

TRI-STATE SCIENCE AND ENGINEERING FAIR

Schedule of Events

Thursday, March 8, 2018

- 12:00 PM – 4:30 PM Participants set up project displays
- 4:30 PM – 5:00 PM Judges' Preview
- 5:00 PM – 5:30 PM Judges Orientation and Dinner
- 5:30 PM – 6:00 PM Category Judges Meet to Discuss Strategy for Judging Posters
- 6:00 PM – 8:00 PM Judging (Students at Displays)

Friday, March 9, 2018

- 9:00 AM – 4:00 PM Recreation, Fitness, and Wellness Center Open for Public Viewing of Projects
- 9:00 AM – 4:00 PM Public Exhibition/Field Trips to the Fair
- 4:00 PM – 6:00 PM Participants and sponsoring teachers are asked to remove projects during this time.
Any projects remaining in the RFWC after 6:00PM will be discarded.

Monday, March 12, 2018

- 6:30 PM – 7:30 PM Awards Ceremony—Performance Center, University Center East

2018 OFFICIALS

Fair Director

Allison Grabert, Director
Director
SwISTEM Resource Center
University of Southern Indiana

Assistant Fair Director

Paige Walling
SwISTEM Services Supervisor
SwISTEM Resource Center
University of Southern Indiana

Fair Set-Up

Rhonda Woolsey
Conference & Meeting Planning
University of Southern Indiana

Field Trip Coordinator

Doris Mohr
Coordinator of Mathematics
Outreach
SwISTEM Resource Center
University of Southern Indiana

Chief Judge

Mark Krahlung
Assistant Dean
Science, Engineering and
Education
University of Southern Indiana

Special Exhibit Coordinator

Dave Ellert
Coordinator of Engineering Outreach
SwISTEM Resource Center
University of Southern Indiana

Special Thanks to the Fair Sponsors and Contributors

The Tri-State Science and Engineering Fair would not be possible without the support of area individuals, businesses, foundations and schools. Special thanks to every individual listed in this program, including the students who have worked so hard to bring their projects to this fair.

Many support Tri-State Science and Engineering Fair financially while others volunteer time and services. The Tri-State Science and Engineering Fair would not be successful without each contribution. On behalf of all the students in this competition ***"Thank you!"***

We are always looking for ideas to enhance the science education experiences of area children. If you or your organization would like to help increase awareness and interest in STEM careers for a new generation of young scientists, please contact Allison Grabert (812-228-5019; agrabert@usi.edu), Director, Tri-State Science and Engineering Fair, 8600 University Boulevard, Evansville, IN 47712. Your innovative ideas and involvement are encouraged.

Sponsors

Special thanks to our sponsors for providing major financial contributions and services to assure a well-organized Tri-State Science and Engineering Fair. Their generous support demonstrates a strong commitment to education and the future of our children and communities.



Awards

CATEGORY AWARDS-JUNIOR DIVISION

Due to the large number of projects exhibited in the Junior Division, each category within the Junior Division will have the following medallions awarded:

First Place Award – Gold Medallion
Second Place Award – Silver Medallion
Third Place Award – Bronze Medallion

SENIOR DIVISION GRAND AWARDS AND HONORABLE MENTIONS

Three Senior Division Grand Award winners will receive trophies along with an Apple iPad Pro.

Seven Senior Division Honorable Mention Award winners will receive trophies and \$100.00.

The three Senior Division Grand Award winners and the seven Senior Division Honorable Mention Award winners, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. These ten students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held on Saturday, March 24, 2018 at The Center in Indianapolis, Indiana.

In addition, SEFI sponsors a Hoosier Delegation to participate in the International Science and Engineering Fair (ISEF) to be held on May 13-18, 2018 in Pittsburgh, PA. The top ten Senior Division winners (Grand Award winners and Honorable Mention Award winners) have an opportunity to compete for Hoosier Delegation positions at the Hoosier Science and Engineering Fair. Travel and housing for all ISEF participants included in the Hoosier Delegation are provided by SEFI.

Up to three Senior Division students in the 12th grade will also receive one-year, non-renewable \$1500 scholarships to major in a science discipline, mathematics, engineering, or exercise science at the University of Southern Indiana.

JUNIOR GRAND AWARDS AND HONORABLE MENTIONS

Three Junior Grand Award winners will receive a trophy along with an Apple iPad.

Five Junior Division Honorable Mention Award winners will receive trophies and \$50.00.

The three Junior Division Grand Award winners and the five Junior Division Honorable Mention Award winners, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. These ten students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held on Saturday, March 24, 2018 at The Center in Indianapolis, Indiana.

ELEMENTARY GRAND AWARD WINNERS

Two Elementary Grand Award winners will receive a trophy along with an Apple iPad.

