

**SELECTED TO GO DIRECTLY TO THE  
INTERNATIONAL SCIENCE AND ENGINEERING FAIR  
IN LOUISVILLE, KENTUCKY, MAY 12-18, 2002**

**FINALISTS:**

Twin Cities:

**1037t, Arun Saini:** “Parametric Study of a 1:25 Scale Xpeedoir Catheter Model”

**1051t, Jacob Fitzpatrick:** “Pitch Frequencies of Bach's No.13 Invention”

St. Paul:

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”

Western Suburbs:

**1019w, Stephen Morris:** “Adaptive Plasticity of hsp70 Expression in Monterey Bay Littorina”

Team:

**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

**ALTERNATES:**

Twin Cities:

**1039t, Adam Timm:** “Creating a High Voltage Power Supply”

St. Paul:

**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

Western Suburbs:

**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”

**1054w, Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer's Risk Factors”

Team:

**1028t, Caleb Bousu, Charles Cantrell & Joseph Kim:** “Richard's Equation to Determine Optimal Ground Secretion on NO<sub>3</sub> Contaminated Water”

**MINNESOTA ACADEMY OF SCIENCE JUNIOR SCIENCE & HUMANITIES SYMPOSIUM:** Selected to present at the Tri-state Symposium without going through further competition:

**PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

**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 Association, Air Force Chapter

**1057t, Dean Chamberlain:** “Effect of Where You Take Your Temperature”

Silver Level: Plaque

Alliant Techsystems

**1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

Gold Level: Plaque

The Medtronic Foundation

**1058w, Jennifer Hong:** “Regulation of Spinocerebellar Ataxia-type-A by WRT Signalling”

Platinum Level Plaque:

3M Foundation

**1019w, Stephen Morris:** “Adaptive Plasticity of hsp70 Expression in Monterey Bay Littorina”

St. Paul Youth Fund

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”

University of Minnesota

**1004w, Carl Forsberg:** “Who Decides? Composition of Institutional Review Boards”

Jeffrey Roberts, Bandana Square

**8087s, Bryan Fate:** “Effect of Irradiation on Beef”

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

**8001s, Alex Apel:** “Affects of School Scheduling”

**8047w, Dylan Bauer:** “Does Weather Affect Nighttime AM Radio Reception?”

**7039t, Beth Braun:** “Film Developing”

**7066s, Carolyn Cahill:** “How Do Earthworms Affect Spring Flowers?”

**7066s, Diane Galatowitsch:** “How Do Earthworms Affect Spring Flowers?”

**8063w, Drew Carlson:** “Natural Filtration”

**8087s, Bryan Fate:** “Effect of Irradiation on Beef”

**7102t, Andy Grout:** “Electromagnets”

**8041s, Kell Hansen:** “Effect of Hydrophilic Polymers on Growth & Stress”

**7076s, Kalia Her:** “Blind as a Bat”

**7019t, Nora Hughes:** “Battle of the Fungicides”

**7108t, Peter Labuza:** “Influence of Temperature & Humidity on Cotton Candy”

**8052t, Theodore Labuza:** “Brittle-Ductile Transition of a Sugar Snap Cookie”

**8100t, Monica Lentz:** “At What Temperature Does Jell-O Set Quickest?”

**8054t, Alyson Lieser:** “Which Material is Strongest Under Tension?”

**7013w, Alison Liewen:** “Effect of Preservatives on *Saccharomyces arevisiae*”

**7057t, Isaac Livingston:** “Comparing Water From Pike Lake & Long Lake”

**8021s, Claire Luby:** “Restoring Prairies 1 Species at a Time”

**7005t, Robert Luna:** “Fingerprints”

**8042w, Jennifer Marshall:** “SimPlant: Modeling Biodome Life on Mars”

**8077s, Caitlin McGowan:** “Overweight & Obesity in an Urban School-Based Sample”

**629s, Jessica Mollner:** “Your Dishcloth & Bacteria”

**7081s, Lauren O'Keefe:** “Fatigue”

**7068s, John Olson:** “Testing Random Number Generator's Quality”

**7011t, Alex Ponschok:** “Female Brains vs Male Brains”

- 8080t, Adam Quade:** “Effects of Topical Flouride”  
**8070s, Jessie Rue:** “Ageing Effects of UV Light on Collagen Fibers”  
**8070s, Nora Moore:** “Ageing Effects of UV Light on Collagen Fibers”  
**616t, Jessica Scott:** “Flour, Does It Matter?”  
**7011t, Justina Steele:** “Female Brains VS Male Brains”  
**7039t, Meghan Stumpf:** “Film Developing”  
**7037s, Britta Swedenborg:** “Which Water is Best?”  
**8089w, Krystin Underbakke:** “Investigative Study of Plasmodial Physarum polycephalum”  
**7082t, Zachery Wehrwein:** “Fluoride: Magic Mineral or Toxic Waste?”  
**7009t, Elizabeth Yares:** “Dreams”

