

# 2008 Twin Cities Regional Science Fair Awards

ISEF-Atlanta, Georgia May 11-17, 2008

## Finalists:

### Twin Cities:

- 1092T Prithwis Mukhopadhyay grade 9 Development and Evaluation of a Sensitive Microfilter plate assay.  
1047T Michael Cherkassky grade 11 Application of Machine Learning methods to Medical Diagnosis

### Western Suburbs:

- 1088W Madeline Taft-Ferguson grade 11 Analyzing Immune Response for Islet Transplants in Type-1 Diabetes  
1121W Kyra Underbakke grade 12 Operation Infiltration: The War for a Fitness Advantage Between Nitrogen-fixing *Bradyrhizobia* and Non-fixing Mutants

### St. Paul:

- 1054S Aly Xiong grade 9 The Greenhouse Effect  
1058S Iola Edwards grade 11 London Bridges

### Team:

- 1064W Stephen Trusheim grade 11 Engineering a Program to Digitally Analyze Genetic Tests for HPV  
Daniel Mokhtari grade 10

## Alternates:

### Western Suburbs:

- 1074W Emily Nimmer grade 11 Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae (*Danaus plexippus*) to Aid in Monarch Conservation  
1091W Siddharth Damania grade 12 Cord Blood-Derived Regulatory T Cells: A Novel Cure for Graft-Versus-Host-Disease

### Twin Cities:

- 1008T Jessica Koehn grade 10 D.U.M.: Driving Under the Music  
1068T Cinnamon Mahkuk grade 12 Arsenic Levels in Twin Cities Runoff Water

### St. Paul:

- 1004S Lucky Lee grade 9 Spider & Insect Hearing

### Team:

- 1103T Adrienne Sherman grade 12 Differential Protein Expression Post Acid Exposure in Normal vs. Pre-Malignant Barrett's Esophagus Cells  
Claire Weiss grade 12

**Sponsors Awards:** Winners must be present at the awards ceremony or an alternate will receive the award

### **Bronze Level-Ribbon**

**General E.W. Rawlings Chapter, Air Force Association:**

8004S Vanessa Voller grade 8 Attention

### **Silver Level-Plaque**

**Slattery Sales Group:**

1080W Taddeo Balma grade 9 Waste Not A Comparative Study of Organic Waste Disposal

**Twin City Catering:**

7085 Andrew Koalska grade 7 Sports Drinks' Effect on Pulse Rate

**Alliant Techsystems:**

1088W Madelaine Taft-Ferguson grade 11 Analyzing Immune Response for Islet Transplants in Type-1 Diabetes

**St. Paul Youth Fund:**

1019S Arthur Nguyen grade9 Is Cheaper Any Better?

**Midway Party Rental:**

7074W Peter Heinz grade 7 Statistics, Do they matter?

### **Gold Level-Plaque**

**University of Minnesota:**

1003W Kelly Sobczak grade 10 Equine Flavor Detection

**FilmTec Corporation/Dow Chemical:**

1039W Nicholas Derrico grade 12 Synthesis of Biodegradable Nanospheres for Side-effects-free Anti-Cancer Drug Delivery

**The Medtronic Foundation:**

1062T Eric He grade 11 Brain-Computer Interface

### **Platinum-Plaque**

**Ecolab:**

1120T Tiffanie Stone grade 10 Color Correlation: Is there a correlation between color and skin set in red potato?

**3M Foundation:**

1017W Cyprien Sarteau grade 12 Characterizing Interactions of MT3 with Rab3A and with 14-3-3 Zeta to Find Evidence of the Role of MT3 in Alzheimer's Disease

### **SOCIETY FOR SCIENCE & THE PUBLIC Middle School Program:**

Top students from 6, 7 and 8 grades are nominated to the next level of competition.

6008 Rebecca Daml Does Gender Affect Taste?

6018 Madeline Schuster Does the Angle of Light on a Solar Cell Affect the Energy Production?

6021 William Decourt How does a beam bridge work?

6025 Zoe Peterson A spoon full of sugar

6037 Joseph Kachelmeier Balloon Rockets and Newton's Third Law

6040 Katherine Hartnett Some Like it Hot

7009	Cameron Causey	Whose mouth is cleaner, a dog's or a human's.
7013	Gabrielle Dominique	Does color affect a person's memory?
7019	Carmen Grace Poppert	Perception of Odor in a Room
7024	Evan Berger	Variation on the Stroop Effect
7040	Abby O'Brien	Vitamin C in Orange Juice
7046	James Kruse	Does Soft Tissue exist in Mosasauc Teeth?
7052	John Kamp	Go Nuts
7062	Conor Finnerty-Esmonde	The Trebuchet
7078	Jackie Koenig	Does Pop Damage Your Teeth?
7085	Andrew Koalska	Sports Drinks' Effect on Pulse Rate
7093-Team	Michael Thomas	Stimulation of the Brain
7093-Team	John Wojocik	Stimulation of the Brain
7105	Miranda Harincar	Measuring Lunar Mountains in my Backyard
7106	Madeline O'Meara	Pump It Up
7119	Miranda Olson	I Will Survive
7125	Mikayla Rettig	What does your plant thirst for?
7130	Natalie Vega	Does Temperature Change When Store Microwavable Popcorn Affect How Well It Pops?
7136	Laura Pueringer	Does Using Negative Ions Improve an Air Cleaner's Filtering?
7145	John Peichel	How Does Radiation Affect Grasse's Rate of Growth?
8004	Vanessa Voller	A+ttention
8025	Tommy Ollmann	What Makes a Potato Chip Taste Good?
8033	Madeleine Howard	Alternate Fuel: Hype or Hope
8036	Jackie Liska	Paddle Power (Does the Number of Blades on a Turbane Affect the Amount of Energy Produced)
8043	Ruth Murray	How Does the Structure of a Bridge Affect How Much Weight It Can Hold?
8049	Nate Rue	Absorption Project
8053	Anushua Bhattacharya	Mommy, the ketchup won't flow; he necessity of yeld stress in fluids
8057	Cyrie Holman	Are Twin Cities Ponds Healthy?
8071	Panra Yang	Inhibitory effect of household spices on the growth of E Coli.
8076	Hannah Perry	Soaring Spuds
8087-Team	Charlie Turch	Soundwaves Through Materials
8087-Team	Joey Selisk	Soundwaves Through Materials