The two Elementary Division Grand Award winners, along with their teacher or sponsor, are invited to participate in the Hoosier State Science and Engineering Fair. These two students will represent the Tri-State Science and Engineering Fair in a competitive state judging event with additional awards and prizes. The Hoosier State Science and Engineering Fair, sponsored by the Science Education Foundation of Indiana (SEFI), will be held on Saturday, March 24, 2018 at The Center in Indianapolis, Indiana.

ALCOA FOUNDATION EXCELLENCE IN TEACHING AWARD

Teachers and adult sponsors of those projects selected for Grand Awards or Honorable Mention Grand Awards will receive a plaque and a cash award of \$50.

National Awards and Recognition Contributors

American Meteorological Society

Two Certificates of Outstanding Achievement for Excellence in Atmospheric or Related Science Exhibit

American Psychological Association

Certificate of Merit for Outstanding Research in Psychological Science

Association for Women Geoscientists

Certificate of Merit for Geoscience Excellence

ASU Walton Sustainability Solutions Initiatives

Two Certificates of Merit for Intent to Solve a Complex Problem that Involves Social Justice, Environmental and Economic Prosperity

Biophysical Society

Certificate and \$100 Award for Best Biophysics-Related Project

Broadcom MASTERS

Certificate of Merit of Outstanding Performance and Nomination to Compete as a BROADCOM Master

Intel

Intel Excellence in Computer Science Award Certificate of Merit and Monetary Award

Mu Alpha Theta

Mu Alpha Theta Award Certificate of Merit for a challenging, original, thorough, and creative investigation of a problem involving mathematics

National Aeronautics and Space Administration

Certificate of Merit for Project Offering the Greatest Insight into Earth's Interconnected Systems

National Oceanic and Atmospheric Administration

Taking the Pulse of the Planet Award Certificate of Merit

Office of Naval Research (United States Navy & Marine Corps)

Five Naval Science Junior Division Award Certificates of Merit and Two \$50.00 Senior Division Awards

Ricoh Americas Corporation

Ricoh Sustainable Development Award Certificate for research that offers the greatest potential for Sustainable Development

Society for In Vitro Biology

Certificate of Merit for Ability and Creativity in In Vitro Biology for 11th Grade Students

Stockholm Junior Water Prize

Three Stockholm Junior Water Prize Certificates of Merit for Outstanding Water-Related Research

United States Air Force

Certificate of Merit for Four Outstanding Senior Division Science and Engineering Fair Projects that offer Air Force Applicability

United States Metric Association

Certificate of Merit for the Best Use of the International System of Units in a Science Fair Project

Yale Science and Engineering Association

Certificate of Merit for Most Outstanding 11th Grade Exhibit in Computer Science, Engineering, Physics or Chemistry

Local Awards and Recognition Contributors

American Chemical Society Indiana/Kentucky Border Section

\$175 Award for Best Senior Project & Certificate of Merit

\$75 Award for Best Junior Project & Certificate of Merit

Cindy Deloney-Marino and Anthony Marino for the American Society for Microbiology (ASM)

\$25 Award for Best Junior Microbiology Project & Certificate of Merit

\$25 Award for Best Senior Microbiology Project & Certificate of Merit

Dr. and Mrs. Jonathan S. Lowrey

Two \$50 Awards for Best Projects in Biochemistry and Chemistry & Certificate of Merit

Dr. Kenneth and Nancy Parker

Kenneth E. Braun, DDS, Memorial Award

\$150 Award for Best Senior Project in Animal Science & Certificate of Merit

\$100 Award for Best Junior Project in Animal Science & Certificate of Merit

Mesker Park Zoo and Botanic Gardens

Two Behind-the-Scenes Zoo Tours for Best Junior Division Project in Animal Sciences or Plant Sciences

Two Behind-the-Scenes Zoo Tours for Best Senior Division Project in Animal Sciences or Plant Sciences

Purdue University School of Agriculture

\$50 Award for Best Senior Project in Food, Agriculture, or Natural Resources & Certificate of Merit

Certificate of Merit for Best Junior Project in Food, Agriculture, or Natural Resources

Certificate of Merit for Best Elementary Project in Food, Agriculture, or Natural Resources

University of Evansville

Scholarship for One-Half of Registration Cost to the 2018 Options for Middle School Girls & Certificate of Merit

Scholarship for One-Half of Registration Cost to the 2018 Options for Middle School Boys & Certificate of Merit

**Options is a residential (for girls) or day-camp (for boys) learning experience for girls and boys interested in careers in engineering and computer science.*

University of Southern Indiana College Achievement Program

\$50 Award for Best Senior Behavioral Science Project & Certificate of Merit

University of Southern Indiana GO STEM!