**PROJECTS SELECTED FOR COMPETITION AT THE MINNESOTA ACADEMY OF  
SCIENCE STATE FAIR, MINNEAPOLIS, MINNESOTA IN APRIL 2002.**

**HIGH SCHOOL**

- 1054w, Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer’s Risk Factors”  
**1043t, Robert Memmen & Shaun Phipps:** “Effects of Cathodics on the Corrosion of Metal”  
**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”  
**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”  
**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”  
**1056w, Christina Brakken-Thal:** “Reinnervation of Enteric Nerve Fibers in Porcine Small Bowel”  
**1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”  
**1019w, Stephen Morris:** “Adaptive Plasticity of hsp70 Expression in Monterey Bay Littorina”  
**1004w, Carl Forsberg:** “Who Decides? Composition of Institutional Review Boards”  
**1058w, Jennifer Hong:** “Regulation of Spinocerebellar Ataxia-type-A by WRT Signalling”  
**1076w, Michael Hektner:** “Effects of Two Mutations in Monarch Butterflies”  
**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”  
**1067t, John Mette & Nathaniel Young:** “Antibiotic Resistance of Bacteria from Health Care Facilities”  
**1026w, Jonathan Schwalbe:** “Chemical & Mathematical Analysis of Fractal Copper Crystals”  
**1032t, William Chester:** “Boomology: The Study of Boom”  
**1051t, Jacob Fitzpatrick:** “Pitch Frequencies of Bach’s No.13 Invention”  
**1044c, Nick Ruberto & John Saxton:** “Computer Overclocking & Cooling”  
**1053t, Ben Stripe:** “Modular Patterns in RSA Encryption”  
**1065w, Emily Stiever:** “Antibiotic Resistance in E. coli”  
**1060w, Jeffrey McCullough:** “Non-Linearities of the BOLD Response in the Human Brain”  
**1021w, Beth Brinda:** “Glutathione Reductase Activity in Taxus cuspidata Under Thermal Stress”  
**1039t, Adam Timm:** “Creating a High Voltage Power Supply”  
**1037t, Arun Saini:** “Parametric Study of a 1:25 Scale Xpeedoir Catheter Model”  
**1016w, Christopher Bassett:** “Expression & Purification of Phospholamban”

- 1022t, Megan Hannon:** “Effect of Wind on Phasseolus Plants”  
**1069t, Laurel Rowse:** “Effect of Relative Humidity on Violin Sound Wave”  
**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”  
**1073t, Jeremy Peichel & Steven Sengmany:** “Effects of Zinc on the Superconductivity of a YBCO Superconduttor”

EIGHTH GRADE

- 8001s, Alex Apel:** “Affects of School Scheduling”  
**8002t, Erik Coglianesse:** “Does Gender Affect Short Term Memory?”  
**8004t, Meredith Forgy:** “Do Age & Gender Affect Conditioning?”  
**8017t, Benjamin Bettin:** “Effects of Acid Rain on Plants”  
**8021s, Claire Luby:** “Restoring Prairies 1 Species at a Time”  
**8034s, Julia VinZant:** “Electrolysis of Water”  
**8099t, Katy Iber:** “Effect of Density on Refraction”  
**8098t, Margarete Hileman:** “It's Electric!”  
**8087s, Bryan Fate:** “Effect of Irradiation on Beef”  
**8089w, Krystin Underbakke:** “Investigative Study of Plasmodial Physarum polycephalum”  
**8077s, Caitlin McGowan:** “Overweight & Obesity in an Urban School-Based Sample”  
**8080t, Adam Quade:** “Effects of Topical Flouride”  
**8100t, Monica Lentz:** “At What Temperature Does Jell-O Set Quickest?”  
**8033t, Christa Spielman:** “Flower Preservation”  
**8041s, Kell Hansen:** “Effect of Hydrophilic Polymers on Growth & Stress”  
**8042w, Jennifer Marshall:** “SimPlant: Modeling Biodome Life on Mars”  
**8052t, Theodore Labuza:** “Brittle-Ductile Transition of a Sugar Snap Cookie”  
**8063w, Drew Carlson:** “Natural Filtration”  
**8070s, Nora Moore & Jessie Rue:** “Ageing Effects of UV Light on Collagen Fibers”  
**8060s, Brendan Wilson & Ben Zenner:** “Bridges”  
**8067t, Christopher Kerzman:** “What Method of Soil Erosion Control Works Best?”  
**8047w, Dylan Bauer:** “Does Weather Affect Nighttime AM Radio Reception?”  
**8054t, Alyson Lieser:** “Which Material is Strongest Under Tension?”  
**8084t, Lauren Brin & Kyley Crotty:** “Taste the Difference Between Young and Old”  
**8086s, David Abbott:** “Effect of Naturally Occuring Antibiotics”  
**8094s, Jamie Dordal:** “Static Coefficient of Friction”

