

ISEF - International Science and Engineering Fair

Phoenix, AZ - May 11-17, 2013

Finalists

Twin Cities

1081	Connor V Duffy	Grade 12	Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels
1149	Andrew S Ylitalo	Grade 12	Functionalization of Hexagonal Boron Nitride Nanolayers and Analysis with Transmission Electron Microscopy
1151	Aditi Das	Grade 11	Building New Agrobacterium Strains for High Efficiency Transformation of Plants

Western Suburbs

1084	Carolyn K Jons	Grade 9	A New Innovation in Food Preservation
1124	Jessica Ryvlin	Grade 12	Bioengineering the lung: Determining ideal oxygen concentrations to stimulate stem-cell growth on a transplantable lung matrix
1056	Apurv H Shekhar	Grade 11	A Topographic Pressure Equalization Approach to Facility Assignment with Capacity Constraints

St. Paul

1140	Graham L Gabrielson	Grade 12	The effect of molar mass of a fluid on the speed of a sound wave
1045	Mai S Moua	Grade 12	Fingerprints: Which techniques used to find latent fingerprints is the most efficient?

Alternates

Twin Cities

1st Alternate

1121	Marisa C Mortari	Grade 10	Novel Genetically Engineered Drugs Targeting Cancer Stem Cells
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2nd Alternate

1132	Sarah Davidson, Emily Wollmuth	Grade 12	The Effect of Human Airway Secretions on Pseudomonas aeruginosa
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3rd Alternate

1066	Max Ylitalo	Grade 9	Food or Fuel? Can Arrowroot or Cassava Replace Corn in the Production of Ethanol?
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Western Suburbs

1st Alternate

1054	Caleb J Kumar	Grade 12	There's an App for That: An iPhone Application for Post-stroke Upper Extremity Rehabilitation
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2nd Alternate

1117 Jenny Grade 12 Development of an ELISA Prototype to Detect the Presence of Novel
Lai Peptide TUF1 in Serum and Its Role on Stress Management

3rd Alternate

1158 Tiffany Ravelomanantsoa, Grade 12 Effects of Cold Exposed Milkweed on Monarch
Elisa B Villafana Butterfly (*Danaus plexippus*) Health and
Development

St. Paul**Sponsors Awards**

Winners must be present at the awards ceremony & have photo taken at project with award or an alternate will receive the award

Platinum Level-Plaque**3M Sponsor Award**

1033 Priyanka R Grade 11 Improving the Oral Absorption of Chemotherapeutic Drugs Through
Narayan the Use of Novel Nanoparticles

Medtronic Sponsor Award

1081 Connor V Duffy Grade 12 Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels

Ecolab Sponsor Award

1057 Kevin Barry Grade 12 The Effect of Water on the Temperature of Land

Gold Level-Plaque**Dow Water and Process Solutions Sponsor Award**

1050 Claire M Grade 11 Writing and applying Monte Carlo simulation software to examine
Simpson aerosol nucleation—a primary contributor to climate change

Silver Level-Plaque**Midway Party Rental Sponsor Award**

8094 Iris Holman Grade 8 How Pre-Exercise Nutrition Affects Workout Performance

Alliant Techsystems Sponsor Award

1077 Jason J Sylvestre Grade 11 Engineering VoltX, A Multifunctional Teleoperated Rescue Robot

Mintahoe Hospitality Group Sponsor Award

8104 Noah M Rooze Grade 8 Pollution = Mutation

Slattery Sales Group Sponsor Award

1098 Paige C Grade 12 Characteristics that Contribute to Nest Success of Endangered
Dempsey Red-headed Woodpeckers (*Melanerpes erythrocephalus*)

St. Paul Youth Fund Sponsor Award

8070 Grace L Gardner Grade 8 Oil Spills: Taking Oil Out of Water

Bronze Level-Ribbon**Office Max Sponsor Award**

8115 Mira E KammueLLer Grade 8 What percentage of stars have visible transits?

Minnesota Academy of Science State Science and Engineering Fair

Projects selected to represent our region in state competition

1001	Darby J Lofthus	Grade 10	The Effects of Exercise on Respiration Rate, Body Mass, and Swimming Patterns of <i>Carassius auratus</i> at Two Different Elevations
1002	Iman Pakzad	Grade 11	Host Fish Response to Mussel Lure
1004	Amy Bendtsen	Grade 10	The Gender Gap
1009	Samantha R Corcoran	Grade 10	Imagination Wars: Children vs. Adults
1011	Marisa J Dunning	Grade 10	Effects of Color on Memorization
1012	Abby Erdmann	Grade 12	Stop: A Study of Distracted Driving Behaviors in the Vicinity of Breck School
1013	Nirupa Galagedera	Grade 12	Nice Ride Expansion and Physical Activity
1018	Tess M Mueske	Grade 10	Perceptions of Organic Food
1019	Achinth K Murali	Grade 12	"Rethinking ADHD: relationships between symptoms, personality, brain volume, and reward processing"
1020	Abhishek Nayar, Stephen Kim	Grade 11	Birth of a Revolution
1024	Sanjana Srivastava	Grade 11	Identifying Executive Functioning Deficits From Gameplay Behavior Using Machine Learning
1025	Jacob W Tangney	Grade 10	Correlation between one's favorite music and their concentration
1026	Dennis W Toenjes	Grade 9	Responses to Local and Non-Local Bird Calls in Domestic Cats
1027	Nathaniel G Treimer	Grade 12	A Scientific Analysis of the Effects of Auditory Performance Feedback on Motor Skill Refinement
1031	Riley J Wedan	Grade 10	The Hidden Intelligence of Crowds
1033	Priyanka R Narayan	Grade 11	Improving the Oral Absorption of Chemotherapeutic Drugs Through the Use of Novel Nanoparticles
1035	Greer E Bingham	Grade 12	Starving Cancer: A study of glutamine dependency in cancer cells
1037	Emily J Chen	Grade 11	The Effect of FANCD2 on ATR kinase function
1038	Erica P Craddock	Grade 10	Cupcake Wars: Which contestant--vegetable oil, red wine or grapefruit juice--will win?
1041	Gina S Jostes	Grade 9	Gummybears vs. the force of gravity - How much can an adhesive hold?