**Minnesota Academy of Science State Fair-Projects selected to represent our region in competition in St. Paul, March 30-April 1, 2008**

7002W	Tommy Albers	grade 7	Fishy Findings: Does Water Temperature Affect Fish Respiration?
7009S	Cameron Causey	grade 7	Whose mouth is cleaner, a dog's or a human's.
7013W	Gabriella Dominique	grade 7	Does color affect a person's memory?
7019T	Carmen Grace Poppert	grade 7	Perception of Odor in a Room
7024S	Evan Berger	grade 7	Variation on the Stroop Effect
7026T-Team	Jake Dick	grade 7	Visual Perception
7026T-Team	Neil Hoffman	grade 7	Visual Perception
7028S	Dylan Schmidt	grade 7	DNA Variation in Onions

7029S	Mallory Diekmann	grade 7	An Ode to Mold-Which Bread Molds Fastest?
7031S	Kevin Docherty	grade 7	Burn Baby Burn - How Fast Fabric Burns
7035T	Madeline Stevens	grade 7	How Taste is Affected by Sight and Smell
7040W	Abby O'Brien	grade 7	Vitamin C in Orange Juice
7046T	James Kruse	grade 7	Does Soft Tissue exist in Mosasaur Teeth?
7052W	John Kamp	grade 7	Go Nuts
7057S	Elena Anderson	grade 7	Floating on air force and friction
7058W	Haydn Johnson	grade 7	Garage Door Sensor Protector
7062S	Conor Finnerty-Esmonde	grade 7	The Trebuchet
7065S	Aidan Kronmiller	grade 7	Weight Held With and without Torsion
7066S	Anastasia Macey	grade 7	Which Hardwood Flooring is the Hardest?
7071S	Harry Broderick	grade 7	How major roads effect pollution in parks
7073T	Heather Stone	grade 7	Let's Talk About Recycling
7074W	Peter Heinz	grade 7	Statistics, Do they matter?
7077S	Katja Lange	grade 7	Comparison of Swimmers VS Non Swimmers Arm Fat and Arm Muscle
7078S	Jackie Koenig	grade 7	Does Pop Damage Your Teeth?
7085T	Andrew Koalska	grade 7	Sports Drinks' Effect on Pulse Rate
7093T-Team	Michael Thomas	grade 7	Stimulation of the Brain
7093T-Team	John Wojcik	grade 7	Stimulation of the Brain
7095T	Andy Ylityalo	grade 7	Disinfecting Drinking Water, What Works Best?
7101W	Becca Lundberg	grade 7	Crystal Clear Tones
7105W	Miranda Harincar	grade 7	Measuring Lunar Mountains in my Backyard
7106S	Madeline O'Meara	grade 7	Pump It Up
7116S	Dao Xiong	grade 7	How does lightness and darkness effect the growth of plants
7119T	Miranda Olson	grade 7	I Will Survive
7125W	Mikayla Rettig	grade 7	What does your plant thirst for?
7130W	Natalie Vega	grade 7	Does Temperature Change When Store Microwavable Popcorn Affect How Well It Pops?
7131W	James Stroncek	grade 7	Electroplating
7136W	Laura Pueringer	grade 7	Does Using Negative Ions Improve an Air Cleaner's Filtering?
7145W	John Peichel	grade 7	How Does Radiation Affect Grasse's Rate of Growth?
8001W	Alex Houg	grade 8	Are Dogs Colorblind?
8004S	Vanessa Voller	grade 8	A+ttention
8009S	Emma Bauer	grade 8	Does Your Dominance Affect What You're Good At?
8014S-Team	Madeline Johnson	grade 8	Does Exercise Enhance Memory in Children?
8014S-Team	Michael Johnson	grade 8	Does Exercise Enhance Memory in Children?
8020S	Claire Holdreith	grade 8	How does the distance between and the depth of the medals in do the potato affect the voltage of a potato battery.
8025T	Tommy Ollmann	grade 8	What Makes a Potato Chip Taste Good?
8033S	Madeleine Howard	grade 8	Alternate Fuel: Hype or Hope
8036S	Jackie Liska	grade 8	Paddle Power (Does the Number of Blades on a Turbane Affect the Amount of Energy Produced)
8041T	Gregory Zeien	grade 8	Does the rocker-bogie system improve a robotic vehicles manuverability
8043T	Ruth Murray	grade 8	How Does the Structure of a Bridge Affect How Much Weight It Can Hold?
8044T	Jimmy Allender	grade 8	How Far Can It Go?