SEVENTH GRADE

- 7066s, Carolyn Cahill & Diane Galatowitsch:** “How Do Earthworms Affect Spring Flowers?”  
**7108t, Peter Labuza:** “Influence of Temperature & Humidity on Cotton Candy”  
**7102t, Andy Grout:** “Electromagnets”  
**7076s, Kalia Her:** “Blind as a Bat”  
**7068s, John Olson:** “Testing Random Number Generator's Quality”  
**7082t, Zachery Wehrwein:** “Fluoride: Magic Mineral or Toxic Waste?”  
**7081s, Lauren O'keefe:** “Fatigue”  
**7037s, Britta Swedenborg:** “Which Water is Best?”  
**7039t, Beth Braun & Meghan Stumpf:** “Film Developing”  
**7011t, Alex Ponschok & Justina Steele:** “Female Brains VS Male Brains”  
**7013w, Alison Liewen:** “Effect of Preservatives on Saccharomyces arevisiae”  
**7019t, Nora Hughes:** “Battle of the Fungicides”  
**7009t, Elizabeth Yares:** “Dreams”

- 7005t, Robert Luna:** “Fingerprints”  
**7057t, Isaac Livingston:** “Comparing Water From Pike Lake & Long Lake”  
**7018t, John Galt:** “Does Soil Type Affect The Growth Of Beans?”  
**7026t, Tommy Tillges & Eric Larson:** “Effects of Salt & Sand on Grass”  
**7042t, Jaclyn Melander:** “Color Change in Photographs in Light”  
**7059t, John McCormick:** “Tape Challenge (To Stick or Not to Stick?)”  
**7034t, Elizabeth Richardson:** “Best Fruit Juice Stain Remover?”  
**7119w, Elizabeth Kircher:** “Does Water Type Impact Snail Growth?”  
**7101t, Andrew Grandbois:** “Thermal Insulation”  
**7103w, Anne Hallgren:** “Friction's Effect on Motion”  
**7122t, Ben Skubic:** “Frogs”  
**7069t, Krista Bauer:** “What Whitening Toothpaste Works Best?”  
**7090s, Elizabeth Peterson:** “How Frequency Affects Growth of Serretia marcescens?”  
**7115w, Stephen Varverakis:** “Refraction of a Beam of Light”  
**7012w, Amanda Dorman:** “Energy in Nuts”  
**7064t, Jessica Tyler:** “Effect of Temperature on Secchi Disk Reading of Water.”  
**7085s, Erik Halvorson:** “Best Way to Grow Penicillin”  
**7086t, Erin Kearn:** “Best Bread for Growing Mold”  
**7089s, Sheila Otto:** “Mold and Milk”

## PROJECT MEDALISTS

### HIGH SCHOOL

- 1054w, Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer's Risk Factors”  
**1028t, Caleb Bousa, Charles Cantrell & Joseph Kim:** “Richard's Equation to Determine Optimal Ground Secretion on NO<sub>3</sub> Contaminated Water”  
**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”  
**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in *Candida albicans*”  
**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”  
**1056w, Christina Brakken-Thal:** “Reinnervation of Enteric Nerve Fibers in Porcine Small Bowel”  
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**1021w, Beth Brinda:** “Glutathione Reductase Activity in Taxus cuspidata Under Thermal Stress”  
**1060w, Jeffrey McCullough:** “Non-Linearities of the BOLD Response in the Human Brain”

