



Schedule of Events

Thursday, March 10, 2016

- 12:00 PM – 4:30 PM Participants set up project displays
- 4:00 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 11, 2016

- 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.**
- 6:30 PM – 7:30 PM Awards Ceremony—Mitchell Auditorium in the Health Professions Building

2016 OFFICIALS

Fair Director

Allison Grabert, Director

Director

SwISTEM Resource Center

University of Southern Indiana

Assistant Fair Director

Paige Walling

SwISTEM Circulation Assistant

SwISTEM Resource Center

University of Southern Indiana

Fair Set-Up

Phyllis Oeth

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

Each category within the Senior and Junior Divisions 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 iPad Air 2.

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 April 2, 2016 at IUPUI 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 8-13, 2016 in Phoenix, AZ. The top ten Senior Division winners (grand award winners and honorable mention 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 (3) Senior Division students in the 12th grade will also receive one-year \$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 iPad Mini 3.

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 April 2, 2016 at IUPUI in Indianapolis, Indiana.

ELEMENTARY GRAND AWARD WINNERS

Two Elementary Grand Award winners will receive a trophy along with an iPod Touch 32GB.

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 April 2, 2016 at IUPUI in Indianapolis, Indiana.

National Awards and Recognition Contributors

American Meteorological Society

Two Certificates of Merit for Outstanding Achievement for Ability and Creativity in an Atmospheric Science Exhibit

American Psychological Association

Certificate of Merit for Outstanding Research in Psychological Science

ASM Materials Education Foundation

Certificate of Merit for Most Outstanding Exhibit in Materials Science

Association for Women Geoscientists

Certificate of Merit for Geoscience Excellence

ASU Walton Sustainability Solutions Initiatives

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

Biophysical Society Award

Certificate of Merit and \$100.00 Award for Best Senior Division Biophysics-Related Project

Broadcom MASTERS

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

Genius Olympiad

Two Certificates of Merit for Projects that Display Excellent Work on the Environment

Intel Education

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 and Medallion for research demonstrating Principals and Technical Innovations that offer the greatest potential for an improved understanding of Earth's dynamic processes

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

Seven Naval Science Junior Division Award Certificates of Merit and Four \$50.00 Senior Division Awards

Ricoh Americas Corporation

Ricoh Sustainable Development Certificate of Merit for research demonstrating the Principles and Technical Innovations 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

United States Air Force

Certificate of Merit and Prize Package 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

Water Environment Federation

Three Stockholm Junior Water Prize Certificates of Merit & Possible Nominations to Enter State Competition for Excellence in a Water-Related 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 in Chemistry & Certificate of Merit

\$75 Award for Best Junior Project in Chemistry & 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

\$50 Award for Best Senior Project in Biochemistry/Chemistry & Certificate of Merit

\$50 Award for Best Junior Project in Biochemistry/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

Half-Tuition Scholarship to the 2016 Options for Middle School Girls & Certificate of Merit

Half-Tuition Scholarship to the 2016 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 2016 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 Middle School STEM Innovation Camp

Two Scholarships to the 2016 USI Middle School STEM Innovation Camp & Certificate of Merit

**During this week-long day camp at USI, middle school students will be introduced to a wide range of STEM possibilities.*

Vanderburgh County Medical Society

\$100 Award for Best Senior Project in Medicine & Certificate of Merit

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

2016 Volunteer Judges

Special thanks to our volunteer judges for making this event possible!