1044	Matthew R McMillan	Grade 11	Engineering a polyelectrolyte-based film with a novel carbon nanotube base layer
1045	Mai S Moua	Grade 12	Fingerprints: Which techniques used to find latent fingerprints is the most efficient?
1050	Claire M Simpson	Grade 11	Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change
1051	Siddharth Sridher	Grade 9	Burning Calories: How much energy is stored in each type of food?
1053	Darius W Bieganski	Grade 12	A telemedicine tool for monitoring Parkinson's: Using Microsoft Kinect to engineer the ParkinsonsProtoTracker
1054	Caleb J Kumar	Grade 12	There's an App for That: An iPhone Application for Post-stroke Upper Extremity Rehabilitation
1056	Apurv H Shekhar	Grade 11	A Topographic Pressure Equalization Approach to Facility Assignment with Capacity Constraints
1057	Kevin Barry	Grade 12	The Effect of Water on the Temperature of Land
1064	Colton V Van Dorpe	Grade 10	The Effects of Temperature on the Voltage Output of a Photovoltaic Cell
1066	Max Ylitalo	Grade 9	Food or Fuel? Can Arrowroot or Cassava Replace Corn in the Production of Ethanol?
1067	Ben W Andrews	Grade 10	How Far does Shocky Shoot?
1071	Sam E Johnson	Grade 10	The Effects of Altering the Structural Design of Bridge Trusses on Bridge Strength and Wind Deflection
1075	Derek J Racek	Grade 10	Diamagnetic Strength of Common Materials
1077	Jason J Sylvestre	Grade 11	Engineering VoltX, A Multifunctional Teleoperated Rescue Robot
1080	Katherine R Carman, Bram HL Carr	Grade 11	Solar-Hydro-Powered Generator
1081	Connor V Duffy	Grade 12	Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels
1083	Felicia Y Hamann	Grade 12	Water Extractor
1084	Carolyn K Jons	Grade 9	A New Innovation in Food Preservation
1085	Kevin J Kucera	Grade 10	Correlation between Thermal Resistance and Noise Cancellation
1086	Jasmine J Lim	Grade 10	Cellulose vs. Cotton Insulation: Is One Better?
1087	Peter J Metzger	Grade 11	Improving Organic Solar Cell Materials by Characterizing Fundamental Physics in PtOEP
1092	Elliott C Weiler	Grade 11	Origins of Life: Engineering a Biosphere to Study Phospholipid Self-assembly
1096	Sydney L Botz	Grade 10	Comparison between the Decomposition Rate of Compost in a Windrow Pile and an Original Design
1098	Paige C Dempsey	Grade 12	Characteristics that Contribute to Nest Success of Endangered Red-headed Woodpeckers (<i>Melanerpes erythrocephalus</i>)
1100	Jane Koch	Grade 10	Hydroponics vs. Soil
1107	James C Earl	Grade 12	Infinite Minesweeper Arrays With Constant Value

1109	Redeat F Abegaz	Grade 12	Effects of Natural Extracts and Menthol Combined with Salicylic Acid on S. epidermis: Year 2
1115	Arush Jain	Grade 9	Positron Emission Tomography – Mathematical Model To Offset Partial Volume Effect Utilizing Aligned MRI To Improve Cancer Diagnosis
1117	Jenny Lai	Grade 12	Development of an ELISA Prototype to Detect the Presence of Novel Peptide TUF1 in Serum and Its Role on Stress Management
1120	Nina R Moll	Grade 10	A study of the cardiovascular system of a Carassius auratus.
1121	Marisa C Mortari	Grade 10	Novel Genetically Engineered Drugs Targeting Cancer Stem Cells
1124	Jessica Ryvlin	Grade 12	Bioengineering the lung: Determining ideal oxygen concentrations to stimulate stem-cell growth on a transplantable lung matrix
1132	Sarah Davidson, Emily Wollmuth	Grade 12	The Effect of Human Airway Secretions on Pseudomonas aeruginosa
1134	Bhargavi Papisetty	Grade 11	Infectivity Study of Prions Using In-Vitro Converted Y145stop in Ex-Vivo Conditions
1140	Graham L Gabrielson	Grade 12	The effect of molar mass of a fluid on the speed of a sound wave
1144	Merrick Pierson Smela	Grade 10	Modeling the exit velocity of a compressed air cannon
1149	Andrew S Ylitalo	Grade 12	Functionalization of Hexagola Boron Nitride Nomolayers and Analysis with Transmission Electron Microscopy
1151	Aditi Das	Grade 11	Building New Agrobacterium Strains for High Efficiency Transformation of Plants
1152	Matthew W Dorow	Grade 10	The Effects of Irradiation on Radish Seeds
1158	Tiffany Ravelomanantsoa, Elisa B Villafana	Grade 12	Effects of Cold Exposed Milkweed on Monarch Butterfly (Danaus plexippus) Health and Development
1159	Christopher Spencer, Chaitanya Chittineni	Grade 11	Over Expression of Osmotin for Improved Salt Resistance in Soybean
6007	Andje T Post	Grade 6	How Does Color Affect Taste?
6013	Julia Camacho	Grade 6	The Effects of Boiling On The Loss of Vitamin C in Vegetables
6034	Hannah Norman	Grade 6	Which Blade Design on a Wind Turbine Will Produce the Most Energy?
6038	Avni Jain	Grade 6	Utilization of Parabolic Reflectors to enhance energy generation through the power of Solar and Thermoelectric
6047	Abigail L Reeder	Grade 6	There is a pH for That
6049	Toby Sullivan	Grade 6	Designing for Disaster: Which Tsunami Barrier is Best?
6052	Luke Kolar	Grade 6	Ouch! Why Redheads are Tougher Than Blondes and Brunettes
6055	Nicholas R Martinez	Grade 6	Medication Mayhem
6072	Glenn D Rorer, Jameson Stahl	Grade 6	How Do Different Shotgun Choke Tubes Affect the Pattern of the Lead Pellets?
7001	Sophia R Clark	Grade 7	Mississippi Mussel Movement

7004	Grace Schmidt	Grade 7	DeLIGHTful Ladies: The Effect of Light on Painted Lady Pupae
7019	Gabriel N Reynolds	Grade 7	Does gender affect how quickly one could find hidden letters?
7023	Daniel S Votel	Grade 7	Dominant Eye Vs Dominant Hand
7024	Cameron J Weber	Grade 7	Recess = Positive Learning
7025	Dominic Wolters	Grade 7	Super Stroop Effect
7026	Andrew L Barton	Grade 7	An Inspiration from Norman Borlaug: A Study of Organic Fertilizers and Soil Types on Triticum Aestivum (Spring Wheat) Production
7035	Christian R Berger	Grade 7	How Does the Number of Charge Cycles Put Into the Leyden Jar Affect How Long the Discharging Spark is?
7037	Ellen A Carlson	Grade 7	Marker Science Fair Project
7039	Nicole C Dorn	Grade 7	Candy Chromatography
7047	Grace E. Nelson	Grade 7	The Foggy World of Dry Ice
7048	Kylie M Nevells	Grade 7	Scalp Psoriasis Treatment
7059	Eliza M Donnelly	Grade 7	The Effects Of Mining On Plant Growth
7062	Zach John Ertel	Grade 7	Gear Ratios; How do gear ratios affect a car's performance, acceleration, and fuel economy?
7076	Jack A Foley	Grade 7	Span vs. Weight Bearing Capacity
7079	Paislee ann Olson-Bengry	Grade 7	Flame Resistant PJs
7085	Caroline G Bowen	Grade 7	Polluting Our Earth? Analyzing Nitrogen Levels in Fertilizer Runoff
7086	Lauren M Copland	Grade 7	Go With The Flow, Darcy's Law and Hazardous Waste
7087	Cassidy Deng	Grade 7	Global Warming: Ocean Acidifacation
7089	Nikki Graves	Grade 7	What's That Green Stuff?
7092	James A. Kinsella	Grade 7	How acid rain affects aquatic plants
7095	Abigail R Moseman	Grade 7	The Carbon Dioxide Effect
7101	Sarah E Betts	Grade 7	An Exercise Therapy Program and Hand Device Invented To Benefit Osteoarthritic Patients
7105	Flannery M Enneking-Norton	Grade 7	Got Speed?
7112	Annie K O'Connell	Grade 7	Brain Power: Concentration Level
7114	Lucille K Omwena	Grade 7	Burning Calories
7129	Isak T Larsson	Grade 7	How does the active ingredient in a mouthwash affect the efficacy of that solution?
7152	Evan Joseph Huss	Grade 7	Does the Type of Light Bulb Affect Plant Growth?
8001	Nathaniel R Farmer	Grade 8	Investigating association preference behavior of wild caught fathead minnows (Pimephales promelas)
8007	Elena Extrand	Grade 8	Does Music Affect the Efficiency of Test-Taking?
8010	Harini Kethar, Linnea Gilbertson	Grade 8	Effects of background music on short-term memory
8015	Isabel R Warner	Grade 8	Deos The Speed At Which You Read Affect Your Comprehension Level?