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#### SEVENTH GRADE

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**7019t, Nora Hughes:** “Battle of the Fungicides”  
**7009t, Elizabeth Yares:** “Dreams”  
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**7057t, Isaac Livingston:** “Comparing Water From Pike Lake & Long Lake”  
**7059t, John McCormick:** “Tape Challenge (To Stick or Not to Stick)”  
**7034t, Elizabeth Richardson:** “Best Fruit Juice Stain Remover?”  
**7119w, Elizabeth Kircher:** “Does Water Type Impact Snail Growth?”  
**7122t, Ben Skubic:** “Frogs”  
**7012w, Amanda Dorman:** “Energy in Nuts”  
**7085s, Erik Halvorson:** “Best Way to Grow Penicillin”  
**7086t, Erin Kearn:** “Best Bread for Growing Mold”  
**7089s, Sheila Otto:** “Mold and Milk”

#### SIXTH GRADE

- 607t, Elizabeth Warner:** “Effects of Sunlight on Plant Seed Germination and Growth”  
**609s, Katie Spitzmueller:** “Does Music Affect the Growth of Plants?”  
**616t, Jessica Scott:** “Flour, Does It Matter?”  
**617t, Alexandra Wysopal:** “Which Shampoo is the Most pH Balanced?”

**620t, Stephanie Rhee:** “Which Swimsuit Material Has the Least Drag?”

**623s, Peter Knudson:** “Changes in Decaying Fruit”

**629s, Jessica Mollner:** “Your Dishcloth & Bacteria”

**630t, Erin Boland & Stephanie Ruas:** “Water Versus Skin”

**634s, Julian Clarkson:** “The Zoctrobe”

**636s, Orin Larson:** “How Does Saline Affect Buoyancy?”

**638s, Charles McCloughan:** “Gay-Lussac's Law”

**640s, Scott Pearson:** “Running With Friction”

**645s, Claire Buethe:** “Crickets: Nature's Thermometers”

**648t, Erika Smith:** “Language of a Dolphin”

#### **RESEARCH PAPER MEDALLISTS:**

**Adam Quade:** “Effect of Topical Fluoride Treatments on the In Vitro Erosion of Enamel by Sweetened Beverages”

**Peter Labuza:** “Influence of Temperature and % RH on Physical States of Cotton Candy”

**Theodore Labuza:** “Brittle-Ductile Transition of Sugar Snap Cookie”

**Britta Swedenborg:** “What Kind of Drinking Water is the Best: Bottled, Tap or Filtered?”

**Kerry York:** “Cercopithecus neglectus’ Response to Facial Representations of Differing Emotional Content”

**Kiara Brancel:** “The Flexibility of Girls Across Ages”

**Chris Pedersen:** “Do Magnets Have an Effect on the Growth and Movements of Seedling Sprouts?”

**Zachary Wehrwein:** “Fluoride: Magic Mineral or Toxic Waste?”

**Liv Anderson:** “Computer Rocketry for Dummies 2.0”

**PaCha Yang:** “Allelopathic Content of Rhammus cathartica on Germination Characteristics of Lolium multiflorum: Second Year Case Study”

**Noel Suri:** “Determination of the Survival of Triazine-Degrading Wild-Type Organisms and Genetically-Modified Microorganisms in Liquid Cultures”

**Beth Brinda:** “Glutathione Reductase Activity Under Thermal Stress”

**Jonathan Schwalbe:** “Analysis of Fractal Copper Crystals”

**Brett Larsen:** “Analysis of Truss Design in Model Bridges Using Mathematical Methods”

**Laurel Rowse:** “The Effect of Relative Humidity on the Sound Wave of a Violin”

**Arun Saini:** “A Parametric Study of a 1:25 Scale Xpeedior Catheter Model”

**Jessica Irwin:** “Mozart and 93X: A Study of How Music Affects Spatial Reasoning and Mental Math Test Scores”

**Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

**Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer’s Risk Factors in a Case Control Study”

**Yan Pu:** “The Regulation of Dimorphism by Nove I Genes in Candida albicans”

**Timothy Underbakke:** “Webserver Network Security”

**Jennifer Hong:** “Regulation of Spinocerebellar Ataxia Type A Protein (Ataxin-) by WRT Signaling”

**Christina Braken-Thal:** “Reinnervation of Emeric Neve Fibers in Porcine Small Bowel Transplantation”

**Chris Bassett:** “Expression and Purification of Phospholamban”

**Carolyn Benbow:** “Contamination of a High School Bathroom”

**RESEARCH PAPERS SELECTED FOR COMPETITION AT THE MINNESOTA  
ACADEMY OF SCIENCE STATE FAIR, APRIL 12-14, 2002 IN MINNEAPOLIS, MN.**