Joseph Acchiardo	Cindy Deloney-Marino	Tiffany Ko	Ben Nathan	Rebecca Sparks-
Shelby Adkins	Jeannine Delwiche	Mark Krahling	Sid Nathan	Thissen
Gabriela Aguilar	Roger Duke	Cristina Laughlin	Colin Neeley	Barbara Stegall
Juzar Ahmed	Dana Duke	Sevena Lewis	Brianne Neeley	Haley Strong
Zihua Ao	William Elliott	Ryan Loehrlein	Kevin Nelson	Brent Summers
Leslie Ashley	Kathleen Elliott	Jon Lowrey	Dennis Oliver	Sarah Szmuto
Jim Bandoli	Alisa Fabiano	Leisa Lowrey	Chris Osburn	Scott Taylor
Lisa Bartley	Jonathon Fulkerson	Mitch Luman	Kenneth Parker	Kristian Thomas
Karlee Barton	Stephen Glueckert	Bryan Lynch	Paul Peak	Lori Threlkeld
George Becker	Tony Goodwin	Scott Macer	Kourtney Peka	Joel Tshite
Brian Bohrer	William Groves	Tony Maria	Lindsey Peter	Carrie Ullmer
Lucas Brandt	Maxwell Haddan	Brett Mattingly	Jeffrey Polak	Dave Voegal
Matt Brindle	Kerry Hall	Jessie McKean	Jim Price	Billie Walker
Amanda Brown	Madison Hays	Bionca McMurtry	Alexandria Quinzer	Kelly Walsh
Amanda Cannon	Gregory Hemmer	Amanda Melberg	Jonah Quirk	Jessica Weir
Keith Carter	Marressa Henderson	Matthew Merlo	Elizabeth Ramos	Stacie Wenk
Laura Chamness	Rick Hudson	Lauren Meuiner	Brandon Reed	Nicholas Williams
Amy Chan-Hilton	Abigail Hughes	Zane Mitchell	Erin Reynolds	Clarissa Willis
Jessica Coleman	Darlene Ingram	Ekrem Morali	Ryan Richardson	Alan Wolfinger
Ethan Daffron	Kathleen Irwin	Amos Morris	Emily Rogers	Bryan Woosley
Erin Davenport	Ashby Johnston	Shawn Mowery	Lexis Schue	Rachel Wright
Kaitlin Dehlin	Sarah Jones	Jett Murray	Jeff Seyler	Megan Wright
Jonathan Dehlin	Roshan Kaphle	Jessica Myers	Kelly Sparks	Marissa Young

Participating Teachers/Adult Sponsors

*Special thanks to tri-state educators and parents
for serving as mentors to area students.*

Cassie Austin	South Middle School, Henderson KY
Terry Bennett	North Middle School, Henderson KY
Sherry Blosser	North Middle School, Henderson KY
Jamie Boeglin	North Middle School, Henderson KY
Keely Burkhardt	Marrs Elementary School, Mount Vernon IN
Stacy Burkhardt	Helfrich Park Middle School, Evansville IN
Merle Callahan	North Daviess Jr-Sr High School, Elnora IN
Michael Cantrell	South Middle School, Henderson KY
Patrick Carter	New Tech Institute, Evansville IN
Ashlee Deal	Helfrich Park Middle School, Evansville IN
Kerry Sensenbrenner	Castle North Middle School, Newburgh IN
Mindy Dillow	Helfrich Park Middle School, Evansville IN
Chris Fifer	North Middle School, Henderson KY
Susan Gibson	Jasper Middle School, Jasper IN
Kara Grooms	Castle North Middle School, Newburgh IN
Tracey Hayden	Signature School Inc, Evansville IN
Rebecca Humm	Helfrich Park Middle School, Evansville IN
Alex Isaacs	Heritage Hills Middle School, Lincoln City IN
Douglas Johnson	New Tech Institute, Evansville IN
Sara Killebrew	Castle North Middle School, Newburgh IN
Angela Marksberry	North Middle School, Henderson KY
Holly McCutchan	Heritage Hills High School, Lincoln City IN
Thomas Napier	South Middle School, Henderson KY
Paul Perry	Castle North Middle School, Newburgh IN
Jennifer Potter	Signature School Inc, Evansville IN
Kim Rashada	Parent Sponsor
Marilyn Rogers	North Posey Sr High School, Poseyville IN
Kathleen Schenk	Castle South Middle School, Newburgh IN
Lata Shukla	Parent Sponsor
Pamela Swader	Heritage Hills Middle School, Lincoln City IN
Kim Swan	South Middle School, Henderson KY
Tim Teel	North Elementary School, Poseyville IN
Nora Walsh	Francis Joseph Reitz High School, Evansville IN
Amy Whetstone	Evansville Day 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.

AS Senior Division – Animal Sciences

AS201	Thomas DiRienzo	Heir to the Throne. Finding the Genetic Relative of Tyrannosaurus
AS202	Isaac Bordfeld	Gamers: Man or Myth
AS203	Jay Ermi	Measuring Glucose in Your Food
AS204	Timothy Burklow	Why do chameleons change colors?
AS205	Rhiannon Bailey	The Affects of Acid Rain on Aquatic Life

CH Senior Division –Chemistry

CH201	Hannah Osmon	Glowing Water
CH202	Ashtin Wilson	Skewered Balloons
CH203	Brittany Mullis	Candle Burning Rates
CH204	Hunter Beuhler	Does Tea Turn Your tooth Yellow
CH205	Kristi Swartzentruber	Mixing Your Own Marshmallows
CH206	Cassie Atchley	Is it Just a Sensation?
CH207	Seth Cravens	Who's Got Power?