8046	Mon C Non	Grade 8	How does certain formats affect the render speed in Final Cut Pro X
8052	Sovigne P Gardner	Grade 8	Dye-sensitized Solar Cells: Is there a correlation between acidity & anthocyanin effectiveness?
8064	Duncan Ince	Grade 8	To Pad Or Not To Pad - How To Survive Another Whack To The Head?
8065	Andrew M Weigel	Grade 8	Balancing water, a study of water tension
8070	Grace L Gardner	Grade 8	Oil Spills: Taking Oil Out of Water
8090	Euphrosyne I Daoutidou	Grade 8	Hearing Thresholds
8097	Geetanjali Rajamani	Grade 8	Comparison of Different Sweeteners in Terms of Influence on Blood Glucose Response and Taste
8104	Noah M Rooze	Grade 8	Pollution = Mutation
8113	Nicholas T Juckel	Grade 8	Puckology: The Effects of Temperature on Hockey Pucks
8127	Brian R Whelan	Grade 8	Which materials absorb sound the best?
8128	Mackenzie F Zenk	Grade 8	Supercooling Water: Can Different Types of Water Remain Liquid Below Their Natural Freezing Points?
8130	Andrew C Hienz, Spencer M Weiss, Matthew J Nyberg	Grade 8	Near Space, The Final Frontier
8132	Jackson Lee Muehlbauer	Grade 8	How does the type of soil effect the growth of corn?
8133	Tessa B Newman-Heggie	Grade 8	Grasses, Seeds and Salt: The Effect of Road Salt on Native Plants

The Broadcom MASTERS (Math, Applied Science, Technology and Engineering for Rising Stars), Society for Science & the Public

Top grade 6-8 students nominated to compete nationally online where they will explain their science project and demonstrate their use of STEM principles - science, technology, engineering and math - in the development and presentation of their project.

Twin Cities

6072	Glenn D Rorer, Jameson Stahl	Grade 6	How Do Different Shotgun Choke Tubes Affect the Pattern of the Lead Pellets?
7020	Caylyn C Rosch	Grade 7	Does chewing gum affect your test score?
7023	Daniel S Votel	Grade 7	Dominant Eye Vs Dominant Hand
7024	Cameron J Weber	Grade 7	Recess = Positive Learning
7026	Andrew L Barton	Grade 7	An Inspiration from Norman Borlaug: A Study of Organic Fertilizers and Soil Types on Triticum Aestivum (Spring Wheat) Production
7057	Collin TE Knorr-Wegener	Grade 7	The Importance of CPU Cooling
7076	Jack A Foley	Grade 7	Span vs. Weight Bearing Capacity
7152	Evan Joseph Huss	Grade 7	Does the Type of Light Bulb Affect Plant Growth?
7157	Matthew Paul Warmka	Grade 7	Do plants grow better in a water or carbon dioxide rich environment

8001	Nathaniel R Farmer	Grade 8	Investigating association preference behavior of wild caught fathead minnows (<i>Pimephales promelas</i>)
8064	Duncan Ince	Grade 8	To Pad Or Not To Pad - How To Survive Another Whack To The Head?
8065	Andrew M Weigel	Grade 8	Balancing water, a study of water tension

Western Suburbs

6034	Hannah Norman	Grade 6	Which Blade Design on a Wind Turbine Will Produce the Most Energy?
6038	Avni Jain	Grade 6	Utilization of Parabolic Reflectors to enhance energy generation through the power of Solar and Thermoelectric
6049	Toby Sullivan	Grade 6	Designing for Disaster: Which Tsunami Barrier is Best?
6052	Luke Kolar	Grade 6	Ouch! Why Redheads are Tougher Than Blondes and Brunettes
7004	Grace Schmidt	Grade 7	DeLIGHTful Ladies: The Effect of Light on Painted Lady Pupae
7048	Kylie M Nevells	Grade 7	Scalp Psoriasis Treatment
7085	Caroline G Bowen	Grade 7	Polluting Our Earth? Analyzing Nitrogen Levels in Fertilizer Runoff
7086	Lauren M Copland	Grade 7	Go With The Flow, Darcy's Law and Hazardous Waste
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8090	Euphrosyne I Daoutidou	Grade 8	Hearing Thresholds
8130	Andrew C Hienz, Spencer M Weiss, Matthew J Nyberg	Grade 8	Near Space, The Final Frontier

St. Paul

6007	Andje T Post	Grade 6	How Does Color Affect Taste?
6047	Abigail L Reeder	Grade 6	There is a pH for That
6055	Nicholas R Martinez	Grade 6	Medication Mayhem
7001	Sophia R Clark	Grade 7	Mississippi Mussel Movement
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8132	Jackson Lee Muehlbauer	Grade 8	How does the type of soil effect the growth of corn?
8133	Tessa B Newman- Heggie	Grade 8	Grasses, Seeds and Salt: The Effect of Road Salt on Native Plants

Top Ranking High School Papers

Grades 9-12

1st Place HS Research Paper Trophy

104 Carolyn K Jons Grade 9 A New Innovation in Food Preservation

2nd Place HS Research Paper Trophy

114 Heather J Stone Grade 11 Invention of a Tef Seeder and Conduction of Field Trials

3rd Place HS Research Paper Trophy

122 Paige C Grade 12 Characteristics that Contribute to Nest Success of Endangered
Dempsey Red-headed Woodpeckers (*Melanerpes erythrocephalus*)

High School Research Papers Selected for Competition at the Tri-State Junior Science and Humanities Symposium