8049S	Nate Rue	grade 8	Absorption Project
8053T	Anushua Bhattacharya	grade 8	Mommy, the ketchup won't flow; he necessity of yeld stress in fluids
8057S	Cyrie Holman	grade 8	Are Twin Cities Ponds Healthy?
8065T	Lauren Yares	grade 8	Reaction Time
8071S	Panra Yang	grade 8	Inhibitory effect of household spices on the growth of E Coli.
8074S	Emily Longley	grade 8	Ideal Body Length of a Rocket for Maximum Height
8076S	Hannah Perry	grade 8	Soaring Spuds
8081W	Sreyas Chintapalli	grade 8	Monocots v. Eudicots
8082W	Michael Dungan	grade 8	The Effect of Secondhand Smoke on Plant Growth
8086T	Morgan Brin	grade 8	Germ Spaces in All Places
8087W	Team Joey Seliski	grade 8	Soundwaves Through Materials
8087W	-Team Charlie Turch	grade 8	Soundwaves Through Materials
1004S	Lucky Lee	grade 9	Spider & Insect Hearing
1005W	Hannah Borowsky	grade 9	Worms & UV Radiation
1006T	Team Victoria Nelson	grade 11	Effect of Caffeine on Drosophila melanogaster
1006T	Team Kevin Schwarz	grade 11	Effect of Caffeine on Drosophila melanogaster
1007T	Uyen Truong	grade 10	Can You Read This?
1008T	Jessica Koehn	grade 10	D.U.M.: Driving Under the Music
1009T	Austin Howes	grade 10	Effects of Caffeine Upon Short-Term Visual Memory Between Genders
1017W	Cyprien Sarteau	grade 12	Characterizing Interactions of MT3 with Rab3A and with 14-3-3 Zeta to Find Evidence of the Role of MT3 in Alzheimer's Disease
1022W	Brandon Law	grade 11	Metabolic Profiling of Mouse Brain Tumor Cells
1024W	Melody Hu	grade 12	The Effect of Hyperoxia on Neurovascular coupling
1033T	Alyssa Jackson	grade 10	Grapes to Raisins
1036W	Ami Yamamoto	grade 9	Investigating Supercooling
1039W	Nicholas Derrico	grade 12	Synthesis of Biodegradable Nanospheres for Side-effects-free Anti-Cancer Drug Delivery
1047T	Michael Cherkassky	grade 11	Application of Machine Learning Methods to Medical Diagnosis
1051T	Korine Oleson	grade 10	Does Global Warming Effect a Temperate Climate Zone?
1054S	Aly Xiong	grade 9	The Greenhouse Effect
1056T	Michael Rankin	grade 10	Comparison of Air Foils
1058S	Iola Edwards	grade 11	London Bridges
1063W	Elaina Hamann	grade 9	Buildings: Can a Building Be Built to Withstand a Tornado?
1064W-Team	Daniel Mokhtari	grade 10	Engineering a Program to Digitally Analyze Genetic Tests for HPV
1064W-Team	Stephen Trusheim	grade 11	Engineering a Program to Digitally Analyze Genetic Tests for HPV
1068T	Cinnamon Mahkuk	grade 12	Arsenic Levels in Twin Cities Runoff Water
1069T	Katie Rempfert	grade 10	Correlation Between Phosphorus Levels and the Density of Culex Mosquito Populations in Local Bodies of Water
1074W	Emily Nimmer	grade 11	Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae (Danaus plexippus) to Aid in Monarch Conservation
1075W	Matthew Buckner	grade 9	The Effect of Roofing Materials on Temperature
1078T	Abigail Williams	grade 12	Trout Stream Water Quality

1081T	Emma Martin	grade 11	Water Quality and Fertilizer Use: Is There a Correlation?
1088W	Madelaine Taft-Ferguson	grade 11	Analyzing Immune Response for Islet Transplants in Type-1 Diabetes
1091W	Siddharth Damania	grade 12	Cord Blood-Derived Regulatory T Cells: A Novel Cure for Graft-Versus-Host-Disease
1092T	Prithwis Mukhopadhyaya	grade 9	Development and Evaluation of a Sensitive Microtiter Plate Assay for Arylsulfatase B
1101W	Tara Mokhtari	grade 12	Role of Micro RNAs in the Development of Cancer Stem-Cells into Glioblastomas
1103T-Team	Adrienne Sherman	grade12	Differential Protein Expression Post Acid Exposure in Normal vs Pre-Malignant Barrett's Esophagus Cells
1103T-Team	Claire Weiss	grade 12	Differential Protein Expression Post Acid Exposure in Normal vs Pre-Malignant Barrett's Esophagus Cells
1107T	Ethan Chun	grade 12	Effects of Electric Fields on the Circadian Rhythm in Bioluminescence of Dinoflagellates
1114W	Breanna Demont	grade 9	Snowboarding Waxes
1118T	Elliott Elzkorn	grade 10	The Effects of Sound proof Glass on the Audibility of Various Instruments
1119W	Xin Li	grade 11	Characterization of sugar-response in Arabidopsis mutants to engineer plants for higher ethenol, soy dresel, and soy protein production
1120T	Tiffanie Stone	grade 10	Color Correlation: Is there a correlation between color and skin set in red potato?
1121W	Kyra Underbakke	grade 12	Operation Infiltration: The War for a Fitness Advantage Between Nitrogen-fixing Bradyrhizobia and Non-fixing Mutants
1126T	Tom Sherman	grade 10	The Effect of Thigmotropism on Biomass Production in the Genera Phaseolus, Medicago, and Lactuca

## Research Papers Selected for competition at the Tri-State Junior Science and Humanities Symposium March 29th and 30th.

### Grades 9-12 Senior Division

<b>1<sup>st</sup> Place Trophy</b>	HS16	Emily Nimmer	grade 11	Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvai ( <i>Danaus plexippus</i> ) to Aid in Monarch Conservation
<b>2nd Place Trophy</b>	HS25	Kaylyn Webb	grade 10	What Creates Stronger Metal Joints: Mechanical Fasteners or Adhesive Bonding?
<b>3rd Place Trophy</b>	HS11	Brandon Law	grade 11	Metabolic Identification of Glycolytic-Dependent P...