Two Scholarships to the 2018 GO STEM! Summer Camp for Girls & Certificate of Merit

**GO STEM! is a five-day residential learning experience for high school girls interested in STEM careers.*

**University of Southern Indiana Pott College of Science, Education, and
Engineering**

Up to Three One Year, Non-Renewable \$1500 Scholarship for Students Majoring in Science, Engineering, Math, or Kinesiology at the University of Southern Indiana.

Volunteer Judges*

Special thanks to our generous volunteer judges for sharing their time and expertise with the Tri-State Science and Engineering Fair exhibitors!

Mr. Juzar Ahmed
Miss Jamie Allen
Dr. James Bandoli
Ms. Lisa Bartley
Mr. Eric Beck
Mr. Keith Carter
Dr. Alex Champagne
Ms. Allison Chew
Miss Jenna Dore
Ms. Dana Duke
Dr. Brandon Field
Mr. Zachary Fuller
Ms. Ashley Gillard
Dr. Steve Glueckert
Mr. Ryan Grossman
Dr. Darla Grossman
Mr. William Groves
Dr. Will Hawkins

Miss Madison Hays
Dr. Priya Hewavitharanage
Dr. Rick Hudson
Dr. Darlene Ingram
Ms. Kathleen Irwin
Dr. Peter Johnson
Mrs. Jennifer Kissel
Miss Tereza Kostova
Dr. Mark Krahling
Dr. Paul Kuban
Miss Cristina Laughlin
Dr. Jonathan Lowrey
Mrs. Leisa Lowrey
Ms. Karen Malone
Dr. Matthew Merlo
Mr. Benjamin Nathan
Mr. Jim Price
Dr. Kenneth Parker

Mr. Jeff Polak
Dr. Kenneth Purcell
Mr. Jonah Quirk
Mrs. Elizabeth Ramos
Ms. Jacob Rexing
Dr. Erin Reynolds
Mr. Ryan Richardson
Dr. Kelly Sparks
Dr. Scott Taylor
Ms. Lori Threlkeld
Ms. Carrie Ullmer
Mr. Dave Voegel
Miss Alexis Walser
Dr. Alyssa Weatherholt
Dr. Bryan Woosley
Ms. Rachel Wright
Ms. Megan Wright

*Judges registered at time of print.

Participating Teachers/Adult Sponsors

*Special thanks to Tri-State educators and parents
for serving as mentors to area students.*

Keely Burkhart	Marrs Elementary School, Mount Vernon, IN
Stacy Burkhart	Helfrich Park Middle School, Evansville, IN
Patrick Carter	New Tech Institute, Evansville, IN
Valerie Cissna	Thompkins Middle School, Evansville, IN
Thomas Dahlquist	Castle High School, Newburgh, IN
Ashlee Deal	Helfrich Park Middle School, Evansville, IN
Radhika Dhawan	Signature School Inc, Evansville, IN
Mindy Dillow	Helfrich Park Middle School, Evansville, IN
Katie Dossett	Heritage Hills Middle School, Evansville, IN
Ed Fancher	Tri-State Region Home Schools, Georgetown, IN
Elizabeth Forche	Thompkins Middle School, Evansville, IN
Shannon Hart	Castle South Middle School, Newburgh, IN
Tracey Hayden	Signature School Inc, Evansville, IN
Maura Humphrey	Castle North Middle School, Newburgh, IN
Sara Killebrew	Castle North Middle School, Newburgh, IN
Lisa Koester	Tri-State Region Home Schools, Wadesville, IN
Jenna Luecke	Holy Rosary School, Evansville, IN
Katie Meyer	Castle South Middle School, Newburgh, IN
Matt Nance	Signature School Inc, Evansville, IN
Ashley Nanninga	Castle North Middle School, Newburgh, IN
Paul Perry	Castle North Middle School, Newburgh, IN
Elisa Peters	Heritage Hills High School, Lincoln City, IN
Alison Rohde	South Spencer High School, Rockport, IN
Iata Shukla	Signature School Inc, Evansville, IN
Pamela Swader	Heritage Hills Middle School, Lincoln City, IN
Tim Teel	North Elementary School, Poseyville, IN
Susan Tucker	Mount Vernon Jr High School, Mount Vernon, IN
Robbie Waites	Mater Dei High School, Evansville, IN
Paige Walling	West Terrace Elementary School, Evansville, IN
Josh Wetzel	Heritage Hills Middle School, Lincoln City, IN
Amy Whetstone	Evansville Day School, Evansville, IN
Karen Wiseman	Plaza Park Middle School, Evansville, IN
Megan Wright	Helfrich Park Middle School, Evansville, IN

SENIOR DIVISION

PLEASE NOTE: Student Names and Project Titles are presented in the program as submitted by the students on their online registration forms.