North Central JSHS

101	Elliott C Weiler	Grade 11	Origins of Life: Engineering a Biosphere to Study Phospholipid Self-assembly
104	Carolyn K Jons	Grade 9	A New Innovation in Food Preservation
110	Peter J Metzger	Grade 11	Improving Organic Solar Cell Materials by Characterizing Fundamental Physics in PtOEP
112	Jasmine J Lim	Grade 10	Cellulose vs. Cotton Insulation: Is One Better?
114	Heather J Stone	Grade 11	Invention of a Tef Seeder and Conduction of Field Trials
115	Connor V Duffy	Grade 12	Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels
120	Tiffany Ravelomanantsoa, Elisa B Villafana	Grade 12	Effects of Cold Exposed Milkweed on Monarch Butterfly (<i>Danaus plexippus</i>) Health and Development
122	Paige C Dempsey	Grade 12	Characteristics that Contribute to Nest Success of Endangered Red-headed Woodpeckers (<i>Melanerpes erythrocephalus</i>)
133	Marie E Heim	Grade 10	Testing of Different Potting Soils
139	Sophia Lin Zhang	Grade 11	Effective Cardiac Myocyte Differentiation of Human Induced Pluripotent Stem Cells Requires VEGF

141	Sarah Davidson, Emily Wollmuth	Grade 12	The Effect of Human Airway Secretions on Pseudomonas aeruginosa
142	Matthew W Dorow	Grade 10	The Effects of Irradiation on Radish Seeds
145	Emily J Chen	Grade 11	The Effect of FANCD2 on ATR kinase function
146	Jeffrey Y Lee	Grade 9	The relationship between the polarity of amino acids from gene mutations and genetic Alzheimer's Disease
147	Aditi Das	Grade 11	Building New Agrobacterium Strains for High Efficiency Transformation of Plants
150	Iman Pakzad	Grade 11	Host Fish Response to Mussel Lure
153	Alexandria C Herr	Grade 12	Characterization of Novel Fe(III) Reducing and Fe(II) Oxidizing Bacteria of the Soudan Mines
154	Priyanka R Narayan	Grade 11	Improving the Oral Absorption of Chemotherapeutic Drugs Through the Use of Novel Nanoparticles
159	Caleb J Kumar	Grade 12	There's an App for That: An iPhone Application for Post-stroke Upper Extremity Rehabilitation
160	Apurv H Shekhar	Grade 11	Location, Location, Capacity: A Second Generational Study on Capacity Constrained K-Means Clustering
164	Tessa G Nania	Grade 10	The Smell of Short-term Memory
190	Riley J Wedan	Grade 10	The Hidden Intelligence of Crowds
191	Jessica Ryvlin	Grade 12	Ideal oxygen environment for mesenchymal induction to stimulate lung epithelial cell growth on a transplantable lung matrix
192	Sanjana Srivastava	Grade 11	Identifying Executive Functioning Deficits From Gameplay Behavior Using Machine Learning
195	Bhargavi Papisetty	Grade 11	Infectivity Study of Prions Using In-Vitro Converted Y145stop in Ex-Vivo Conditions
199	Selvi S Bunce	Grade 10	The Effect of Color on Memory
210	Jenny Lai	Grade 12	Development of an ELISA Prototype to Detect the Presence of Novel Peptide TUF1 in Serum and Its Role in Stress Management
211	Abby Erdmann	Grade 12	Stop: A Study of Distracted Driving Behaviors in the Vicinity of Breck School
214	Anthony J Benecke	Grade 10	What Mouthwash is the Most Effective at Killing Bacteria
221	Matthew R McMillan	Grade 11	Engineering a polyelectrolyte-based film with a novel carbon nanotube base layer
222	David Grzan	Grade 12	Effects of Cathode Shielding Methods in an Inertial Electrostatic Confinement Fusion Reactor
224	Claire M Simpson	Grade 11	Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change
225	Andrew S Ylitalo	Grade 12	Functionalization of Hexagonal Boron Nitride Monolayers and Analysis with Transmission Electron Microscopy

Top Ranking Middle School Papers

Grades 6-8

1st Place MS Research Paper Trophy

528 Sarah E Betts Grade 7 An Exercise Therapy Program and Hand Device Invented To Benefit Osteoarthritic Patients

2nd Place MS Research Paper Trophy

530 Iris Holman Grade 8 How Pre-Exercise Nutrition Affects Workout Performance

3rd Place MS Research Paper Trophy

515 Nathaniel R Farmer Grade 8 Investigating association preference behavior of wild caught fathead minnows (*Pimephales promelas*)

Middle School Research Papers Selected for Competition at the Minnesota State Science & Engineering Fair

Symposium style presentation of research papers grades 7-8 - March 20-22, 2011

506 Tessa B Newman-Heggie Grade 8 Grasses, Seeds and Salt: The Effect of Road Salt on Native Plants

507 Lauren E Mendoza Grade 7 Soil: Dig it!

508 Caroline G Bowen Grade 7 Polluting Our Earth? Analyzing Nitrogen Levels in Fertilizer Runoff

515 Nathaniel R Farmer Grade 8 Investigating association preference behavior of wild caught fathead minnows (*Pimephales promelas*)

519 Sydney M. Beard Grade 7 Save A Life: selecting the right disinfectant

525 Harini Kethar, Linnea Gilbertson Grade 8 Effects of background music on short-term memory

528 Sarah E Betts Grade 7 An Exercise Therapy Program and Hand Device Invented To Benefit Osteoarthritic Patients

530 Iris Holman Grade 8 How Pre-Exercise Nutrition Affects Workout Performance

538 Flannery M Enneking-Norton Grade 7 Got Speed?

542 Carson L Knoer Grade 8 Which Biodegradable Material Gives Off The Most Biogas?

Project Medalist

6th Grade Project Medalist

6038 Avni Jain Grade 6 Utilization of Parabolic Reflectors to enhance energy generation through the power of Solar and Thermoelectric

6049 Toby Sullivan Grade 6 Designing for Disaster: Which Tsunami Barrier is Best?

6055 Nicholas R Martinez Grade 6 Medication Mayhem

6034 Hannah Norman Grade 6 Which Blade Design on a Wind Turbine Will Produce the Most Energy?

6047 Abigail L Reeder Grade 6 There is a pH for That

6052 Luke Kolar Grade 6 Ouch! Why Redheads are Tougher Than Blondes and Brunettes

6007 Andje T Post Grade 6 How Does Color Affect Taste?

6072 Glenn D Rorer, Jameson Stahl Grade 6 How Do Different Shotgun Choke Tubes Affect the Pattern of the Lead Pellets?

6013	Julia Camacho	Grade 6	The Effects of Boiling On The Loss of Vitamin C in Vegetables
6042	Callan Happe	Grade 6	Sound Insulation: Which Material Is Best?
6029	Claire Will	Grade 6	The Best Way to Relieve Heartburn
6051	Ella R Kester	Grade 6	How does the type of flour,when mixed with water,affect how much the mixture spreads out?

3M Renewable Energy Award

plaque and \$100.