### Medalists (also competing at Symposium)

HS10	Melody Hu	grade 12	The Effect of Hyperoxia on Neuromuscular Coupling
HS21	Joanna Sink	grade 10	How Do Different Types of Instrumentalists Compare in Pitch Recognition?
HS22	Thomas Sherman	grade 10	The Effects of Thigmotropism on Biomass Production in the Genera <i>Phaseolus</i> , <i>Medicago</i> , and <i>Lactuca</i>

## Research Papers Selected for competition at the Minnesota State Science Fair, March 30-April 1, 2008

### Grades 7-8 Junior Division

<b>1<sup>st</sup> Place Trophy</b>	JH9	Katja Lang	grade 7	Comparison of Swimmers and Non-Swimmers
<b>2nd Place Trophy</b>	JH1	Liam DiZio	grade 8	The Controversy over Ethanol Fuel
<b>3rd Place Trophy</b>	JH7	Harry Broderick	grade 7	The Effect of Nearby Roads on Pollution in Parks

### Medalists (also competing at State)

JH8	Cyrie Holman	grade 8	Are Twin City Ponds Healthy?
JH13	James Scanlon	grade 7	Escalating Monster Storms
JH3	Paige Norman	grade 7	Comorbidity Controversy: Misdiagnosis of Pediatric Bipolar Disorder and ADHD

### Team Awards-presented to the best teams in each section: (trophy for each team member)

<b>GRADE 6:</b>	6029T	Katelyn McGhan & Emily Roberts	Bacteria Gross Out!
<b>GRADE 7:</b>	7026T	Jake Dick & Neil Hoffman	Visual Perception
<b>GRADE 8:</b>	8014S	Madeline Johnson & Michael Johnson	Does Exercise Enhance Memory in Children?
<b>GRADE 9-12:</b>	1006T	Victoria Nelson & Kevin Schwarz	Effect of Caffeine on <i>Drosophila melanogaster</i>

### Project Medalist-Outstanding projects in Sixth Grade

6001S	Leo Neira	Birds! Birds! Birds!
6008T	Rebecca Daml	Does Gender Affect Taste?
6018S	Madeline Schuster	Does the Angle of Light on a Solar Cell Affect the Energy Production?
6021S	William Decourt	How does a beam bridge work?
6025T	Zoe Peterson	A spoon full of sugar
6028S	Nicolette Musachio	Thump, Thump. Thump, What make Your Heart Pump?
6029T-team	Katelyn McGhan	Bacteria Gross Out!
6029T-team	Emily Roberts	Bacteria Gross Out!
6037W	Joseph Kachelmeier	Balloon Rockets and Newton's Third Law
6045W	Katie Wratkowski	Photosynthesis

### Minnesota Chapter of the American Fisheries Society:

Certificate & Fishing equipment--Presenter Brian Stock

#### Senior High

1069T	Katie Rempfert	grade 10	Correlation Between Phosphorus Levels and the Density of Culex Mosquito Populations in Local Bodies of Water
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#### Junior High

7002W	Tommy Albers	grade 7	Fishy Findings: Does Water Temperature Affect Fish Respiration?
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## **Hennepin Medical Society Alliance: Certificate and \$50 Savings Bond**

### **Senior High**

1089W Catie Essel grade 9 Back Pain in Adolescence Caused by Backpacks

### **Junior High**

7090S Grace Scorpio grade 7 Which Type of Water is Healthiest?

**Associate of Women Geoscientists:** Certificate to female whose project exemplifies high standards of innovativeness and scientific excellence in geosciences.

1068T Cinnamon Mahkuk grade 12 Arsenic Levels in Twin Cities Runoff Water

8033S Madeleine Howard grade 8 Alternate Fuel: Hype or Hope

7069W Rebekah DePenning grade 7 What's in the H<sub>2</sub>O: Testing for pH and Chlorine

## **University of Minnesota Department of Writing Studies: gift bag**

1074W Emily Nimmer grade 11 Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae (*Danaus plexippus*) to Aid in Monarch Conservation

**National Oceanic and Atmospheric Administration:** Certificate to student whose project helps understand and predict the changes in the Earth's environment

1081T Emma Martin grade 11 Water Quality and Fertilizer Use: Is There a Correlation?

1054S Aly Xiong grade 9 Greenhouse Effect

1071W Laura Pratt grade 9 Is Wind Power Worth it?

**US Department of Health & Human Services:** Certificate to the students who creatively illustrate and expand on healthy lifestyles, healthy diets and no tobacco use.

6027S Margaret Harrington grade 6 High Fructose Sugar and its Affect on the Human Body

**East Side Science Club Alumni Awards:** Medals are presented to outstanding youths that demonstrate innovation and creativeness in project development.

8009S Emma Bauer Does Your Dominance Affect What You're Good At?

7059W Rebecca Kunau Photovoltaic Power

7097W Joshua Herman Air pressure - ball bouncing dynamics

8062W Amani Mrutu The Fastest Music Chorus (Measured in Words Per Minute)

6022W Rachel Gunther How Does Temperature affect how crickets chirp?

6017S Antigone Delton How does fog form?

7034S Griffin Caron How Fast Fabrics Burn

6024S Elliot Moormann What School Drinking Fountain is the Best to Drink From?

7019T Carmen Grace Poppert Perception of Odor in a Room

8032T Stephen Juliff Lead in the Inner City

8067T Stephanie Noonan Which Fabric Content Protects You Most From the Sun?

8003S Michael McMahon Which Paw?

**Mu Alpha Theta:** Certificate awarded to students demonstrating the most challenging, original, thorough and creative investigation of a problem involving modern mathematics.