SR201	Jade Yeager	<i>Preservative Properties of Western European Bog Components</i>
SR202	Nicholas Carter	<i>Fundamentals of a Cathode Ray Tube</i>
SR203	Ankush Dhawan	<i>An Improved Method for Trace Level Arsenic Quantification in Water</i>
SR204	Anne Rowe	<i>Effects of UV on Drosophila Life Expectancy</i>
SR205	Brooklyn Lee	<i>A Comprehensive Overview of Affects of Free Glutamates on Embryonic Zebra Danio</i>
SR206	Corrie Burroughs	<i>Fractalization of Navier-Stokes Equation and other Applications</i>
SR207	Derek Mitchell	<i>Surveying Water Quality Through Macroinvertebrates</i>
SR208	Haley Smock	<i>5 Second Rule</i>
SR209	Hannah Blake	<i>The Effect of Silver Nanoparticles Versus Antimicrobials on Bacterial Sensitivity</i>
SR210	Lillian Kolley & Lilly Vance	<i>The Effect of Various Pesticides on Plant Cell Division</i>
SR211	Rachel Winner	<i>Effect of Age of Antibiotic on Sensitivity of Bacteria</i>
SR212	Ella Paeth	<i>One Enzyme, Two Jobs: Ethanol's Impact on Catalase's Ability to Breakdown Hydrogen Peroxide</i>
SR213	Zebulon Etienne	<i>Feeling the Beat</i>
SR214	Akshaj Mishra	<i>Synthesis and analysis of acetylsalicylic acid using natural ingredients and its effect on growth and immunity of Vigna radiata seeds and Drosophila melanogaster insects</i>
SR215	Adrian Rashada	<i>Computational Exploration of Protein Function Using Myoglobin as a Model</i>
SR216	Audrey Walters	<i>Early Signs of Depression Based on Biometrics</i>
SR217	Beatrice DiRienzo	<i>Additives and Evergreens</i>
SR218	Christopher Basham	<i>Oblivion Optimization Algorithms</i>
SR219	Eli Fenwick	<i>The Great American Eclipse and Weather</i>
SR220	Evan Rodocker	<i>Is it Realistic</i>
SR221	Halle Chambers	<i>Remember to remember</i>
SR222	Hannah Riley & Corey Martin	<i>Thermal Imagery</i>
SR223	Hannah Prow	<i>Concentration and Music</i>
SR224	Josh Brown	<i>Buttered Toast Phenomenon</i>
SR225	Kaelin Holm	<i>Fire Fighting Robot</i>
SR226	Kaleb Josey	<i>Effect of radiation on plant growth/development</i>
SR227	Kearston Hicks	<i>Running Dry</i>
SR228	Logan Hutchinson	<i>Electrical Field of the Triboelectric Series</i>
SR229	Luke Bryant	<i>Electrolysis of Electrolytes</i>
SR230	Luke Freeman	<i>Does Peppermint Improve Reaction Times?</i>
SR231	Lynnea Klemczewski	<i>Do Musical Genres Have Different Biometric Effects?</i>
SR232	Mackenzie Hunt	<i>Can a Device Decrease Spinal Hypermobility Symptoms</i>
SR233	Michael Cooper	<i>This Little Light of mine</i>
SR234	Molly Collins	<i>Blood Sugar and Exercise</i>
SR235	Peyton Conner & Joshua Bowles	<i>2017 Solar Eclipse Light Intensity</i>
SR236	Richard Ottway	<i>Levitating Our Way Into The Future</i>

SR237	Sid Sullivan	<i>2017 Solar Eclipse</i>
SR238	Thomas DiRienzo	<i>Liquid Fuel Rocketry</i>
SR239	Travis Lowe	<i>Which Sorting Algorithm is the Fastest</i>
SR240	Vidit Patel	<i>Evansville's Water: Safe or Contaminated</i>
SR241	Braeden Fitzsimmons	<i>Sparks or Not</i>
SR242	Nikhitha Lavu	<i>How the Hematopoietic System Affects Bone Metabolism</i>

JUNIOR DIVISION

PLEASE NOTE: Student Names and Project Titles are presented in the program as submitted by the students on their online registration forms.

AS Junior Division – Animal Sciences

AS101	Elena Boughton	<i>Bugs or Thermometers?</i>
AS102	Ella Robinson & Amelia Seifert	<i>Dogs and Colored Water</i>
AS103	Eric M Yates	<i>Rusty Stead</i>
AS104	Kaden L Wagner	<i>Discovering Dogs: Color Preference</i>
AS105	Kaitlyn Kahle	<i>The Effect of Litter Size on Puppy Temperature</i>
AS106	Liam Stone & Colin Schipp	<i>Dog mouth vs Human mouth which has more bacteria</i>
AS107	Reagan Koester	<i>Can the Shelf Life of Frozen Hamburger Patties be Extended with Aluminum Foil?</i>
AS108	Riley E Hills & Zachary Wilson	<i>Paws For Science</i>
AS109	Roman Nester	<i>Mastering Memory</i>