**Adam Quade:** “Effect of Topical Fluoride Treatments on the In Vitro Erosion of Enamel by Sweetened Beverages”

**Peter Labuza:** “Influence of Temperature and % RH on Physical States of Cotton Candy”

**Theodore Labuza:** “Brittle-Ductile Transition of Sugar Snap Cookie”

**Kerry York:** “*Cercopithecus neglectus*’ Response to Facial Representations of Differing Emotional Content”

**Chris Pedersen:** “Do Magnets Have an Effect on the Growth and Movements of Seedling Sprouts?”

**Zachry Wehrwein:** “Fluoride: Magic Mineral or Toxic Waste?”

**Liv Anderson:** “Computer Rocketry for Dummies 2.0”

**Noel Suri:** “Determination of the Survival of Triazine-Degrading Wild-Type Organisms and Genetically-Modified Microorganisms in Liquid Cultures”

**Timothy Underbakke:** “Webserver Network Security”

**PaCha Yang:** “Allelopathic Content of *Rhammus cathartica* on Germination Characteristics of *Lolium multiflorum*: Second Year Case Study”

**Beth Brinda:** “Glutathione Reductase Activity Under Thermal Stress”

**Jonathan Schwalbe:** “Analysis of Fractal Copper Crystals”

**Laurel Rowse:** “The Effect of Relative Humidity on the Sound Wave of a Violin”

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**Yan Pu:** “The Regulation of Dimorphism by Nove I Genes in *Candida albicans*”

**Jennifer Hong:** “Regulation of Spinocerebellar Ataxia Type A Protein (Ataxin-) by WRT Signaling”

**TOP SENIOR HIGH PAPERS: Trophy**

1<sup>st</sup>: **Beth Brinda:** “Glutathione Reductase Activity Under Thermal Stress”

2<sup>nd</sup>: **Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer’s Risk Factors in a Case Control Study”

3<sup>rd</sup>: **Jennifer Hong:** “Regulation of Spinocerebellar Ataxia Type A Protein (Ataxin-) by WRT Signaling”

**TOP JUNIOR HIGH PAPERS: Trophy**

1<sup>st</sup>: **Zachary Wehrwein:** “Fluoride: Magic Mineral or Toxic Waste?”

2<sup>nd</sup>: **Noel Suri:** “Determination of the Survival of Triazine-Degrading Wild-Type Organisms and Genetically-Modified Microorganisms in Liquid Cultures”

3<sup>rd</sup>: **Liv Anderson:** “Computer Rocketry for Dummies 2.0”

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

Senior High:

**1060w, Jeffrey McCullough:** “Non-Linearities of the BOLD Response in the Human Brain”

Junior High:

**7076s, Kalia Her:** “Blind as a Bat”

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

Twin Cities:

**8044t, Rebecca Pine:** “Petrified! Turning Wood into Stone”

St. Paul:

**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

Western Suburbs:

**8042w, Jennifer Marshall:** “SimPlant: Modeling Biodome Life on Mars”

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

Twin Cities:

**1017t, James Dayton:** “In Search of the PTPB Transcription Start Site”

Western Suburbs:

**1021w, Beth Brinda:** “Glutathione Reductase Activity in Taxus cuspidata Under Thermal Stress”

**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:

**8079t, Laura Murphy:** “Does High Saturated Fat Affect Short Term Memory?”

St. Paul:

**8077s, Caitlin McGowan:** “Overweight & Obesity in an Urban School-Based Sample”

Western Suburbs:

**1058w, Jennifer Hong:** “Regulation of Spinocerebellar Ataxia-type-A by WRT Signalling”

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

**604s, Alex Chudzik:** “Can Plants Grow Down?”

**635s, Jessica Falksen:** “On Which Surface Do Hotwheel Cars Go Fastest?”

**641s, Amelia Rudberg:** “Which Surface Has the Most Friction?”

**605t, Dianne Quinones:** “How Does Light Affect Plants?”

**7008t, Nick Salmen:** “Left Brain/Right Brain Dominance”

**7025t, Anna Silverman:** “Effect of Fertilizers on Plant Growth”

**7035t, Arnold Ringstad:** “Conductivity Through Solutions”

**8034s, Julia VinZant:** “Electrolysis of Water”

**7086t, Erin Kearn:** “Best Bread for Growing Mold”

**8011s, Nick Ortega:** “Righty or Lefty?”

**8061s, Maddy Boler:** “Battery Life”

**7108t, Peter Labuza:** “Influence of Temperature and Humidity on Cotton Candy”

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

Twin Cities:

**8045t, Mara Sunday:** “Effect of Temperature & Wind on Evaporation”

**618t, Alex Nelson:** “What Makes Predicting Weather So Unpredictable?”

Western Suburbs:

**7041w, Megan Leith:** “Are You a Victim of El Nino?”

**EASTMAN KODAK COMPANY:** Camera kit to student and school.

Twin Cities

**7039t, Beth Braun & Meghan Stumpf:** “Film Developing”, Presentation of Mary School

St. Paul:

**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”, Johnson High School

Western Suburbs:

**1056w, Christina Brakken-Thal:** “Reinnervation of Enteric Neve Fibers in Porcine Small Bowel Transplantation”, Wayzata High 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:

**1028t, Caleb Bousu, Charles Cantrell & Joseph Kim:** “Richard's Equation to Determine Optimal Ground Secretion on NO<sub>3</sub> Contaminated Water”

St. Paul:

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”

Western Suburbs:

**1021w, Beth Brinda:** “Glutathione Reductase Activity in Taxus cuspidata Under Thermal Stress”

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

Twin Cities:

**1053t, Ben Stripe:** “Modular Patterns in RSA Encryption”

St. Paul:

**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

Western Suburbs:

**1030w, Timothy Underbakke:** “Webserver Network Security”

**CONSERVATION INTERNATIONAL AWARD IN BIODIVERSITY CONSERVATION SCIENCE:** Certificate to the student who best demonstrates that human societies are able to live harmoniously with nature.

Twin Cities:

**1017t, James Dayton:** “In Search of the PTPB Transcription Start Site”

St. Paul:

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”

Western Suburbs:

**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”

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

Twin Cities:

**1025t, Brian Kekich:** “Is There More Oxygen in Oxygenized Water?”

St. Paul:

**8029s, Mark McCloughan:** “Effect of Everyday Items on the Conductivity of Water”

Western Suburbs:

**1047w, Vaishnavi Subramani:** “Minnehaha Creek Sewage Spill - Lasting Impact?”

**THE ASM INTERNATIONAL FOUNDATION AWARD:** Certificate and medallion recognizing the winner of the best materials engineering project.

Twin Cities:

**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”

St. Paul:

**8094s, Jamie Dordal:** “Static Coefficient of Friction”

Western Suburbs:

**1026w, Jonathan Schwalbe:** “Chemical & Mathematical Analysis of Fractal Copper Crystals”

**CONSULTING ENGINEERS COUNCIL OF MINNESOTA:**

Grand Award Winner: Calculator

**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”

Honor Award: Certificates

**620t, Stephanie Rhee:** “Which Swimsuit Material Has the Least Drag?”

**644t, Dannie Paskewitz & Maria Vorhis:** “Which Paper Airplane Design Flies the Farthest?”

**7101t, Andrew Grandbois:** “Thermal Insulation”

**7104s, Alex Hewett:** “What Angle of Drop Lets a Roller Coaster Go Furthest?”

**8054t, Alyson Lieser:** “Which Material is Strongest Under Tension?”

**8060s, Brendan Wilson & Ben Zenner:** “Bridges”

**1034t, Brett Larsen:** “Analysis of Truss Design in Model Bridges Using Mathematical Methods”

**1038t, Dara Sanh:** “Effects of Angle Measures & Arch on Bridge Strength”

**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:

**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”

Western Suburbs:

**1016w, Christopher Bassett:** “Expression & Purification of Phospholamban”

**ISEF ALUMNI AWARD:**

Sponsor: Timara Underbakke: \$25 and a certificate (two equal awards).

**8036w, Carolynn Wicks:** “Effectiveness of Countertop Home Water Filters”

**8041s, Kell Hansen:** “Effect of Hydrophilic Polymers on Growth & Stress”

Sponsor: Michael Lohman: Model for excellence in aviation.