High School - 3M Renewable Energy

1070	Serena Jing, Michelle Mao	Grade 9	Wind Turbine Design Optimization for Maximum Power
1087	Peter J Metzger	Grade 11	Improving Organic Solar Cell Materials by Characterizing Fundamental Physics in PtOEP

Middle School - 3M Renewable Energy

6038	Avni Jain	Grade 6	Utilization of Parabolic Reflectors to enhance energy generation through the power of Solar and Thermoelectric
8052	Sovigne P Gardner	Grade 8	Dye-sensitized Solar Cells: Is there a correlation between acidity & anthocyanin effectiveness?
8076	Mark A Leinberger	Grade 8	The Effects of Temperature on Solar Cell Productivity

3M Inventors Award

Invitation to a 3M Inventors event.

7101	Sarah E Betts	Grade 7	An Exercise Therapy Program and Hand Device Invented To Benefit Osteoarthritic Patients
7079	Paislee ann Olson- Bengry	Grade 7	Flame Resistant PJs
7067	Forrest Clay Ahrens	Grade 7	How does the air pressure in a soccer affect the distance the ball travels when kicked?
8061	Jack A Swartz	Grade 8	The Way Airplanes Fly
1077	Jason J Sylvestre	Grade 11	Engineering VoltX, A Multifunctional Teleoperated Rescue Robot
1079	Lauren R Warmka	Grade 10	Retrofitting Structures to Withstand Seismic Waves

Teacher Excellence Award

Brian Stock, Blessed Trinity Catholic School

American Chemical Society

- Certificate & \$50 cash

1050	Claire M Simpson	Grade 11	Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change
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American Chemical Society

- Certificate

- 1044 Matthew R McMillan Grade 11 Engineering a polyelectrolyte-based film with a novel carbon nanotube base layer
- 1033 Priyanka R Narayan Grade 11 Improving the Oral Absorption of Chemotherapeutic Drugs Through the Use of Novel Nanoparticles

American Meteorological Society Award

Certificates for outstanding achievements in Meteorological Science

American Meteorological Society Grand Award

Radio and certificate for outstanding achievements in meteorological science

- 1057 Kevin Barry Grade 12 The Effect of Water on the Temperature of Land
- 1050 Claire M Simpson Grade 11 Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change

Twin Cities

- 1101 Kayla M Kruse Grade 10 Are Diatoms Affected by Acid Rain and Global Warming?
- 8088 Jake T Yocum Grade 8 Wind Vs. Solar

Western Suburbs

- 1057 Kevin Barry Grade 12 The Effect of Water on the Temperature of Land
- 1050 Claire M Simpson Grade 11 Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change
- 8083 Annie G Plunkett Grade 8 The Greenhouse Effect: And How It's Changing Our Lives

St. Paul

- 8067 Abigail J Clapp Grade 8 Temperature and Greenhouse Gases
- 7095 Abigail R Moseman Grade 7 The Carbon Dioxide Effect

American Psychological Association Award

Certificate

Twin Cities

- 1027 Nathaniel G Treimer Grade 12 A Scientific Analysis of the Effects of Auditory Performance Feedback on Motor Skill Refinement

Western Suburbs

- 1013 Nirupa Galagedera Grade 12 Nice Ride Expansion and Physical Activity

St. Paul

- 1032 Kao Soua Yang Grade 10 Gender on Memory Recall

ASM International Materials Education Foundation Award

Certificate & medallion (In the mail) recognizing the best materials engineering project

Twin Cities

1066 Max Ylitalo Grade 9 Food or Fuel? Can Arrowroot or Cassava Replace Corn in the Production of Ethanol?

Western Suburbs

1141 David Grzan Grade 12 Effects of Cathode Shielding Methods in an Inertial Electrostatic Confinement Fusion Reactor

St. Paul

1062 Nou Cheng Lee Grade 11 How Does the Angle of Attack Affect the Amount of Lift and Drag?

Association of Women Geoscientists

Certificate to female whose project exemplifies high standards of innovativeness and scientific excellence in geosciences

Twin Cities

1096 Sydney L Botz Grade 10 Comparison between the Decomposition Rate of Compost in a Windrow Pile and an Original Design

Western Suburbs

7086 Lauren M Copland Grade 7 Go With The Flow, Darcy's Law and Hazardous Waste

St. Paul

8067 Abigail J Clapp Grade 8 Temperature and Greenhouse Gases

Bright Future Award

Certificate & gift to 6th grade excellent student - given by national winner Carolyn Jons

6042 Callan Happe Grade 6 Sound Insulation: Which Material Is Best?

East Side Science Club Alumni Award

Medals are presented to outstanding youths that demonstrate innovation and creativeness in project development

6030	Joseph A Enzler	Grade 6	What Works Best For Insulation?
6044	Thomas R Etter	Grade 6	Shoreline Erosion
6061	Katia I Tesarczyk	Grade 6	Do String Players have longer left-hand fingers?
6009	Elise Pearson	Grade 6	Girls vs Boys; Who Has Better Dexterity?
7013	Josie Marie LaBonne	Grade 7	Memory differences for boys and girls
7011	Katie Kelzenberg	Grade 7	What Age Group Smiles Back at Me the Most?
7001	Sophia R Clark	Grade 7	Mississippi Mussel Movement
7078	Megan K Meyer	Grade 7	Which Fabric Will Keep You the Warmest
8068	Ice Demmings	Grade 8	The Ice Melting Affect
8044	Jade D Waldmann	Grade 8	Chocolate vs. Chocolate vs. Chocolate
8062	Zack Bellovich	Grade 8	Cookies
8126	Sam H Swanson	Grade 8	Going the Distance with Potato Cannons

Glen & Jacob Domeier Memorial Award

In memory of Glen & Jacob Domeier, GPS & certificate, to project that best demonstrates excellence in environmental science

- 1098 Paige C Dempsey Grade 12 Characteristics that Contribute to Nest Success of Endangered Red-headed Woodpeckers (*Melanerpes erythrocephalus*)
- 7080 Nicole L Reynolds Grade 7 Effects of salt and sand runoff on fish color and activity

Glen & Jacob Domeier Memorial Honorable Mention

In memory of Glen & Jacob Domeier, \$50, certificate, Compass and use book to project that best demonstrates excellence in environmental science

- 1099 Cole M Dunlap Grade 11 Dirty Snow

Graduate Women In Science Award

University of Minnesota Graduate Women in Science: Certificate and \$25 (in the mail) for projects

Grade 6

- 6013 Julia Camacho Grade 6 The Effects of Boiling On The Loss of Vitamin C in Vegetables

Grade 7

- 7085 Caroline G Bowen Grade 7 Polluting Our Earth? Analyzing Nitrogen Levels in Fertilizer Runoff

Grade 8

- 8128 Mackenzie F Zenk Grade 8 Supercooling Water: Can Different Types of Water Remain Liquid Below Their Natural Freezing Points?