EN Senior Division – Engineering

EN201	Kaelin Holm	Arduinio Battrey tester
EN202	Alex Behme	Firearms Detection
EN203	Austin Nickens	Airbags and Hearing Loss
EN204	Will Strueh	Tracking with a Care
EN205	Claire Friona	Solar Water
EN206	Noah Sweet	Shaping Up to Fly: How Projectile Shape and Material Affect Motion
EN207	Kathryn Parker	Oil Spill Conveyor Belt
ES201	Chandra Gauer	Evaporating Liquids

ES Senior Division – Earth and Environmental Sciences

ES202	Meredith Walling	Mythbusters: Does a Towel Affect Drying Time?
ES203	Audrey Walters	Waste Not, Want Not
ES204	Allyson Speer	White Carnation
ES205	Thomas Clawson	Do Hurricanes Cause Warmer Seas?
ES206	Trevor Gress	From Trough to Field: Nutrient Content in Livestock Feed and its Impact on Manure

MA Senior Division –Mathematics

MA201	Justin Erdmier	Circles, Tangent Lines, and Triangles
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MB Senior Division – Microbiology, Molecular, Cellular Biology

MB201	Ganesh Viswanathan	Effect of Natural Substances on Alpha Amylase
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ME Senior Division – Medicine and Health Sciences

ME201	Bryce Flake	Plant Paper Purverying
ME202	Kimberly James	Posture Effects on Health
ME203	Rachel Winner	Mood and Anxiety in High School Basketball Player: A Pilot Study
ME204	Emily Chamness	Why Can't All Medicines Be Taken as Pills?
ME205	Brandon Herr	Chances of Getting Autism between not Vaccinated and Vaccinated
ME206	Baleigh Montgomery	Hiccups and Belches: The relation and cause to belches and hiccups after every meal
ME207	Jeremy Norman	Get Shots or Not
ME208	Shane Tominack	The Diabetic Phone

ME209	Seth Damm	The effect of exercise on diabetes
ME210	Lydia Whiting	Food Dye Pro
ME211	Logan Gingerich	The Effects of Different Environments on Bread
ME212	Jaley Schlosser	Heart Rate Reaction Time
ME213	Elijah Guess	Alzheimer's Disease Cognitive Testing Application
ME214	Bryce Frimming	Do Humans See Color the Same?
ME215	Rachel Stephens	Short Term and Long Term Effect of Heart Rate With Sugar as a Dietary Additive

PA Senior Division – Physics and Astronomy

PA201	Samuel Valadares	Movie Music
PA202	Zachary Potter	Determining the gravitational center of the Galaxy based on globular clusters
PA203	Tarik Rashada	Energy Eigenstates of the Schrodinger Equation for Potential Wells and the Free Particle
PA204	Brittany Craft	SKYGLOW

PC Senior Division – Energy: Physical and Chemical

PC201	Jason Chamness	Efficiency of a Solar Generator
PC202	Jake Scholz	Best AA battery
PC203	Brett Kolb	Thinking Up Solutions to a Lack of Fresh Produce in Urban Areas
PC204	Lindsey Koester	Waste Not Want Not: Can the Shelf Life of Surplus Garden Vegetables be Extended?
PC205	Ashley Alvarez	DIY Glow Flowers
PC206	Jacob Potter	To What Extent is the Implementation of Sphagnum Moss in the Gobi Desert Feasible for the Process of Desert Reclamation?

RC Senior Division – Robotics, Computers, and Systems Software

RC201	Maddox Williams	Blocking Wifi
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SS Senior Division – Behavioral and Social Sciences

SS201	Max Gonzales	The Stroop Effect
SS202	Madelyn Buehn	Multitasking Isn't Real?
SS203	Veronica Barber	Consequences of Cell Phones
SS204	Payton Broshears	Knowing you will have a stroke vs. not knowing: How to prevent?
SS205	Gabrielle Didia	How Does Age Affect the Outcome of Similar Anoxic Brain Injuries?
SS206	Gentry Fleck	App usage as a depression aid in different age groups.
SS207	Hayley Kaelin	A Fat Stomach Doesn't Always Equal a Fat Wallet
SS208	Grace Loveless	Elements of Music that Affect the Teenage Mind
SS209	Spencer Rogers	What gets people to wash their hands?
SS210	Morgan Bryant	Capital Punishment, Right or Wrong?
SS211	Emmett Dean	Congress, For the People, By the People?
SS212	Gage Gossman	Which Method of Texting and Driving Prevention is the Most Effective?
SS213	Bailey Hallam	The Value of Art
SS214	Hannah Harrison	Perception of Intelligence
SS215	Juliana Peckenpaugh	Marshmallow Test Girls vs Boys
SS216	Preston Weis	GPA-Extracurricular Activity Correlation
SS217	Kaylee Simmons	How does peppermint candy affect test scores?
SS218	Hannah DuBord	DRUGS V DIPLOMA
SS219	Jacob Ferguson	Reality of Driver Distraction
SS220	Antionette Horn	What is Socially Acceptable?
SS221	Avery Bond	Would You Smile?