1048T	Thomas Elling	grade 10	Can a Sudoku Puzzle be Solved with a Computer Program?
1050W	Kimberly Baker	grade 9	The Comparative Effectiveness of Tic-Tac-Toe Opening Moves

**Ricoh Sustainable Development Award:** certificate & drawing opportunity

8064T	Amy Peick	grade 8	How Music Affects Heart Rate and Blood Pressure
8070S	Eric Smith	grade 8	How spices affect the growth of E.Coli
8081W	Sreyas Chintapalli	grade 8	Monocots v. Eudicots

**American Meteorological Society:** Certificates for outstanding achievements in Meteorological Science

1051T	Korine Oleson	grade 10	Does Global Warming Effect a Temperate Climate Zone?
8039T	Trygve Nelson	grade 8	Wind Energy
8031S	Brianna Vigliotti	grade 8	Here come the clouds.
7049S	Jacob Gabrielli	grade 7	Predicting the weather.
7047W	Kristina Velek	grade 7	Fox 9 vs CNN, who has the most Accurate Weather Prediction?
1053W	Jesse Miller	grade 10	The Effect of Greenhouse Gases on Temperature Fluctuation

**Graduate Women In Science Outreach-University of Minnesota:**

Certificate and \$25:one per grade.

grade 6	6028S	Nicolette Musachio	Thump, Thump. Thump, What make Your Heart Pump?
grade 7	7081S	Hannah Brady	Fingerprints and their similarities
grade 8	8019S	Ka Vang	What type of drink hydrates you most?
grade 9	1050W	Kimberly Baker	The Comparative Effectiveness of Tic-Tac-Toe Opening Moves
grade 10	1003W	Kelly Sobczak	Equine Flavor Detection
grade 11	1058S	Iola Edwards	London Bridges
grade 12	1068T	Cinnamon Mahkuk	Arsenic Levels in Twin Cities Runoff Water

**US Metric Association:** Certificate to the student whose project involves a significant amount of quantitative measurement and which best uses the metric system.

1103T-	team Adrienne Sherman	grade 12	Differential Protein Expression Post Acid Exposure in Normal vs Pre-Malignant Barrett's Esophagus Cells
1103T-	team Claire Weiss	grade 12	
1066S-	team Farhiya Hassan	grade 9	What Type of Tape Sticks the Best?
1066S-	team Tarhonda Thomas	grade 9	
1115W	Xin Li	grade 11	Characterization of sugar-response in Arabidopsis mutants to engineer plants for higher ethenol, soy dresel, and soy protein production

**ASM Materials Education Foundation: Medallion (In the mail) and Certificate recognizing the best materials engineering project**

1060T	Kaylyn Webb	grade 10	What Creates Stronger Metal Joints: Mechanical Fasteners or Adhesive Bonding?
1019S	Arthur Nguyen	grade 9	Is Cheaper Any Better?
1039W	Nicholas Derrico	grade 12	Synthesis of Biodegradable Nanospheres for Side-effects-free Anti-Cancer Drug Delivery

**Intel Excellence in Computer Science Award:  
Certificate and \$200 CHECK IN THE MAIL**

1047T	Michael Cherkassky	grade 11	Application of Machine Learning Methods to Medical Diagnosis
8030S	Zack Shimek	grade 8	Windows vs. Linux
1050W	Kimberly Baker	grade 9	The Comparative Effectiveness of Tic-Tac-Toe Opening Moves

**American Psychology Association: Certificate**

7019T	Carmen Grace Poppert	grade 7	Perception of Odor in a Room
7015S	Medora Sweet	grade 7	Does the amount of a person's knowledge regarding global warming affect their behavior and actions to stop it?
7013W	Gabrielle Dominique	grade 7	Does color affect a person's memory?

**Stockholm Junior Water Prize: Certificate and folder. Chance to compete in [www.SJWP.org](http://www.SJWP.org) paper competition**

1069T	Katie Rempfert	grade 10	Correlation Between Phosphorus Levels and the Density of Culex Mosquito Populations in Local Bodies of Water
1081T	Emma Martin	grade 11	Water Quality and Fertilizer Use: Is There a Correlation?
1079T	Abigail Williams	grade 12	Trout Stream Water Quality
1028S	Jessica Velasquez	grade 10	Bubble Time
1042S	Carissa Ontiveros	grade 9	The Effect of Materials to Melt Ice
1043S	Sompos Nhul	grade 9	The Melting Rate of Ice Mixed With Substances
1036W	Ami Yamamoto	grade 9	Investigating Supercooling
1021W	Elizabeth Washko	grade 9	Why Hands Wrinkle After Water Immersion
1121W	Kyra Underbakke	grade 12	Operation Infiltration: The War for a Fitness Advantage Between Nitrogen-fixing <i>Bradyrhizobia</i> and Non-fixing Mutants

**American Council of Engineering Companies of Minnesota:  
Top student receives TI calculator**

**Grand Award & Calculator:**

1063W	Elaina Hamann	grade 9	Buildings: Can a Building Be Built to Withstand a Tornado?
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**Honor awards: (certificate)**

6021S	William Decourt	grade 6	How does a beam bridge work?
6033W	Tom Stinar	grade 7	Does the type of metal and the number of wire wraps affect the strength of an electromagnet.
7062S	Conor Finnerty-Esmonde	grade 7	The Trebuchet
7065S	Aidan Kronmiller	grade 7	Weight Held With and without Torsion
8043T	Ruth Murray	grade 8	How Does the Structure of a Bridge Affect How Much Weight It Can Hold?
8052T	William Miller	grade 8	Hardening Steel
1056T	Michael Rankin	grade 10	Comparison of Air Foils
1065S-team	Kyle Reiter	grade 9	Steel Strength vs Quench Temperature.
1065S-team	Raul Varga	grade 9	Steel Strength vs Quench Temperature.
1065S-team	Tanner Wright	grade 9	Steel Strength vs Quench Temperature.

**Yale Science and Engineering Association:** Certificate and Medallion in the mail. Excellent project in Computer science, Physics or Chemistry Category by an 11th grader.