Grade 9

- 1063 Marya A Redmond Grade 9 Straw Bridge Construction

Grade 10

- 1018 Tess M Mueske Grade 10 Perceptions of Organic Food

Grade 11

- 1033 Priyanka R Narayan Grade 11 Improving the Oral Absorption of Chemotherapeutic Drugs Through the Use of Novel Nanoparticles

Grade 12

- 1013 Nirupa Galagedera Grade 12 Nice Ride Expansion and Physical Activity

Graduate Women In Science Award

University of Minnesota Graduate Women in Science: Certificate and \$25 (in the mail) for research papers

Grade 6

529 Grace M Zenzen Grade 6 The Power of Thought

Grade 7

507 Lauren E Mendoza Grade 7 Soil: Dig it!

Grade 8

535 McKenna A Knapp Grade 8 Is The Airport Floor Safe?

Grade 9

104 Carolyn K Jons Grade 9 A New Innovation in Food Preservation

Grade 10

164 Tessa G Nania Grade 10 The Smell of Short-term Memory

Grade 11

192 Sanjana Srivastava Grade 11 Identifying Executive Functioning Deficits From Gameplay Behavior Using Machine Learning

Grade 12

210 Jenny Lai Grade 12 Development of an ELISA Prototype to Detect the Presence of Novel Peptide TUF1 in Serum and Its Role in Stress Management

Hamline Circle K Club

-certificate & bag

8070 Grace L Gardner Grade 8 Oil Spills: Taking Oil Out of Water

6073 Olivia R Zindren Grade 6 Hidden Harmonics

6051 Ella R Kester Grade 6 How does the type of flour,when mixed with water,affect how much the mixture spreads out?

Integrated Approach to Science

\$50 cash, certificate, and book

High School

1024 Sanjana Srivastava Grade 11 Identifying Executive Functioning Deficits From Gameplay Behavior Using Machine Learning

1097 Alicia Bruce Grade 9 Affects Of A Hot Dry Summer On The Minnehaha Creek

Middle School

8094 Iris Holman Grade 8 How Pre-Exercise Nutrition Affects Workout Performance

8010 Harini Kethar, Linnea Gilbertson Grade 8 Effects of background music on short-term memory

ISWEEEP Finalists, May 8-13, 2013 in Houston, TX

These projects bypass the prequalification round of ISWEEEP.

- | | | | |
|------|----------------------|----------|---|
| 1066 | Max Ylitalo | Grade 9 | Food or Fuel? Can Arrowroot or Cassava Replace Corn in the Production of Ethanol? |
| 1077 | Jason J
Sylvestre | Grade 11 | Engineering VoltX, A Multifunctional Teleoperated Rescue Robot |
| 1092 | Elliott C Weiler | Grade 11 | Origins of Life: Engineering a Biosphere to Study Phospholipid Self-assembly |

Joel Wagner Caring Bridge Award

Trophy & \$50 to the best cancer research project

- | | | | |
|------|--------------------|----------|--|
| 1035 | Greer E
Bingham | Grade 12 | Starving Cancer: A study of glutamine dependency in cancer cells |
|------|--------------------|----------|--|

Killeen Memorial Award

Trophy to the student who best shows inspiration for their project

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|------|----------------|---------|---------|
| 8062 | Zack Bellovich | Grade 8 | Cookies |
|------|----------------|---------|---------|

MARS CON

NASA bag, a chance to display project at Marscon, 2 complementary passes to Marscon convention

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|------|----------------------|----------|--|
| 1077 | Jason J
Sylvestre | Grade 11 | Engineering VoltX, A Multifunctional Teleoperated Rescue Robot |
| 1041 | Gina S Jostes | Grade 9 | Gummybears vs. the force of gravity - How much can an adhesive hold? |
| 1141 | David Grzan | Grade 12 | Effects of Cathode Shielding Methods in an Inertial Electrostatic Confinement Fusion Reactor |

Minnesota Academy of Science Research Inquiry Award

Student: Certificate, MP3 player, Brain Teaser, & 1 Year Membership to Minnesota Academy of Science;
Mentor: Certificate, Teacher Kit, MAS Coffee Cup, & 1 Year Membership Minnesota Academy of Science

Senior High

- | | | | |
|------|---------------|----------|-----------------------------|
| 1018 | Tess M Mueske | Grade 10 | Perceptions of Organic Food |
|------|---------------|----------|-----------------------------|

Minnesota Agriculture in the Classroom

Certificate & \$75 check in the mail

Project Senior High

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|------|----------------|---------|---|
| 1066 | Max
Ylitalo | Grade 9 | Food or Fuel? Can Arrowroot or Cassava Replace Corn in the Production of Ethanol? |
|------|----------------|---------|---|

Project Junior High

- | | | | |
|------|------------------|---------|--|
| 8077 | Michael J Munson | Grade 8 | Water Conservation through Irrigation Efficiency |
|------|------------------|---------|--|

Paper Senior High

104 Carolyn K Jons Grade 9 A New Innovation in Food Preservation

Paper Junior High

507 Lauren E Mendoza Grade 7 Soil: Dig it!

Minnesota Astronomical Society

- certificate & prize packet

7096 Florencia I Padilla Grade 7 How does the Earth tilt affect the Seasons?

7136 Arturo T di Girolamo Grade 7 How Does Location Affect Skyglow

8115 Mira E Kammueler Grade 8 What percentage of stars have visible transits?

Minnesota Chapter of American Fisheries Society

Senior High

- Fishing Equipment

1001 Darby J Lofthus Grade 10 The Effects of Exercise on Respiration Rate, Body Mass, and Swimming Patterns of Carassius auratus at Two Different Elevations

Junior High

- Fishing equipment

7001 Sophia R Clark Grade 7 Mississippi Mussel Movement

Minnesota Space Frontier Society Award

- certificate & prize packet

6065 Latron D. Hunter Jr., Trayvon D. Hodges Grade 6 Rocking Rockets

7061 Micah T. Brands Grade 7 Shaping Parachute Future

7139 Walter J. Medcraft Grade 7 Rockets

7142 Noah Y Solomon Grade 7 Cutting Through Air

8130 Andrew C Hienz, Spencer M Weiss, Matthew J Nyberg Grade 8 Near Space, The Final Frontier

1067 Ben W Andrews Grade 10 How Far does Shockey Shoot?

1139 Zach L Donahue Grade 11 Engineering an Inexpensive Mobile Hub to Track Changes in Stratospheric Pollution

8061 Jack A Swartz Grade 8 The Way Airplanes Fly

Mu Alpha Theta Award

- Certificate for the project demonstrating the most challenging, original, thorough, and creative investigation of a problem involving mathematics

Twin Cities

1031 Riley J Wedan Grade 10 The Hidden Intelligence of Crowds

Western Suburbs

1050 Claire M Simpson Grade 11 Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change

St. Paul

1107 James C Earl Grade 12 Infinite Minesweeper Arrays With Constant Value

National Society of Professional Engineers - Innovative Engineering Award

- Certificate & lapel pin & chance for \$1000 (national) to the most outstanding innovative engineering project

Twin Cities

1081 Connor V Duffy Grade 12 Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels

Western Suburbs

1084 Carolyn K Jons Grade 9 A New Innovation in Food Preservation

St. Paul

1070 Serena Jing, Michelle Mao Grade 9 Wind Turbine Design Optimization for Maximum Power

National Oceanic and Atmospheric Administration (NOAA) "Taking the Pulse of the Planet"

- Certificate & medallion

Twin Cities

7060 Sophie N Oubaha Grade 7 How much of the chemicals that are put in the ground end up in the aquifer?

Western Suburbs

1083 Felicia Y Hamann Grade 12 Water Extractor

St. Paul

8070 Grace L Gardner Grade 8 Oil Spills: Taking Oil Out of Water

Outstanding Volunteerism Award (Nokomis Club) - 2013 for their plaque and many, many, many thanks for their hard work!