CH Junior Division – Chemistry

CH101	Adam Burke	<i>How White is White?</i>
CH102	Allison Black & Angelica Lyashchuk	<i>Eggtastic Whitening</i>
CH103	Andreas Hargrave	<i>Campfire Fumes</i>
CH104	Anisha Singh	<i>Are You Getting Enough Vitamin C?</i>
CH105	Arushi Gandhi	<i>Reducing the Flammability of Paint</i>
CH106	Audrey Spurling	<i>Lip Sensations</i>
CH107	Avaen Rains & Brennan Truitt	<i>Milk To Plastic</i>
CH108	Aydan Amento & Alex West	<i>Does Salt Affect the Temperature of Water?</i>
CH109	Benjamin Doyle & Spencer Selzer	<i>The Rustening</i>
CH110	Benjamin Gollaher	<i>Milking It Up</i>
CH111	Bricelynn Shields	<i>What Ratio of Sugar to Corn Syrup Makes the Best Marshmallow?</i>
CH112	Camaro Crawford	<i>Scrub A Dub Dub</i>
CH113	Cameron Hughes	<i>Mixing Oil and Water</i>
CH114	Caroline Edris	<i>Does the Storage Temperature of Liquids Affect Their Acidity?</i>
CH115	Ciera Mardis & Hailey Kirkland	<i>Apples, Still A-peel-ing?</i>
CH116	Cole Newcomer & Kaden Gengelbach	<i>The Gummy Bear Lab</i>
CH117	Colleen Meacham	<i>Baking Soda vs Baking Powder</i>
CH118	Cooper M Kirchoff	<i>Changing Color</i>
CH119	Ellie Kissel	<i>Slime Activators</i>
CH120	Emily Johnson	<i>Freezing Point</i>
CH121	Emma Day	<i>Flammable Fabrics</i>
CH122	Everett G Legate	<i>Does the amount of water affect how fast it freezes</i>
CH123	Garrent Herring, Santiago Arruffat, & D. Heneisen	<i>Densities of Water</i>

CH124	Gwyn Traylor	<i>How much Baking Powder do Quick Breads Need?</i>
CH125	Hannah Seifert & Olivia Redman	<i>Super Toother</i>
CH126	Hunter C Gehlhausen	<i>Dissolving Gummy Bears</i>
CH127	Jason Pillow	<i>Marker Comparison-Store or Name Brand?</i>
CH128	Katelynn Vazquez-Harris	<i>Yellow Teeth Not Anymore</i>
CH129	Kayley Seto	<i>Chemical Reaction:Creating Gas</i>
CH130	Keira Gengelbach & Kaelyn Watson	<i>How do sugar crystals form?</i>
CH131	Lillian Zausch	<i>Cookies: Do the Sheets Matter?"</i>
CH132	Logan Gallagher	<i>Freezing Point Depression: Which Does it Best?</i>
CH133	Madison Horton & Haley Karges	<i>The Ultimate Deal On Hair Dye</i>
CH134	Makenna Bryant	<i>Diaper Duels</i>
CH135	Meera Bhatia	<i>Ocean Acidification's Impact on Calcifying Species</i>
CH136	Mia Sanford & Samantha Crosby	<i>Reaction Times</i>
CH137	Nathan Windell	<i>The Electrolysis of Water: Which Solution Splits Water Best?</i>
CH138	Owen Odney	<i>Hyper Fruits</i>
CH139	Petra Corn & Audrey Briles	<i>Hard Boiled Egg vs. Raw Egg</i>
CH140	Piper Carl	<i>Temperature vs Reaction Time</i>
CH141	Rylee Schmuck & Halie Dickinson	<i>More For Your Muffin</i>
CH142	Shelby Skelton & Haley Schnuck	<i>H2O2 Coming At You</i>
CH143	Stella DeLong	<i>Vitamin C Testing</i>
CH144	Taylor Vogt	<i>Cleaning Coins</i>
CH145	Thisara Hewavitharana	<i>Ascorbic Apples</i>