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	Zachary Vannice & Landon Epley	Who Let The Dogs Out
AS102	Carter Deppe	Dog Smarts
AS103	Hannah Dotson	Chicken Experiment
AS104	Grace Wagoner	Favored Flavors of Felines
AS105	Meredith Denton	No Hoof, No Horse
AS106	Livia Land	Are Fingerprints Inherited
AS107	Jackson Vassy	Fido's Clean Mouth
AS108	Katherine Tessendorf	Animal Spit'cidity'
AS109	Jesse Coghill	Do Dogs Have Dominant Paws?
AS110	Sydney Simpson	Does the Type of Footing Affect How High a Horse Can Jump?
AS111	Sophia Margelot	Do Dogs Have a Paw Preference?
AS112	Kayley Stone	Why Are Tortoiseshell Cats Female?
AS113	Issac Thurmond	Sticky Feet

CH Junior Division – Chemistry

CH101	Avery Elpers & RuthAnn Meyer	Nail Polish
CH102	Natalee Schoening & Ellie Carlson	Cool Mint
CH103	Kaleigh Meritt	I See Vitamin C
CH104	Ethan Hahn	Sauce Race
CH105	Brianna Hoffman	BubbleOlogy
CH106	Hunter Mattes	Spoiler Alert
CH107	Ben Gollaher	Eggsceptional Changes
CH108	Rachel Deeg	Floating Water
CH109	Annie Crowder	Which gummy bear grows the most in the liquids?
CH110	Emma Mahan	The Maple Syrup Wonders Of The World
CH111	Sarah Williams	Evaporation of Liquids
CH112	Maggie Wiseman	GERMS...
CH113	Mylie Polley	Fastest Fizzling Frosty Refreshment
CH114	Anna Trotter	Which will win? Fantastik or CLOROX?
CH115	Elise Hibbs	Dissolving Rate
CH116	Abigail Salisbury	Does Hot Water Freeze Faster Than Cold?
CH117	William McAlvain	Oil Absorbing Polymers
CH118	Kylie Givens	how does temperature effect reaction time
CH119	Kayden Walker	gummy bear lab
CH120	Sami Lindsey	what fruits interfere with the solidification of jello
CH121	Jayden Deibler	Gummy Bear Experiment
CH122	Amanda Kessler & Ella Talley	Take The Clue When It Turns Blue
CH123	Rayyan Khan	Rust in Pieces
CH124	Sam McGuire	Ionic and Covalent Bonds
CH125	Abbie Steinhart	Which drink has more electrolytes??? Orange Juice or Sport drinks???
CH126	Isabella McChessney	Can Drinks Stain Your Teeth?
CH127	Lily Beyers	Cleaning Pennies

CH128	Conner Alford	Drug Solubility
CH129	Dylan Elliott	Egg Float
CH130	Kyle Cox	Passify Penny
CH131	Alysia Carter	Rock Candy
CH132	Emily Hargis	Spherification
CH133	Cecilia Pallummo	Which is better for your teeth?
CH134	Amy Chen	Which Liquid Corrodes Copper Faster
CH135	Emma Gibson	Less is 'Molar'
CH136	Shane O'Nan	How Do You Keep Soda Fizzy?
CH137	Morgan Paladino	**no title provided**
CH138	Tyler Spurling	Orange You Glad
CH139	Audrey Stallings	Crystal Clear
CH140	Natalie Bartley	Can You Stay On?
CH141	Sravani Ravipati	Orange Juice is 'C'urious
CH142	Mackenzie Davis	Cleaning Coins
CH143	David Kidd	How Much Salt Do You Add to Freshwater For An Egg To Float?
CH144	Christopher Barela	The Changes of Fire
CH145	Madison Henshaw	Cleaning Coins
CH146	Natalie Hutchinson	Which Potato Sample Decomposes the Most Hydrogen Peroxide?
CH147	James Reid	Mass - Transforms or not
CH148	Andrew Russell	Let it Glow
CH149	Ashton Rideout	Turning Milk into Plastic
CH150	Mackenzie Henshaw	Great Balls of Gluten
CH151	Emily Hudson	Marshmallow Madness
CH152	Bryanna Roy	How Salty Does the Sea Have to Be for an Egg to Float
CH153	Jackson Waggener	Does Smell Affect Taste?
CH154	Rachel Hume	Does Your Tummy Hurt ?
CH155	Emma Givens	Chew on This
CH156	Nya Heitkemper	Soakin' It Up
CH157	Bradley Smith	The Affect of Salt On Boiling Water
CH158	Ralynn Overfield	Which Whitening Toothpaste Works Best?
CH159	Sanaa Jackson	Who's Got the Gas?
CH160	Suchitraa Bandaru	Water To Fuel To Water
CH161	Kimber Schnarr	Water To Fuel To Water
CH162	Allison Herr	Evaporate Liquids
CH163	Natalie Yeh	How does soil affect the Ph of water?
CH164	Ankush Dhawan	MagicSand: A Novel Graphene Oxide Based Water Filtration System
CH165	Luke Robertson	How Flow Will it Go?
CH166	Brayden Baer-Brown	CANDLE
CH167	Estie Hazelwood	Which Lotion Moisturizes
CH168	Sarah Gomer	Paper Towel Absorbtion
CH169	Ashton Wilson	Candy Coating
CH170	Jessica Jacobs	How Does E-85 Affect Your Drive?
CH171	Ivy Lenko	Cleaner Coins