1047T	Michael Cherkassky	grade 11	Application of Machine Learning Methods to Medical Diagnosis
1058S	Iola Edwards	grade 11	London Bridges
1022W	Brandon Law	grade 11	Metabolic Profiling of Mouse Brain Tumor Cells

**ISEF Alumni Awards**

**Sponsor: Timara Underbakke**

**\$25 cash & certificate:**

8059S	Amanda Alden	grade 8	How does different level of pH affect seed germination. Sunscreen Effectiveness
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**Science medal key chain & certificate**

8057S	Cyrie Holman	grade 8	Are Twin Cities Ponds Healthy?
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**Sponsor: Michael Lohman**

**One hour in Flight Simulator**

8032T	Stephen Juliff	grade 8	Lead in the Inner City
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**Minnesota Agriculture in the Classroom: \$75 check****Project:**

1120T	Tiffanie Stone	grade 10	Color Correlation: Is there a correlation between color and skin set in red potato?
1023W	Bridget Sweeney	grade 9	The Effect of CO2 on Glycine Max Growth
8061S	James Hartnett	grade 8	The Effect of Certain Additives on a Compost Pile

**Paper**

HS22	Thomas Sherman	grade 10	The Effects of Thigmotropism on Biomass Production in the Genera Phaseolus, Medicago, and Lactuca
JH1	Liam DiZio	grade 8	The Controversy over Ethanol Fuel

**USDA Agriculture Research Service:** Books related to the area of study, certificate, Agricultural Research journal subscription (mail in form)

1121W	Kyra Underbakke	grade 12	Operation Infiltration: The War for a Fitness Advantage Between Nitrogen-fixing <i>Bradyrhizobia</i> and Non-fixing Mutants
1119W	Xin Li	grade 11	Characterization of sugar-response in <i>Arabidopsis</i> mutants to engineer plants for higher ethenol, soy dresel, and soy protein production
1074W	Emily Nimmer	grade 11	Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae ( <i>Danaus plexippus</i> ) to Aid in Monarch Conservation
8080T	Haley Larson	grade 8	Greywater vs. Tap Water
7112W	Allison Scobbie	grade 7	Are Worms So Wonderful?
6045W	Katie Wratkowski	grade 6	Photosynthesis

**University of MN Awards-Undergraduate Research Opportunity Program Scholarships**

1022W	Brandon Law	grade 11	Metabolic Profiling of Mouse Brain Tumor Cells
1119W	Xin Li	grade 11	Characterization of sugar-response in <i>Arabidopsis</i> mutants to engineer plants for higher ethenol, soy dresel, and soy protein production
1081T	Emma Martin	grade 11	Water Quality and Fertilizer Use: Is There a Correlation?

**University of MN Exploring Careers Program Summer-must complete application**

1027T	Brittany Harrington	grade 9	Bottled Water - Is it really Different?
1072T	Lizeth Martinez-Ayala	grade 9	Particulates in Snow in Minneapolis, MN
1060T	Kaylyn Webb	grade 10	What Creates Stronger Metal Joints: Mechanical Fasteners or Adhesive Bonding?
1069T	Katie Rempfert	grade 10	Correlation Between Phosphorus Levels and the Density of Culex Mosquito Populations in Local Bodies of Water
1062T	Eric He	grade 11	Brain Computer Interface
1058S	Iola Edwards	grade 11	London Bridges

**Minnesota Astronomical Society:** Certificate and Prize package

7105W	Miranda Harincar	grade 7	Measuring Lunar Mountains in my Backyard
7107T	Joshua Potvin	grade 7	Spectroscope

## Minnesota Space Frontier Society: Certificate and Prize package

6018S	Madeline Schuster	grade 6	Does the Angle of Light on a Solar Cell Affect the Energy Production?
6034S	Immanuel Bier	grade 6	Parachute Physics
6035S	Cole Dunlap	grade 6	Rockets in Outer Space
6037W	Joseph Kachelmeier	grade 6	Balloon Rockets and Newton's Third Law
7053T	Tom Young	grade 7	Propeller Theory: How Length and Pitch Affect Thrust
7057S	Elena Anderson	grade 7	Floating on air force and friction
7060S	Patrick Jambor	grade 7	Rockets: Does Mass Affect Height?
7076S	Jazmin Fernandez	grade 7	Providing Centrifugal Force Force False
7133T	Emily Harper	grade 7	Balloon Rockets
8037S	Cameron Gemlo	grade 8	Propeller Blades: What's Their Angle?
8041T	Gregory Zeien	grade 8	Does the rocker-bogie system improve a robotic vehicles maneuverability
8074S	Emily Longley	grade 8	Ideal Body Length of a Rocket for Maximum Height
8078S-Team	Alexander Bishop	grade 8	How Fin Size and Nose Cone Length Affect the Altitude Reached By a Rocket
8078S-Team	Brooks Mencke	grade 8	How Fin Size and Nose Cone Length Affect the Altitude Reached By a Rocket
1056T	Michael Rankin	grade 10	Comparison of Air Foils
1111S	Nathaniel Platson	grade 9	How Does the Design of a Rocket Affect Its Altitude?

## Society for In Vitro Biology: Certificate

1111S	Nathaniel Platson	grade 9	How Does the Design of a Rocket Effect Its Altitude?
1109T	Brett Herdegen	grade 10	Which Mouthwash Works the Best Against <i>Bacillus subtilis</i> ?
1119W	Xin Li	grade 11	Characterization of sugar-response in <i>Arabidopsis</i> mutants to engineer plants for higher ethenol, soy dresel, and soy protein production

**Glen Domeier Memorial Award:** \$50, Compass and use book to project that best demonstrates excellence in environmental science.

1074W	Emily Nimmer	grade 11	Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae ( <i>Danaus plexippus</i> ) to Aid in Monarch Conservation
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**Killeen Memorial Award:** Trophy to the student who best shows inspiration for their project.