**8040t, Nicole Feltault:** “Thrust vs. Impulse”

**MINNESOTA AGRICULTURE IN THE CLASSROOM:**

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

Senior High:

**1024t, Sadie Davis & Sophia Murphy:** “Microorganisms from Glycine max for Biological Weed Control”

Junior High:

**8067t, Christopher Kerzman:** “What Method of Soil Erosion Control Works Best?”

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

Senior High

**Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

Junior High

**Chris Pedersen:** “Do Magnets Have an Effect on the Growth and Movements of Seedling Sprouts?”

**PAT HENDERSON AWARD:** Certificate and \$50 check

**8041s, Kell Hansen:** “Effect of Hydrophilic Polymers on Growth & Stress”

**8087s, Bryan Fate:** “Effect of Irradiation on Beef”

**8067t, Christopher Kerzman:** “What Method of Soil Erosion Control Works Best?”

**USDA-AGRICULTURE RESEARCH SERVICE:**

**623s, Peter Knudson:** “Changes in Decaying Fruit”

**8041s, Kell Hansen:** “Effect of Hydrophilic Polymers on Growth & Stress”

**7066s, Carolyn Cahill & Diane Galatowitsch:** “How Do Earthworms Affect Spring Flowers?”

**1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

**1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

**MINNESOTA ASTRONOMICAL SOCIETY:**

**619t, Elizabeth Pine:** “Moon Size: Illusion or Effect”

**642t, Eric St. Martin:** “Behavior of Light”

**7115w, Stephen Varverakis:** “Refraction of a Beam of Light”

**8099t, Katy Iber:** “Effect of Density on Refraction”

**8105t, Liz Vestal:** “What Color is Produced by Gas Discharges?”

**MINNESOTA SPACE FRONTIER SOCIETY:**

**618t, Alex Nelson:** “What Makes Predicting Weather So Unpredictable?”

**644t, Dannie Paskewitz & Maria Vorhis:** “Which Paper Airplane Design Flies the Farthest?”

**7053t, James Kleiner & Dan Rio:** “The Technology of Roller Coasters”

- 7112w, Timothy Shortreed:** “Rocket”  
**7114s, Barrett Vann:** “Paper Airplane Aerodynamics”  
**8040t, Nicole Feltault:** “Thrust vs. Impulse”  
**8042w, Jennifer Marshall:** “SimPlant: Modeling Biodome Life on Mars”  
**8046t, Anna Viehman:** “Into the Sky”  
**8059t, Calvin Meier & Nathaniel Simons:** “How Different Components Affect a Rocket's Performance”  
**8102t, David Satter:** “Airplane Wings”  
**1031w, Patrick Kling:** “How Does a Tornado Work”  
**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

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

Grade 6:

- 630t, Erin Boland & Stephanie Ruas:** “Water Versus Skin”

Grade 7:

- 7011t, Alex Ponschok & Justina Steele:** “Female Brains VS Male Brains”

Grade 8:

- 8060s, Brendan Wilson & Ben Zenner:** “Bridges”

High School:

- 1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

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

- 1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

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

Twin Cities:

- 1039t, Adam Timm:** “Creating a High Voltage Power Supply”

St. Paul:

- 8051s, Graham James:** “What's Rolling with Bearings”

- 8060s, Brendan Wilson & Ben Zenner:** “Bridges”

Western Suburbs:

- 8047w, Dylan Bauer:** “Does Weather Affect Nighttime AM Radio Reception?”

**INTEL EXCELLENCE IN ENVIRONMENTAL HEALTH AND SAFETY AWARD:**

Certificate and \$200 (in the mail) for the best project in Environmental Science:

Twin Cities:

- 1028t, Caleb Bousu, Charles Cantrell & Joseph Kim:** “Richard's Equation to Determine Optimal Ground Secretion on NO<sub>3</sub> Contaminated Water”

St. Paul:

- 1048s, Kaonhou Her & PaCha Yang:** “Allelopathic Content of Rhamnus cathartica on Lolium multiflorum Germination”

Western Suburbs:

- 1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

**US NAVY/MARINE AWARDS:** Certificate or Calculator and, for winners in grades 8 – 11, invitation to Open competition for MAS Junior Science & Humanities Symposium.