EN Junior Division – Engineering

EN101	Brandon Foster	Citrus Circuit
EN102	Kaitlyn McIntire	Three Bridges
EN103	Alizabeth Friday	Balloon Powered Car
EN104	Isabella Oakley	H2O or O2?
EN105	Jacob Fulcher	The Hydrogen Engine
EN106	Dominick Roy	PERPETUAL MOTION IS IT REAL?

EN107	Alexis Fridy	How does the tightness of the string affect the force of the arrow
EN108	Sam Dixon	Hydropower Experiment
EN109	Matt Robey	Pollution Extraction Pump
EN110	Rad Mattingly	Rad's Rube Goldberg
EN111	Grant Abbott	Infinity Mirror
EN112	B'Elanna Wetmore	Get your light right
EN113	Chloe Allen	Strength In Numbers
EN114	John Economou	Green Concrete
EN115	Braeden Fitzsimmons	A little Engine Theory
EN116	Wade Schneider & Isaac Simms	Does Weight Effect Speed?
EN117	Claire DeKemper	Dome Sweet Dome
EN118	Rachel Domsic	Light Intensity of Different Materials
EN119	Aubrey DeKemper	Leaning Tower of Pasta
EN120	Hannah Bryan	Going The Distance
EN121	Luke Oxley	Bending Beams

ES Junior Division – Earth and Environmental Sciences

ES101	Sam Leonard	CRYSTAL CLEAR
ES102	Anna Lancaster	Which Paper Towel Brand is the Best Value?
ES103	Dylon Moore	erosion
ES104	Briley Fuller	Were the Seven Continents Once Connected as One Supercontinent
ES105	Isabelle Hopf	Save Water, Save the World
ES106	Chris Peter	Alternative Energy Resources
ES107	Cooper Thompson	Soils of the tristate
ES108	Mason Bumgardner	Plant Erosion
ES109	Paige Renschler	Car vs. Bus
ES110	Matthew Boyd	The Aerodynamics of Various Sails
ES111	Natalee Travis	When Air Masses Collide
ES112	Jackson Williams	The Acidity in Rain Water
ES113	Amira Alashi	Will It Grow With The Flow?
ES114	Jasmine Robbins	Apple Browning Experiment
ES115	Kunai Shah	Water Desalination
ES116	Mihai Pascu	The Water Cycle of A Cloud
ES117	Akshaj Mishra	EARTH-CHANGING SYNERGY WITHOUT CHANGING EARTH

MA Junior Division – Mathematics

MA101	Zoe Bucshon	Which Metal Will Rust the Most?
MA102	Evan Rigney	A Haircut for Tennis Balls
MA103	Emma Becker	Shining Light on Value
MA104	Brennan Lynn	A Kernel of Truth About Popcorn
MA105	Chloe Yune	Bubble Science
MA106	Parker Harrah	Beauty According to the Golden Ratio
MA107	Luke Payne	Greased Lightning!
MA108	Jaxon Stauffer	Skill or Luck
MA109	Jackson Hutto	Impact of Club Loft on Shot Distance
MA110	Dawn Critser	Shortening the Waves
MA111	Mitchell Melton	Watered down