6044W	Tom Levoir	grade 6	Home Sprinklers and Water Conservation
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**US ARMY-  
Western Suburbs:**

**Certificates & Medal:**

1022W Brandon Law 11 Metabolic Profiling of Mouse Brain Tumor Cells

**Shirts & Certificates**

1017W Cyprien Sarteau grade 12 Characterizing Interactions of MT3 with Rab3A and with 14-3-3 Zeta to Find Evidence of the Role of MT3 in Alzheimer's Disease  
1018W Ahmed Fayo grade 9 DNA  
1053W Jesse Miller grade 10 The Effect of Greenhouse Gases on Temperature Fluctuation  
1064W-Team Stephen Trusheim grade 10 Engineering a Program to Digitally Analyze Genetic Tests for HPV  
1064W-Team Daniel Mokhtari grade 11 Engineering a Program to Digitally Analyze Genetic Tests for HPV  
1024W Melody Hu grade 12 The Effect of Hyperoxia on Neurovascular coupling

**Certificates**

1119W Xin Li grade 11 Characterization of sugar-response in Arabidopsis mutants to engineer plants for higher ethenol, soy dresel, and soy protein production  
1121W Kyra Underbakke grade 12 Operation Infiltration: The War for a Fitness Advantage Between Nitrogen-fixing Bradyrhizobia and Non-fixing Mutants  
8082W Michael Dungan grade 8 The Effect of Secondhand Smoke on Plant Growth  
7105W Miranda Harinvar grade 7 Measuring Lunar Mountains in my Backyard  
7102W Madeline Jensen grade 7 Do Mirrors Make Solar Panels More Effective?

**St. Paul:**

**Certificates & Medal:**

8033S Madeleine Howard grade 8 Alternate Fuel: Hype or Hope

**Shirts & Certificates**

8071S Panra Yang grade 8 Inhibitory effect of household spices on the growth of E Coli.  
8070 S Eric Smith grade 8 How spices affect the growth of E.Coli  
8061S James Hartnett grade 8 The Effect of Certain Additives on a Compost Pile  
8057S Cyrie Holman grade 8 Are Twin Cities Ponds Healthy?

**Certificates**

7096S Karl Zinkl grade 7 The 5 Second Rule, how much bacteria do dropped foods store?  
6034S Imanuel Bier grade 6 Parachute Physics  
6035S Cole Dunlap grade 6 Rockets in Outer Space  
7015S Medora Sweet grade 7 Does the amount of a person's knowledge regarding global warming affect their behavior and actions to stop it?

## *US ARMY-continued*

### **Twin Cities:**

#### **Certificates & Medal:**

1081T Emma Martin grade 11 Water Quality and Fertilizer Use: Is There a Correlation?

#### **Shirts & Certificates**

1092T Prithwis Mukhopadhyay grade 9 Development and Evaluation of a Sensitive Microtiter Plate Assay for Arylsulfatase B  
1073T Jaime Nelson grade 12 Road Salt Levels in Metro Area Lakes and Wetlands  
1078T Abigail Williams grade 12 Trout Stream Water Quality  
1079T Cierra Walker grade 10 Urban vs Rural Waters  
1069T Katie Rempfert grade 10 Correlation Between Phosphorus Levels and the Density of Culex Mosquito Populations in Local Bodies of Water

#### **Certificates**

1068T Cinnamon Mahkuk grade 12 Arsenic Levels in Twin Cities Runoff Water  
1048T Thomas Elling grade 10 Can a Sudoku Puzzle be Solved with a Computer Program?  
8032T Stephen Juliff grade 8 Lead in the Inner City  
7054T Katie Jonza grade 7 Solar Energy

### **US Navy/US Marine Corps: Certificate and award packet**

6019T Rachel Oberst grade 6 Buoyancy, the Constant Floating Machine  
1056T Michael Rankin grade 10 Comparison of Air Foils  
1060T Kaylyn Webb grade 10 What Creates Stronger Metal Joints: Mechanical Fasteners or Adhesive Bonding?  
7057S Elena Anderson grade 7 Floating on air force and friction  
8036S Jackie Liska grade 8 Paddle Power (Does the Number of Blades on a Turbine Affect the Amount of Energy Produced)  
7032W Lewis Krummen grade 7 Does Distance Count? Hydrogen Fuel Cells: Electrode Analysis  
8045W Tyrone Lall grade 8 Lithium Batteries vs Titanium Batteries  
1071W Laura Pratt grade 9 Is wind power Worth it?

### **Herbert Hoover Young Engineer Award: Certificate and Medal to the project which best demonstrates outstanding engineering effort.**

1056T Michael Rankin grade 10 Comparison of Air Foils  
1061S-Team Sebastian Adesoro grade 9 Electrical Resistivity  
1061S-Team Mary Henschell grade 9 Electrical Resistivity  
1061S-Team Libbie Osaben grade 9 Electrical Resistivity  
1064W-Team Stephen Trusheim grade 11 Engineering a Program to Digitally Analyze Genetic Tests for HPV  
1064W-Team Daniel Morktari grade 10 Engineering a Program to Digitally Analyze Genetic Tests for HPV

## US Air Force: Certificate, WiFi Locator, USB Drive

1031T	Kimberly Oleson	grade 10	Different Outcomes in Teeth Whitening
1062T	Eric He	grade 11	Brain-Computer Interface
1068T	Cinnamon Mahkuk	grade12	Arsenic Levels in Twin Cities Runoff Water
1081T	Emma Martin	grade 11	Water Quality and Fertilizer Use: Is There a Correlation?
1047T	Michael Cherkassky	grade 11	Application of Machine Learning Methods to Medical Diagnosis
1028S	Jessica Velasquez	grade 10	Bubble Time
1061S-Team	Sebastian Adesoro	grade 9	Electrical Resistivity
1061S-Team	Mary Henschell	grade 9	Electrical Resistivity
1061S-Team	Libbie Osaben	grade 9	Electrical Resistivity
1036W	Ami Yamamoto	grade 9	Investigating Supercooling
1039W	Nicholas Derrico	grade 12	Synthesis of Biodegradable Nanospheres for Side-effects-free Anti-Cancer Drug Delivery
1088W	Madelaine Taft-Ferguson	grade 11	Analyzing Immune Response for Islet Transplants in Type-1 Diabetes

## Arnold Air Society, Air Force ROTC

8004S Vanessa Voller grade 8 A+ttention

## National Society of Professional Engineers Certificate, lapel pin and subscription to Engineering Times to the most outstanding engineering project.