EN Junior Division – Engineering

EN101	Aiden Cates & Brayden Tasa	<i>Wheels and Friction</i>
EN102	Allyson Shiery	<i>Burning Housing Materials</i>
EN103	Ayden Johnston	<i>Bag Carrier</i>
EN104	Benjamin Rynder	<i>The Winged Warriors Experiment</i>
EN105	Blake E Herdes & Cayden McClure	<i>Which product is most Durable</i>
EN106	Brady Cato & Thomas Fox	<i>Hunting Gun Experiment</i>
EN107	Brandon Strouse	<i>Automatic pet feeder</i>
EN108	Cillian Baker-Ham	<i>Solar Cookin'</i>
EN109	Evan M Dean & Jacob Wedding	<i>Bridge Busters</i>
EN110	Gavin Kelley & Elias Ruedlinger	<i>Stress Strength</i>
EN111	Grace Kobylanski	<i>enviROnment BOT</i>
EN112	Gracie Greenlee	<i>How do you like your tea?</i>
EN113	Hannah Martin	<i>Cross That Bridge</i>
EN114	Jacob McCullough	<i>Salt Water:What is the resistance?</i>
EN115	Jaime Bustos	<i>K'nex Wheels Project</i>
EN116	Joseph D Robinson	<i>The Eco-Salt Dispenser</i>
EN117	Kalynn Payne & Natalie Vo	<i>How Much Weight Can a Prosthetic Hand Hold?</i>
EN118	Katrina M Byington	<i>Metal Wires</i>
EN119	Kodey Hausmann	<i>Stair Stepping Circuits</i>
EN120	Luke Robards	<i>Flood Zone Foundations</i>
EN121	Riley A Broshears & Boston M Steers	<i>Material With the Most Strength</i>
EN122	Ross Tempel & Brody Ficker	<i>Arm Length, Weight, and Distance Projected</i>
EN123	Yadira Onate-Ayala	<i>Water Filter</i>
EN124	Jaydan Clayton	<i>wind turbine rotors</i>

ES Junior Division – Earth and Environmental Sciences

ES101	Calvin Jorgensen	<i>Turbines in the Wind</i>
ES102	Easton King	<i>Growing Grass & Taking Names</i>
ES103	Emily Taylor	<i>Glucose Metabolism in Yeast</i>
ES104	Emma Moesner	<i>Darcy's Law</i>
ES105	Kate McAtee	<i>To Pack or not to Pack</i>
ES106	Makenna Counts	<i>Solar Panel Science: Using Reflective Surfaces to Increase the Output of a Solar Panel</i>
ES107	Olivia Polk & Kelley Smock	<i>Winter Water</i>
ES108	Paul Sellers	<i>West Side Lake Quality</i>
ES109	Quentin Boeke	<i>Do homemade water filters adjust the pH as well as store bought filters</i>
ES110	Tyler Orr	<i>Lead in the Soil</i>

MA Junior Division – Mathematics

MA101	Grace Wagoner	<i>Measuring Music</i>
MA102	Jacob Conner	<i>Magnetometer</i>
MA103	Keegan Odney	<i>Calculating the Amount of Permutations for a given Rubik's Cube</i>
MA104	Landon Meuth	<i>How Does Design Combined with Added Weight Affect A Boat's Bouyancy?</i>
MA105	Loden Greenwell & Alex Hartmann	<i>Minimal Friction</i>

MB Junior Division – Microbiology, Molecular, Cellular Biology

MB101	Angelika Elderbrook	<i>Fingerprint Problems</i>
MB102	Caymen Travis & Kaleb Egan	<i>Sugary Drinks Rot Your Teeth</i>
MB103	Emily Hayes	<i>Fallen Food Fiasco</i>
MB104	Juliana Miller	<i>Decompose Foes</i>
MB105	Lydia Bauersfeld	<i>Baby Food Safety</i>
MB106	Michael A Beaven	<i>Which Type of Bread Molds the Fastest</i>
MB107	Sarah Day	<i>Dynamic DNA</i>

ME Junior Division – Medicine and Health Sciences

ME101	Abigail Curl	<i>Family Fingerprinting Fiasco</i>
ME102	Ashton Elpers	<i>Rotten Teeth</i>
ME103	Brianna Hoffman & Tessa Gustin	<i>Sugar Sugar</i>
ME104	Elise Crecelius	<i>Is your sink as clean as you think?</i>
ME105	Emma Johnson	<i>Intravenous Catheters: The Long and Short of It</i>
ME106	Jocie Horne	<i>Race for Relief</i>
ME107	Julia Economou	<i>Heartburn Havoc</i>
ME108	Kaiden M Stewart & Alex Englert	<i>How video games affect the heart</i>
ME109	Kiersten Gogel & Liz Gehlhausen	<i>The War on Acne: Bacteriostatic vs. Bactericidal</i>
ME110	Kylie Clayton	<i>CV Disease and Prescriptions (Repatha)</i>
ME111	Madison Hettenbach	<i>Dissolve It!</i>
ME112	Naina Muvva	<i>How Does an Anticoagulant Affect Coagulation?</i>
ME113	Natalie Downs & Alizabeth Friday	<i>Antacids</i>
ME114	Nicole Payne	<i>What's in the Mind?</i>
ME115	Ryan Kelley	<i>Reaching New Heights</i>
ME116	Santosharupa Ponna	<i>Is Your House Harming You?</i>
ME117	Shums Parkar	<i>Vitamin C in Juices</i>
ME118	Sona Veeraghavan	<i>The Chemical Digestion of Protein</i>
ME119	Timothy Eubank	<i>Soda vs. Tooth Enamel</i>
ME120	Zoey Gates	<i>Density VS. Calories</i>