ME Junior Division – Medicine and Health Sciences

ME101	Kaitlyn Henke	Does the gender of a person affect the capacity of his/her lungs?
ME102	Madison Paladino	**no title provided**
ME103	Brianna Randall & Addyson Lingafelter	Smart Snacking
ME104	Lyndsey Gentil & Julianne Pardon	Which One
ME105	Emma Armstead	The Chicken Bone Experiment
ME106	Hannah Martin	Acid Attack
ME107	Andrew Chandler	Is Exer-'Gaming' a Good Form of Exercise?
ME108	Benjamin Howard	What's your type?
ME109	Hugh Hazelwood	which of your favorite drinks stain your teeth the worst?
ME110	Kaytlan Kemp	Nothing but Net: the science of shooting hoops
ME111	Masey Wilson	Which bat hits the ball the farthest
ME112	Kaylee Norman	The Heart of Music
ME113	Aria Van Royen	Which Has More Vitamin C
ME114	Lauren Verkamp	Music to My Ears
ME115	Aislinn Young	Music To My Ears
ME116	Samuel Piering	Oral Bee
ME117	David Schultz	Jammin with the heart
ME118	Aditi Patel	Is Denser Fruit Healthier?
ME119	Hunter Hayden	Munch Munch, Crunch Crunch: which potato absorbs the least amount of grease?
ME120	Lily Hubbard	Do You See What I See?
ME121	Natalie Yates	Are Fingerprints Inherited?
ME122	Jack Weinzapfel & Owen O'Reilly	Advil Solubility
ME123	Jenna Aimone & Carly Frazier	Under Pressure
ME124	Taylor Sinnett	Eye To Eye
ME125	Meggie Haas	Smellovation
ME126	Kaden Monroe	Natural Antacids vs. Chemical Antacids
ME127	Emily Bird	Electrolyte Challenge
ME128	Brooklynn Pace	Does Eye Color Effect How Well Dark Colors in Dim Lighting Are Seen?
ME129	Daelyn Quinn	Integrative Healing: Calcium Supplement Effectiveness in Decalcified Bones

MB Junior Division – Microbiology, Molecular, Cellular Biology

MB101	Chasity Bryant	Moldy Bread
MB102	Skyla Wilson	which brand of paper towels absorbs the most water?
MB103	Will Forker	Does Bacteria Give Off Gas When Eating Decaying Fruit?
MB104	Hallie Rue	One Potato, Two Potato, Three Potato, Mold
MB105	Anne Rowe	Clean Water for All
MB106	Olivia Lothamer	DNA Effect
MB107	Avery Wagner	What Is The Dirtiest Surface In My House?
MB108	Molly Collins & Korissa Mehling	What Food Molds Fastest?
MB109	Cassady Coomes	Yeast Fermentation
MB110	Madeline Holder	What are we touching
MB111	Zoe Minto	Winking: Is It Genetic?
MB112	Amanda Meuth	Eating Out With Germs
MB113	Arshdeep Singh	Bacteria's Growth Affected By Light Exposure
MB114	Sydney Smith	How Bacteria Travels
MB115	Jayla Collier	Are your hands as clean as you think?
MB116	Maddy Pressley	The Hand Sanitizer Hoax

PA Junior Division – Physics and Astronomy

PA101	John Boeglin	Let the Magnetic Force Be With You
PA102	William Bird	The Science Behind Deflategate
PA103	Rylea Dixon	how can the tee height effect the driving distance?
PA104	Marianna Green	Silencing the Flame
PA105	Jacob Perry	Holy Hologram
PA106	Kayle Sawyer	Deflate Gate
PA107	Dalton Sellars	Batter Up!
PA108	Hudson Thomas	How Light Reacts in Different Liquids
PA109	Koby Reed	More Pain=More Gain
PA110	Maggie Brown	Shooting Hoops
PA111	Christian Mehne	Which Smoke Detectors Work Best?
PA112	Seth Hartwick	Pellet Performance
PA113	Benjamin Lloyd	Does Sound 'Sound' Interesting
PA114	Skylar Parke	The Best Flight
PA115	Kellie Lambert	Beach or Bridge
PA116	Laynee Harding	Keeping It Cold
PA117	Braden Rollins	It's SHOCKING
PA118	Paige Ford	Eddy Currents
PA119	Carson Tipton & Tensei Nakamura	Do different temps of eggs affect how much weight they can hold
PA120	Carter Balde, Kati Jennings, & Lily Waddell	Swing Speed
PA121	Adrian Rashada	The Mathematical Expression of Magnetic Fields Generated by Experimentation On a Solenoid
PA122	Trevor Alexander	How far do you go?
PA123	Bryce Galloway	Football: Hot, Cold, or Just Right?
PA124	Wil Kyle	How Wing Design Affects Lift
PA125	Carly Cummings	swim: a dragging battle
PA126	Sara Purdue	Viscosity: Rising Up
PA127	Ryan McGehee	Racing Tire Frenzy
PA128	Nikolai Jones	Brushless Motors
PA129	Nicole Kobylanski	Dual Rotor and Horizontal Axis Wind Turbines: The Differences in Electrical Output
PA130	Santosh Ponna	Thermal Radiation Absorption
PA131	James Keaney	DeFlate-Gate Explained
PA132	Broderick Mitchell	Length vs. Speed
PA133	Krish Gupta	Angling Basketballs