Penny Lohman Memorial Award

Grand award \$50

8102 Ashley M Cordero Grade 8 Cinnamon, The Eliminator?

Memorial Awards in Microbiology, Earth & Space Science, & Medicine &

Health

1135	Janet A Peralta	Grade 11	Honey and Bacterial Zone of Inhibition
6030	Joseph A Enzler	Grade 6	What Works Best For Insulation?
1057	Kevin Barry	Grade 12	The Effect of Water on the Temperature of Land
8097	Geetanjali Rajamani	Grade 8	Comparison of Different Sweeteners in Terms of Influence on Blood Glucose Response and Taste
1114	Kira G Hinz	Grade 12	Killer Carbs: Effects of 50% Dextrose Treatment on Postnatal Hypoglycemia Rats

Radio City Award

- Awarded to Best Amateur Radio project

6039	Jamin L Mittal	Grade 6	AM Radio Transmitter Antenna
1055	Aceif J Oubaha	Grade 9	The effect of parabolic reflectors on the signal strength of a wireless internet connection
1076	Kristofer T Robison	Grade 9	Building a Crystal Radio
7109	N'jallah V Kelleh	Grade 7	Microwave Radiation

Ricoh Sustainable Development Award

- Certificate to the project whose principles & technical innovations offer the greatest potential for increasing our ability to grow environmentally friendly & socially responsible businesses

Twin Cities

8076	Mark A Leinberger	Grade 8	The Effects of Temperature on Solar Cell Productivity
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Western Suburbs

7082	Ava M Stende	Grade 7	Green Roofs verses Tar Roofs: "Which is better?"
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St. Paul

8070	Grace L Gardner	Grade 8	Oil Spills: Taking Oil Out of Water
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Society for In Vitro Biology

- Certificate to the most outstanding 11th grade student in the area of plant or animal in vitro biology or tissue culture

Twin Cities

1151	Aditi Das	Grade 11	Building New Agrobacterium Strains for High Efficiency Transformation of Plants
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Western Suburbs

1033	Priyanka R Narayan	Grade 11	Improving the Oral Absorption of Chemotherapeutic Drugs Through the Use of Novel Nanoparticles
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St. Paul

1135 Janet A Peralta Grade 11 Honey and Bacterial Zone of Inhibition

Stockholm Junior Water Prize (SJWP)

- Certificate & eligible to enter the state SJWP competition by submitting their research paper

Twin Cities

1090 Suraj H Shah Grade 10 Engineering a Cost-Effective, Portable Syringe Pressure-Based Water Filter Using a Hollow Fiber Membrane from 3M Water Purification Inc.

Western Suburbs

1083 Felicia Y Hamann Grade 12 Water Extractor

St. Paul

1095 Jupiter Adams-Phipps Grade 10 The Importance of pH Measurements and Water Quality

Students Achieving Volunteering Excellence (SAVE)

- Certificate & \$25 cash to students whose display best communicated their experiment

Grade 6

6014 Kristiana Adams Grade 6 Sticky Stuff

6020 Grace Knoer Grade 6 Which sugar/yeast combination gives off the most carbon dioxide?

Grade 7

7001 Sophia R Clark Grade 7 Mississippi Mussel Movement

7003 Grace T Ryan Grade 7 Ant Barriers

Grade 8

8102 Ashley M Cordero Grade 8 Cinnamon, The Eliminator?

8080 Elizabeth V Ott Grade 8 Compact Compost

Twin Cities Regional Science Fair Excellence Award

- Science Kit or Game

1081 Connor V Duffy Grade 12 Enhanced Drug Delivery via PEG-crosslinked Mucin Hydrogels

1144 Merrick Pierson Smela Grade 10 Modeling the exit velocity of a compressed air cannon

8099 Maggie R Sullivan Grade 8 Pilobolus: Is Precision Driven by Colored Light

6069 Eric G Lagos Grade 6 The Effect of Ball Pressure on Shot Quality

6061 Katia I Tesarczyk Grade 6 Do String Players have longer left-hand fingers?

1078 Andrew D Wade Grade 12 Engineering a Solar Powered Cooler, Year 2

1099 Cole M Dunlap Grade 11 Dirty Snow

1016 Teslin R Maertz Grade 9 Monty Hall Paradox

1043 Nicki Lyons Grade 10 I'm a Bad Bleach

1041	Gina S Jostes	Grade 9	Gummybears vs. the force of gravity - How much can an adhesive hold?
6009	Elise Pearson	Grade 6	Girls vs Boys; Who Has Better Dexterity?
6040	Henry Kelzenberg	Grade 6	Which Bridge Design is the Strongest?
6044	Thomas R Etter	Grade 6	Shoreline Erosion
6062	Catherine G Kerin	Grade 6	What Hockey Pads Have the Most Bacteria
7002	Sam M Doyle	Grade 7	Cricket Critics
8062	Zack Bellovich	Grade 8	Cookies
1017	Kevin Z Mason	Grade 11	Detection of a lie
8106	Colin M Bergthold	Grade 8	Organic Batteries
8078	Tim J Ollmann	Grade 8	Fishing for Sound
8033	Stephanie V R Roberts	Grade 8	Which Type Of Exterior Paint Base Best Protects Metal From Rust
8031	Sigurd C. Ostlie-Olson	Grade 8	Fire Vs. Fabric a Tale of Resiastance
7101	Sarah E Betts	Grade 7	An Exercise Therapy Program and Hand Device Invented To Benefit Osteoarthritic Patients
7135	Keith Calvin-Stokes	Grade 7	Aerodynamics: The Answer Flows in the Wind
7089	Nikki Graves	Grade 7	What's That Green Stuff?
7057	Collin TE Knorr-Wegener	Grade 7	The Importance of CPU Cooling
7036	Erin M Boehme	Grade 7	Let the Flames Begin!
7003	Grace T Ryan	Grade 7	Ant Barriers
6067	Haley C Jostes	Grade 6	How to create the perfect spin
6058	Celia J Olson	Grade 6	The Effect of 5-Hour Energy on Heart Rate and Blood Pressure

United States Air Force Awards

- Certificate, computer backpack, charging stand, & flash jotter bundle

Twin Cities

1073	Theodore E Ko	Grade 10	The Effect of Surface Area Touching on Resistance in Copper Wires
1085	Kevin J Kucera	Grade 10	Correlation between Thermal Resistance and Noise Cancelation
1090	Suraj H Shah	Grade 10	Engineering a Cost-Effective, Portable Syringe Pressure-Based Water Filter Using a Hollow Fiber Membrane from 3M Water Purification Inc.
1138	Ben T Davidson	Grade 10	Effect of Temperature on Spin
8064	Duncan Ince	Grade 8	To Pad Or Not To Pad - How To Survive Another Whack To The Head?