1059T	Caleb Hoover	grade 10	The New I-35W Bridge Design
1058S	Iola Edwards	grade 11	London Bridges
1064W-Team	Stephen Trusheim	grade 11	Engineering a Program to Digitally Analyze Genetic Tests for HPV
1064W-Team	Daniel Mokharti	grade 10	Engineering a Program to Digitally Analyze Genetic Tests for HPV

## "Almost Perfect" Awards: Trophies to teachers who have consistently submitted "almost perfect"

Tamra Paschall

St Pascal Baylon School

## Sister Eugenia Smith Memorial Award: Trophy

Mara Gould Hopkins Junior High West

## Twin Cities Regional Science Fair Awards: Must be present to win

Ant Works	7050T-Team	Brandie Joiner	grade7	Pollution
Cosmoskinetics	7050T-Team	Kathryn Koehnen	grade7	Pollution
Gordian's Knot	7047W	Kristina Velek	grade 7	Fox 9 vs CNN, who has the most Accurate Weather Prediction?
Plasma 360	7028S	Dylan Schmidt	grade 7	DNA Variation in Onions
Plasma 360	6035S	Cole Dunlap	grade 6	Rockets in Outer Space
Suspended Animation	8028S	Martin Camacho	grade 8	Audio Cryptography
Lumin Disk	8048T	Luke Stone	grade 8	Ya Feel Me?
Set Game	1053W	Jesse Miller	grade 10	The Effect of Greenhouse Gases on Temperature Fluctuation

**Outstanding Volunteerism Award: 2008 Medal for plaque and many many thanks for the hard work.**

**U. S. S. Nokomis Group**

**STEM--6th Grade Science, Technology, Engineering and Math--Badge**

6001S	Leo Neira	Birds! Birds! Birds!
6003S	Sofia Rowan-Martin	Smell, In, Dead
6004S-Team	Makayla Brummer	Tadpoles: Lake Water vs Distilled Water
6004S-Team	Megan Donnelly	Tadpoles: Lake Water vs Distilled Water
6008T	Rebecca Daml	Does Gender Affect Taste?
6010S-Team	Hanna Hamilton	Concentration 1, 2, 3
6010S-Team	Elise Tuma	Concentration 1, 2, 3
6018S	Madeline Schuster	Does the Angle of Light on a Solar Cell Affect the Energy Production?
6020S	Joseph Elwell	How Does a Trebuchet Work?
6021S	William Decourt	How does a beam bridge work?
6024S	Elliot	Moormann What School Drinking Fountain is the Best to Drink From?
6025T	Zoe Peterson	A spoon full of sugar
6028S	Nicolette Musachio	Thump, Thump. Thump, What make Your Heart Pump?
6029T-Team	Katelyn McGhan	Bacteria Gross Out!
6029T-Team	Emily Roberts	Bacteria Gross Out!
6037W	Joseph Kachelmeier	Balloon Rockets and Newton's Third Law
6040S	Katherine Hartnett	Some Like it Hot
6044W	Tom Levoir	Home Sprinklers and Water Conservation

**SciGirls Award--Outstanding Science Communication; excellent science achievement.**

8053T	Anushua Bhattacharya	grade 8	Mommy, the ketchup won't flow; he necessity of yield stress in fluids
8033S	Madeleine Howard	grade 8	Alternate Fuel: Hype or Hope
6018S	Madeline Schuster	grade 6	Does the Angle of Light on a Solar Cell Affect the Energy Production?
7040W	Abby O'Brien	grade 7	Vitamin C in Orange Juice

**Dragonfly TV Award--Outstanding Science Communication**

7100W	Guy Jacques	grade 7	Concrete Strong
7072W	Quentin Stille	grade 7	How Tough is Your TP?
7078S	Jackie Koenig	grade 7	Does Pop Damage Your Teeth?
7104T	Mahad Osman	grade 7	Is the Strength of a Magnet Affected by Temperature?
7059W	Rebecca Kunau	grade 7	Photovoltaic Power
6014W	Andy Dang	grade 6	Polymer Power

**Forest Service Excellence Award-** For outstanding project related to the natural environment.

7116S	Dao Xiong	grade 7	How does lightness and darkness effect the growth of plants
7124S	Kristina Abbas	grade 7	Temperature VS Plant Growth.
7070S	Bridget Walde	grade 7	Birds and Oil Spills - Which Cleaner Works Best?

**Schools-Each school receives a trophy**

Academy of Bioscience

AFSA:

Agricultural and Food Sciences Academy

Annunciation

Anthony Middle School

Blake School

Blessed Trinity Catholic School

Breck School

Burnsville Senior High School

Calvin Christian - Edina

Calvin Christian School - Blaine

Capitol Hill Magnet

Central Middle School

Cyber Village Academy

Eden Prairie Central Middle School

Edina High School

Four Seasons A+ Academy

General Vessey Leadership Academy

Harding Senior High School

Hastings Middle School

Hopkins North Junior High

Immaculate Conception School

Johnson Senior High School

Lake Junior High School

Learning Alt Community School

L'Etoile du Nord French Immersion

Maranatha Christian Academy

Mounds View High School

Murray Junior High School

Nativity of Our Lord

Nawayee Center School

Oak Point Intermediate

Oakland Jr High School

Presentation of the Blessed Virgin Mary

Saint Ambrose

South High School - Minneapolis

St. Anthony High School

St. Charles Boromeo

St. Helena

St. John the Baptist

St. Pascal Baylon

St. Paul Academy & Summit School

St. Peter Catholic School

St. Thomas More Catholic School

Stillwater Area High School

Sunrise Park Middle School

Susan B. Anthony Middle School

Transfiguration

Virtus Academy Homeschool

Wayzata High School

West Junior High School