PC Junior Division – Energy: Physical and Chemical

PC101	Nate Coomes	Testing Longevity of Batteries
PC102	Daniel Gardner	Tennis Ball On Contact
PC103	Dru Lovell	Wood or Aluminum?
PC104	Judson Baxter	Potato Battery Vs. Lemon Battery
PC105	Ava Floyd	Can You Blame the Burnt Cookies?
PC106	Lily Sinnett	Clean Pennies Make Cents
PC107	Madison Stone	composite bat vs aluminum bat
PC108	Meredith Gold	Rapid Refreshment
PC109	Ashton Todd	The Popcorn Kernel Test
PC110	Jace Lemp	Magnetic Fluid Madness
PC111	Dave Patel	Ice=Temperature
PC112	Grace Kelley	To Be Scented or Not To Be Scented

PC113	Emma Winiger	To Be Scented or Not To Be Scented
PC114	Xavier Bugg	Battery Power
PC115	Halle Bailey	Spare Your Hair
PC116	Emma Humphrey	Extreme Rubber
PC117	George Robertson	Conducting the Flow
PC118	Bryant Wroten	Coca Cola: Harmful or Not?
PC119	Jayla Smith	Does the Temperature of a Magnet Affect its Strength?
PC120	Kaelin Douglas & Kaeleigh Hart	Nuts for energy
PC121	Kyle Hartmann & Zion Greenwell	Elasticity
PC122	Rachel Reid	Electrolyte Challenge: Orange Juice VS. Sports Drinks
PC123	Faith Bastain	Luminol Temperature Reaction
PC124	Talon Counts	Generating Electricity Using Electromagnetic Induction: using kinetic energy from human motion to charge batteries
PC125	Olivia Frayer	Solid Carbon Dioxide Sublimation
PC126	Victoria Garland	Polar Pack Power
PC127	Luke Sergesketter	All Tied Up
PC128	Ritika Vavilala	Eco-Friendly Cell Phone Charger
PC129	Jaden Yates	Evaporation Rates

PS Junior Division – Plant Sciences

PS101	Ava Harmon	Rooting for a New Kind of Electricity
PS102	Joseph Ruhe	Playin' for the Plants
PS103	Abby Farmer	'Watering' With Coca Cola, Apple Juice, and Coffee
PS104	Molly Reed	Plant Growth
PS105	Ella Curneal	Growing Peas With Different Types of Water
PS106	Cole Royster	Exhausting Plants
PS107	Lily Kempf	Will The Plants Grow Better?
PS108	Ashley Wolfe	How Does Temperature of Water Effect Plant Growth Rate?
PS109	Isabel Edwards & Chloe Davis	Aspirin Water vs. Plain Water
PS110	Bethany Brennehan, Haley Miles & Hope Oeding	Does Aspirin Affect Plant Growth?
PS111	Alyssa Myers & Jessica Nickens	minerals vs. marigolds
PS112	Kalene Rumley	Killing algae with Ultraviolet light
PS113	Asha Nalley	Does exposure to music affect the growth of a plant?
PS114	Margaret Mathews	Food Coloring vs. Plants
PS115	Lexus Rutledge	Growing Greenery
PS116	Kamden Ash	Soil or Hydroponics?How Does Lettuce Grow Best?
PS117	Cydnee McLevain	Plant and Growth Effect
PS118	Camble Abner	Which Light Bulb Produces The Tallest Plants

RC Junior Division – Robotics, Computers, and Systems Software

RC101	Jayden Pruitt	What Can Block a Wifi Signal?
RC102	Brendan Haire	Wi-Fi mystery
RC103	Ben Kizior	What Materials Obstruct Wi-Fi Signal the Most?

