paul:

1035s, Nathaniel Flath: "A Monte-Carlo Model of Island Biodiversity"

Western Suburbs:

1029w, Adam Hahn: "Developing a Shape Memory Alloy Snake Robot"

NACE INTERNATIONAL: Certificate to the project that best exhibits awareness of the importance of controlling and preventing corrosion.

Twin Cities:

1062t, Michael Labukas: "Effects of Current on Magnesium Corrosion Prevention"

Western Suburbs:

8027w, Mark Engelmeyer: "Corrosion of Metals"

O'HALLORAN & MURPHY – ROSEVILLE: Best project that shows a high level of empathy – Certificate, \$50 check

7124t, Ashlee Kepharts: "Effects of Earthworms on Plants"

UNITED STATES AIR FORCE: Certificate, Dayplanner and Medal

1073t, Chris Giuttari & Emily Gregory: "Proportionality of Bridge Mass & Structural Integrity"

8083t, Zachary Joseph: "Air Ball"

7051w, Libby Bird: "Get Wired!"

SIGMA DELTA EPSILON SORORITY, GRADUATE WOMEN IN SCIENCE: \$50 check

8022s, Margaret Johnson: "Chemical Hormesis"

8039t, Kailey Shern: "Effect of Updraft on Tornado Size"

8035w, Kyra Underbakke: "Inline Frames & Tables in Web Design"

1014w, Nicole Heinz: "Effect of Acid Rain on Plant Growth"

1019w, Kyrstin Underbakke: “Effective Application of Gibberellic Acid on *Raphanus sativus*”
1023w, Crystal Shunkwiler: “Wood: Is Yours Clean?”

ARNOLD AIR SOCIETY, AIR FORCE ROTC: T-shirt & ROTC coin
6019s, Keefe Tarnow: “Match Rockets”

TCRSF “JUST FOR FUN” AWARD: Placemats
7072w, Lindsey Beard: “Stop Freezing Your Head Off”

TEAM PROJECT AWARDS: Trophy for best in each division

High School

1078t, Laura Heeter & Kristina Naranjo-Rivera: “The 2p-3d Electron Transition Multiplet of Argon 13”

Grade 8

8109t, Elise Cleereman & Katrina Krogh: “How Second-hand Smoke Affects Tardigrades in Cryptobiosis”

8099s, Tessa Bisek & Megan Westerheide: “Power of Suggestion”

Grade 7

7117t, Monica Mgeni & Lauren Ott: “Best Types of Music to for Studying”

Grade 6

6041s, Pat Bode & Tom Pane : “Supports”

PROJECT MEDALISTS:

6018s, Perihan MacDonald: “Is a Fixed End or Simply Supported Beam Stronger?”

6019s, Keefe Tarnow: “Match Rockets”

6012s, Madeline McCloughan: “Effect of Stir Time on Gluten Production”

6025t, Maggie Dolan: “Raising Blood Glucose”

6033s, Madelyne Heyman: “Cover Your Ears”

7103t, Kayla Benson: “Rats in a Maze”

7104s, Brendan Boylan: “Fly Eyes”

7089t, Stephen Buckeye: “Metals and Their Heat Conducting Properties”

7043w, Angela Offerman: “Chemical Effects on Freshwater Ecosystems”

7009s, Zachary Kagan: “The Gas We Pass”

7012t, Tiffanie Stone: “Got Bt?”

8022s, Margaret Johnson: “Chemical Hormesis”

8066t, Annie Georges: “Effects of Light & Age on Contrast Sensitivity”

8073t, Michael Ward: “Effects of Caffeine on Concentration”

8075s, Nada Abou-karam: “Saving Our Antibiotics”

8109t, Elise Cleereman & Katrina Krogh : “How Second-hand Smoke Affects Tardigrades in Cryptobiosis”

6002s, Teddy Johnson: “Golden Beauty: Math or Myth?”

6013t, Joshua Prince: “Will Higher Cost Batteries Last Longer?”

6016t, Daphne Welter: “Oxygenated Tomatoes”

6027t, Karissa Johnson: “The Regulator”

6029s, James Olson: “Does Mouthwash Really Kill Bacteria?”

6031t, Thomas Bukowski: “Sound Crazy?”

6034t, Laura Levoir: “Light”

The Twin Cities Regional Science Fair gratefully acknowledges the in-kind donations from the following companies who have directly contributed to the success of the fair.

Twin Cities Catering for the wonderful Judges dinner.

Baxter Pharmaceuticals for lanyards for Judges badges

Option Care Enterprises, Inc-Roseville for planning facilities

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University of Minnesota Science CentrUM for hosting the project program.

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Judges for volunteering to make a difference in the lives of future scientists.

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Penny Lohman