PA Junior Division – Physics and Astronomy

PA101	Aaron Weis & Jackson Clowers	<i>Football Madness</i>
PA102	August Hale	<i>A Forceful Impact</i>
PA103	Benjamin Kennedy & Wyatt Reed	<i>OOOOHbleck</i>
PA104	Benjamin Schott	<i>Measuring the Amount of Heat Transfer Between Four Different Metal Wires</i>
PA105	Carter Ahlstedt & Ian Long	<i>Bounce</i>
PA106	Dusten Anderson	<i>Airborne RCs</i>
PA107	Ethan Fuller	<i>Tonight Only: 3 Blade Vs. 2 Blade</i>
PA108	Jillian Tretter & Mary King	<i>Can Water Float On Water</i>
PA109	Jude Dahlquist	<i>Equipotential Lines and Faraday Cages</i>
PA110	Logan Howard	<i>Does Density Determine Durability</i>
PA111	Luke Hinshaw & Kayden Bell	<i>Science Of Shooting Hoops</i>
PA112	Michael Woehler & Gavin Muensterman	<i>Bridge Attack</i>
PA113	Nathan Foster	<i>Cool Comets on the Hot Seat</i>
PA114	Olivia Mason	<i>How to Hear</i>
PA115	Ryan Lambert	<i>Biomechanics of Pitching</i>

PC Junior Division – Energy: Physical and Chemical

PC101	Aidan Jeffries	<i>Radioactive!</i>
PC102	Alec Moor & Kodi Rickard	<i>How Fast Does Ice Melt On Different Surfaces</i>
PC103	Andrew Burklow	<i>Temper of a Battery</i>
PC104	Ava Verkamp & Dulce Contreras	<i>Why are the eggs at different levels, even though it has the same amount of water</i>
PC105	Carson Woods & Vincent Scheller	<i>Electrolyte Challenge</i>
PC106	Conner Johnson	<i>Fire and Ice</i>
PC107	Connor Herron	<i>Edison's Tears</i>
PC108	Daniel Goodrich	<i>How is Solar Panel Efficiency affected by Atmospheric Conditions?</i>
PC109	Emma Fields	<i>Eggstraordinary Parachute Project</i>
PC110	Grant Lee & Cody Plisky	<i>Battery Power</i>
PC111	Jada Floyd, Jillian Jackson, & Brianna Duncan	<i>bubble gum test</i>
PC112	Lillian Fuhrer & Kendra Givens	<i>What can block a Wi-Fi Signal?</i>
PC113	Logan Simmons	<i>Balloon Powered Car</i>
PC114	Matthew Wisnewski	<i>Basketball Bounce</i>
PC115	Melanie Buchanan	<i>Creating Electrolytes</i>
PC116	Noah Albin & Landon Gibson	<i>Reach for the Sky</i>
PC117	Olivia Walker & Ella Henry	<i>Playdough Electricity</i>
PC118	Owen Metzger	<i>Why is Asphalt Rolled?</i>
PC119	Raycee Stallings & Morgan Adler	<i>Which Cup is the Best Insulator</i>
PC120	Se'Riyah Carson & Alyssa McMurtry	<i>Up, Up, and Away</i>
PC121	Shelby Winkler	<i>Afterimages</i>
PC122	Shiv Patel & Alex Carlson	<i>Fruit Battery</i>
PC123	Terrance Joyce	<i>Parabola Power</i>

PS Junior Division – Plant Sciences

PS101	Alayna Lautner	<i>Supplements for Plant Growth</i>
PS102	Ansley N Hopper & Evelyn Lovell	<i>Plant Growth Project</i>
PS103	Arianna Rountree	<i>Is Water Better?</i>
PS104	Ayden Lewis-Navarrete & Miles Reshete	<i>Peculiar Peppers</i>
PS105	Blake Sanders	<i>Hydroponics vs Soil</i>
PS106	Bridget Flannagan	<i>What Color Of Light Do Plants Like Best?</i>
PS107	Brock Babb & Hannah Wissel	<i>The Dirt on Dirt</i>
PS108	Caitleen Reyes	<i>Greenery + Soil or Fish?</i>
PS109	Holli Spaetti & Alexandra Yates	<i>Plants On Caffeine</i>
PS110	James Pullom	<i>Sugar & Spice With Roses Think Twice</i>
PS111	Jude Allaw	<i>Caffeinated Plants</i>
PS112	Olivia Woods	<i>FISH FOOD</i>

RC Junior Division – Robotics, Computers, and Systems Software

RC101	Anika Paranjape & Maya Yamaguchi	<i>Wi-Fi Kryptonite of our Generation</i>
RC102	Devin Dockery & Aaron Eaton	<i>The Power of Charge</i>
RC103	Ethan Hilton	<i>How Strong is Your Password?</i>
RC104	Landon Brown	<i>climate control alert system (ccas)</i>
RC105	Mason Hanna & Duell LaMar	<i>Which is Fastest</i>
RC106	Phillip Kulikov	<i>Is a Deleted File Gone Forever?</i>