Certificates

Twin Cities:

**8054t, Alyson Lieser:** “Which Material is Strongest Under Tension?”

**8004t, Meredith Forgy:** “Do Age & Gender Affect Conditioning?”

**8069t, David Margulies:** “Does Age Affect the Sense of Smell?”

St. Paul:

**8109s, Kerry York:** “Cercopithecus neglectus' Response to Facial Representations”

Western Suburbs:

**8025w, Nicole Heinz:** “Does Time Affect Color Change in Acid Testing?”

Calculators:

Twin Cities:

**1051t, Jacob Fitzpatrick:** “Pitch Frequencies of Bach's No.13 Invention”

**1034t, Brett Larsen:** “Analysis of Truss Design in Model Bridges Using  
Mathematical Methods”

**1032t, William Chester:** “Boomology: The Study of Boom”

**1025t, Brian Kekich:** “Is There More Ozygen in Oxygenized Water?”

St. Paul:

**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-  
modified Organisms”

Western Suburbs:

**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”

**1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”

**SCHOOL TROPHIES:** Trophy to all participating schools.

**UNITED STATES ARMY SCIENCE & ENGINEERING AWARDS:**

**Honorable Mention Certificate**

Twin Cities:

**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”

**8023t, Christine Thelen:** “Hydroponics”

**7123t, Katelyn Springer:** “Goldfish Growth”

St. Paul:

**7001s, Emily Fate:** “Effect of Color on Cerebral Performance”

**7044s, Jennifer Nordin:** “Best Ground Cover Against Water Erosion”

**640s, Scott Pearson:** “Running With Friction”

Western Suburbs:

**1004w, Carl Forsberg:** “Who Decides? Composition of Institutional Review  
Boards”

**8042w, Jennifer Marshall:** “SimPlant: Modeling Biodome Life on Mars”

Category Winners:

Twin Cities:

**1037t, Arun Saini:** “Parametric Study of a 1:25 Scale Xpeedoir Catheter Model”

**1077t, Stephanie Nitzschke:** “Can Mice Understand Symbols in a Maze?”

**1050t, John Daly:** “Do Drivers Speed Differently at Different Times of Day”

**1069t, Laurel Rowse:** “Effect of Relative Humidity on Violin Sound Wave”

St. Paul:

**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

**1066s, A. Noel Suri:** “Survival of Triazine-degrading Wild-type & Genetically-modified Organisms”

Western Suburbs:

**1036w, Nicholas Rossi:** “X-1 Hardfloor Cleaning Machine”

**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”

**1030w, Timothy Underbakke:** “Webserver Network Security”

**1019w, Stephen Morris:** “Adaptive Plasticity of hsp70 Expression in Monterey Bay Littorina”

Bonze Medallion Winners:

Twin Cities:

**1037t, Arun Saini:** “Parametric Study of a 1:25 Scale Xpedoir Catheter Model”

St. Paul:

**1049s, Liv Anderson:** “Computer Rocketry for Dummies 2.0”

Western Suburbs:

**1063w, Yan Pu:** “Regulation of Dimorphism by Novel Genes in Candida albicans”

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

Twin Cities:

**1040t, Kate Westby:** “Effects of Electricity on the Corrosion Rate of Magnesium”

St. Paul:

**8064s, Rory Collins:** “Can Limestone Stop Acid Rain Effects on Ivy?”

Western Suburbs:

**1026w, Jonathan Schwalbe:** “Chemical & Mathematical Analysis of Fractal Copper Crystals”

**AARP ANDRUS FOUNDATION:** Certificate and possibility of winning \$100 for the project best in Gerontology.

Twin Cities:

**625t, Amber Oslin:** “Which Type of Pop Will Affect Your Teeth the Most?”

St. Paul:

**8070s, Nora Moore & Jessie Rue:** “Ageing Effects of UV Light on Collagen Fibers”

Western Suburbs:

**1054w, Maralyssa Bann:** “Using the BARAT to Investigate Alzheimer's Risk Factors”

**US AIR FORCE:**

**1047w, Vaishnavi Subramani:** “Minnehaha Creek Sewage Spill - Lasting Impact?”

**1071t, Ka-Meko Terrell:** “Effect of Batteries on Protectors”

**1044c, Nick Ruberto & John Saxton:** “Computer Overclocking & Cooling”

**1059t, Chin Kwok:** “Does Tannin Help Protect Your Teeth?”

**1022t, Megan Hannon:** “Effect of Wind on Phaseolus Plants”

**1039t, Adam Timm:** “Creating a High Voltage Power Supply”

**1046w, Leslie Onan:** “Selection of Antibiotic Resistant Bacteria in Feedlot Runoff”