Western Suburbs

1012	Abby Erdmann	Grade 12	Stop: A Study of Distracted Driving Behaviors in the Vicinity of Breck School
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8125	Conrad J Stenglein	Grade 8	Projectile Motion
8119	Giles D Koski	Grade 8	Power of Magnetism

St. Paul

8112	Molly E Johnson	Grade 8	Can Sound Waves Be Used To Measure The Pitch Speed of a Softball?
8063	Denasia A Hamilton	Grade 8	Heat Resistant Shield
1107	James C Earl	Grade 12	Infinite Minesweeper Arrays With Constant Value
1062	Nou Cheng Lee	Grade 11	How Does the Angle of Attack Affect the Amount of Lift and Drag?

United States Army Awards

Best Project

- Certificate, bronze medallion

Twin Cities

1017	Kevin Z Mason	Grade 11	Detection of a lie
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Western Suburbs

1057	Kevin Barry	Grade 12	The Effect of Water on the Temperature of Land
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St. Paul

1099	Cole M Dunlap	Grade 11	Dirty Snow
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Commended Award

- Certificate

Twin Cities

1078	Andrew D Wade	Grade 12	Engineering a Solar Powered Cooler, Year 2
1016	Teslin R Maertz	Grade 9	Monty Hall Paradox
1041	Gina S Jostes	Grade 9	Gummybears vs. the force of gravity - How much can an adhesive hold?
1119	Ahmed A Mohamed	Grade 10	Effects of Anxiety on Memory

Western Suburbs

1114	Kira G Hinz	Grade 12	Killer Carbs: Effects of 50% Dextrose Treatment on Postnatal Hypoglycemia Rats
1098	Paige C Dempsey	Grade 12	Characteristics that Contribute to Nest Success of Endangered Red-headed Woodpeckers (<i>Melanerpes erythrocephalus</i>)
1083	Felicia Y Hamann	Grade 12	Water Extractor
1134	Bhargavi Papisetty	Grade 11	Infectivity Study of Prions Using In-Vitro Converted Y145stop in Ex-Vivo Conditions

St. Paul

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|------|---------------------------|----------|---|
| 1154 | Almarely Guerrero-Sanchez | Grade 11 | Does Color Matter? Spectrum Colors and How They Affect the Growth of a Plant. |
| 1091 | Liya Tessema, Martha Taye | Grade 11 | Detecting Genetically Modified Foods through DNA |
| 1095 | Jupiter Adams-Phipps | Grade 10 | The Importance of pH Measurements and Water Quality |

United States Department of Agricultural Research Award

- Certificate & books

Twin Cities**Western Suburbs**

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|------|---|----------|--|
| 7085 | Caroline G Bowen | Grade 7 | Polluting Our Earth? Analyzing Nitrogen Levels in Fertilizer Runoff |
| 1098 | Paige C Dempsey | Grade 12 | Characteristics that Contribute to Nest Success of Endangered Red-headed Woodpeckers (<i>Melanerpes erythrocephalus</i>) |
| 1159 | Christopher Spencer, Chaitanya Chittineni | Grade 11 | Over Expression of Osmotin for Improved Salt Resistance in Soybean |

St. Paul

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|------|------------------------|---------|---|
| 6074 | Valerie Cavender Bares | Grade 6 | Changes in leaf pigments between spring and fall |
| 8133 | Tessa B Newman-Heggie | Grade 8 | Grasses, Seeds and Salt: The Effect of Road Salt on Native Plants |

United States Department of Health and Human Services

- Certificate signed by the Surgeon General

Twin Cities

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|------|--------------------------------|----------|--|
| 1132 | Sarah Davidson, Emily Wollmuth | Grade 12 | The Effect of Human Airway Secretions on <i>Pseudomonas aeruginosa</i> |
|------|--------------------------------|----------|--|

Western Suburbs

- | | | | |
|------|-----------|----------|---|
| 1117 | Jenny Lai | Grade 12 | Development of an ELISA Prototype to Detect the Presence of Novel Peptide TUF1 in Serum and Its Role on Stress Management |
|------|-----------|----------|---|

St. Paul

- | | | | |
|------|-------------|---------|--|
| 8094 | Iris Holman | Grade 8 | How Pre-Exercise Nutrition Affects Workout Performance |
|------|-------------|---------|--|

United States Metric Association

- Certificate

Twin Cities

1132 Sarah Davidson, Emily Wollmuth Grade 12 The Effect of Human Airway Secretions on Pseudomonas aeruginosa

Western Suburbs

1059 Lilly J Hanson, Claire Q Guinta Grade 11 The Effect of Environmental Differences on the Breakdown of Polystyrene Foam

St. Paul

1135 Janet A Peralta Grade 11 Honey and Bacterial Zone of Inhibition

United States Navy and Marine Corps**High School Division**

certificate & \$50 check (in the mail)

Twin Cities

1058 Mitch R Carlson Grade 9 How Temperature Affects Magnetism

Western Suburbs

1141 David Grzan Grade 12 Effects of Cathode Shielding Methods in an Inertial Electrostatic Confinement Fusion Reactor

1056 Apurv H Shekhar Grade 11 A Topographic Pressure Equalization Approach to Facility Assignment with Capacity Constraints

St. Paul**Junior High Division**

certificate

Twin Cities

6071 Jui A Nagarkar Grade 6 Archimedes Principle: Principle of Floatation

8065 Andrew M Weigel Grade 8 Balancing water, a study of water tension

Western Suburbs

6042 Callan Happe Grade 6 Sound Insulation: Which Material Is Best?

6049 Toby Sullivan Grade 6 Designing for Disaster: Which Tsunami Barrier is Best?

8124 Hannah M Smith Grade 8 How magnets affect ferrofluid?

St. Paul

8038 Imogene J Silver Grade 8 Briggs-Rauscher (BR) Reaction

8063 Denasia A Hamilton Grade 8 Heat Resistant Shield

University of Minnesota College of Science & Engineering

- Scholarship for the summer camp "Exploring Careers in Engineering and the Physical Sciences"

1091 Liya Tessema, Grade 11 Detecting Genetically Modified Foods through DNA

Martha Taye

1079 Lauren R Warmka Grade 10 Retrofitting Structures to Withstand Seismic Waves

1050 Claire M Simpson Grade 11 Writing and applying Monte Carlo simulation software to examine aerosol nucleation—a primary contributor to climate change

Yale Science and Engineering Association, Inc.

- Certificate for an 11th grade student in computer science, engineering, physics, or chemistry

Twin Cities

1080 Katherine R Carman, Bram HL Carr Grade 11 Solar-Hydro-Powered Generator

Western Suburbs

1077 Jason J Sylvestre Grade 11 Engineering VoltX, A Multifunctional Teleoperated Rescue Robot

St. Paul

1069 Ismeal Y Hassan, Aeh B Moe Grade 11 Which Bridge Should You Truss? Strength of Bridge Trusses