SS Junior Division – Behavioral and Social Sciences

SS101	Ammar Atia	<i>ASD or IQ?</i>
SS102	Anna Hoffmann	<i>Don't Stress This Test!</i>
SS103	Cherish Hassebrock	<i>Will changing the color of a food affect the taste?</i>
SS104	Claudia Emig & Sydney Peterson	<i>Stroop Plus</i>
SS105	Colin Lloyd & Aiden Shimodaira	<i>Brain Games</i>
SS106	Courtney Ewald	<i>Brain Battle</i>
SS107	David A Koehler & Blake Podewils	<i>FIJI WATER</i>
SS108	Farouk Allababidi	<i>Does Gender Affect Color Preference?</i>
SS109	Gracin George	<i>Memory Madness</i>
SS110	Jace P Boerner & Jacob Purdy	<i>Human Sleeping Trial</i>
SS111	Jake Bernhard	<i>The Lying Experiment</i>
SS112	Jaycie West & Madison Schaefer	<i>Can you tell if a person is lying based on their blood pressure?</i>
SS113	Jannah Atia	<i>Do Color Preferences Bias Our Choices?</i>
SS114	Keira Stofleth	<i>Stress Balls</i>
SS115	Leigha Neth & Sydney C Zellerino	<i>Does Weather Affect Mood And Behavior</i>
SS116	Leon Jiang	<i>Pavlov's Humans</i>
SS117	Levi Thomas, Jonathan Dominguez, & Cy Young	<i>Memory V Video games</i>
SS118	Olivia Mick & Grant Roos	<i>Misophonia</i>
SS119	Piper Osban & Brandi Schu	<i>Lunchroom Fiasco</i>
SS120	Shriya Naraya	<i>Now You See It, Now You Don't</i>
SS121	Stephanie Sheats	<i>Adult Memories Versus Teen Memories</i>
SS122	Sydney Madison & Evan Powell	<i>Stroop Plus</i>
SS123	Thomas Lynch & Anthony Vellis	<i>The Stroop Effect</i>

ELEMENTARY DIVISION

PLEASE NOTE: Student Names and Project Titles are presented in the program as submitted by the students on their online registration forms.

ELE001	Ashlyn Crow, Colton Funk, & Hannah Martin	<i>Video Game Players vs. Non-Video Game Players</i>
ELE002	Audrey Troth	<i>'The Cats Meow'</i>
ELE003	Brady Schickel, Sophia Starnes, & Malley Wagner	<i>Whole, Half, Quarter and Powder Tablets which reacts faster</i>
ELE004	Brayden Caldemeyer, CortLynn Dobleman, & Rylie Schelb	<i>Small Tablets or Big Tablets... Which Dissolves Faster?</i>
ELE005	Breonna Seifert, David Jones, & Ava Williams	<i>Slower or Faster?</i>
ELE006	Cameron Swader	<i>The Strength of Rocks</i>
ELE007	Charlie Emsweller, Hunter Pedrotti, & Gabriel Keller	<i>Video Game Players vs. Non-Video Game Players</i>
ELE008	David Walling	<i>Driving with Energy</i>
ELE009	Gabriel Crabtree, Julian Dickinson, & Kaylee Friedman	<i>How Can You Chill a Soda?</i>
ELE010	Isabella Zieren, Lexi Hoehn, & Drake King	<i>Which One Makes Ice Melt Faster?</i>
ELE011	John Thomason, Grace Tenbarge, & Blayke Reeley	<i>The Question of Smell and Taste</i>
ELE012	Katherine Fancher	<i>Don't Let Rust Slow You Down</i>
ELE013	Kenneth Crabtree, Sadie Seibert, & Alana Bredemeier	<i>What Type of Water Will Dissolve the Alka-Seltzer the Fastest?</i>
ELE014	Konnor Ethridge, Lexie Scott, & Lillian Preske	<i>Flavors vs. Scents</i>
ELE015	Miranda Slaton, Masyn Dye, & Grace Thornburgh	<i>Does Ice or Ice Water Chill a Soda the Fastest?</i>
ELE016	Reagan Engbers	<i>Feed More Birds with One Stone</i>
ELE017	Rylie Nurrenbern & Cassidy Jones	<i>The Reaction of Baking Soda and Vinegar on a Balloon</i>
ELE018	Trenton Herrington, Addison Chilton, & Nate Byerly	<i>Balloon Blowing Masters</i>
ELE019	Valarie Thompson, Kenzie Miller, & Michael Hile	<i>What Variables Make Ice Melt the Fastest?</i>