SS Junior Division – Behavioral and Social Sciences

SS101	Meredith Atkins & Rachel Newman	Punishment Or Reward
SS102	Zoe Lawrence	Stroop Effect
SS103	Kelsie Hill	Which brand of popcorn pops the most kernels
SS104	Zoey Gates	Feeling Music
SS105	Brelynn Cobb	Importants of Sleep
SS106	Julianne Latimer	Beat of the Music
SS107	Madeleine Johnson	Positive vs Negative campaign ads
SS108	Avery Knies	The Scoop on the STROOP
SS109	Jackson Clark	Mind Joggers
SS110	Hannah Ryan & Abby Daniel	Red 'Fool' Coloring
SS111	Madi Eagan & Julia Cheski	How Does Time Perception Change With Age?
SS112	Haley Osborne & Elizabeth Williams	Does Chewing Gum Help Kids Concentrate
SS113	Grace Gasaway	Does Listening to Classical Music Improve Test
SS114	Huda Hamed	Are Childproof Bottles Childproof?
SS115	Lily Burke	It's Written All Over Your Face
SS116	Abi Lowery	Composite or Real?
SS117	Kyla Fralick	Cell Phones and Driving
SS118	Anna Gollaher	Multitasking: Brain Drain or Efficiency Booster?
SS119	Cadence McAtee	Why are Teens Stressed
SS120	Maggie Pugh	How Does Smell Affect Taste
SS121	Ava Herren	Does Color Affect Taste
SS122	Addie Stone	Stroop Effect
SS123	Mia Roppel-Wolf	Skinny
SS124	Madison Williams	Are Fingerprints Inherited?
SS125	Kyla Walters	Are Fingerprint Patterns Inherited
SS126	Tori Arnette	Fingerprints
SS127	Natalie White	Does An Eye-patch Improve An Archer's Score?
SS128	Madison Scott	Does Classical Music Increase Comprehension
SS129	Isabella Roberts	Power VS. Paper
SS130	Shruti Sivakumar	A Happy Day Takes Jitters Away
SS131	Alex Pinkston	Feline or Canine
SS132	Jaye Collier	Color satisfaction
SS133	Hannah Mathews	Different Angle Different Perspective
SS134	Jack Rideout	Does Stess Affect Body Temperature?
SS135	Claire Boeglin	How Does Stress Affect the Body?
SS136	Emma Mayes	Does Face Shape Affect One's Perception Of Kindness?
SS137	Addyson McClarney	How Does Smell Effect Taste?
SS138	Margaret Privette	Reward vs Punishment
SS139	Lela Curtis & Shannon Lindsey	A Good First Impression
SS140	Ashlyn Miller & Aliviya Pope	Does Smell Affect Taste
SS141	Abigail Gardner	Attire=Attitude

SS142	Kayla Wayne	Does a Cell Phone Conversation Affect Reaction Time?
SS143	Shaelyn Branson	Do The Eyes Have It?
SS144	Aliyah Settle	What Causes Teen Stress?
SS145	Mary Kate Miller	Coffee Decisions
SS146	Jacob Latimer	Does Gender Affect Short-term Memory?
SS147	Aubrie Hall	Does Sight Affect Taste
SS148	Emily Jarvis	Multitasking: Brain Drain or Boost in Efficiency?
SS149	Gracie Gardner	Do Dominate Hands Match Their Foot?
SS150	Kayla Oxley	Texting and Driving: Not 4U
SS151	Emily Thompson	Sounds of Stress
SS152	Evan Kanetkar	Does gender have an impact on the stroop effect
SS153	Levi Simpson	Somebody's Watching Me
SS154	Katherine Z (Zoe) Florez	Tasting Colors
SS155	Zelfea Barchett & Sophia Rexing	Tasty Colors

ELEMENTARY DIVISION

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

ELE101	Cameron Swader	Which sedimentary rock holds the most petroleum oil.
ELE102	Sydney Deig, Deborah Mattingly & Kasey Bonham	Can water float on water?
ELE103	Brenna Julian, Samantha McCutchan & Blake Huntsman	The quickest way to chill a soda
ELE104	Alex Healy, Kaylen Salee & Brendon Dooley	Ice, Ice, Melting
ELE105	Noah Weakley, Skyleigh Carnahan & Abby Hatfield	How to solve a Rubik's cube
ELE106	Lily Tenbarge, Caylee Hill & Sami Love	Rise,Rise,Rise up!
ELE107	Mallory Nurrenbern & Brier Baker	Are your eyes playing tricks on you?
ELE108	Colton Lippe, Abbi Doshier & Malaki Harms	Fizz Fast, Fizz Slow
ELE109	Alayna Reising, Olivia Crawford & Austen Crawford	Fingerprint Patterns Inherited
ELE110	Cameron McConnell, Kelsie Kincheloe & Paige Hanebutt	Is black ink really black?
ELE111	Micah Lockett, Sydney Schenk & Kaleb Goldsberry	Think Fast

ELE112	Payne Healy, Baylee Deig & Brooke Sledd	Candy Waterfall
ELE113	Jarrett Dye, Jillian Higginson & Taylor Randel	Big Pieces or Small Pieces
ELE114	Brooklynn Weyer, Nathan Paul & Brianna Cobb	Candy Colors
ELE115	Grace Schroeder & Tyler Hopper	Can an egg float on salt water?
ELE116	Kaelyn Rude, Kelsey Martin & Aidan Watters	Float that boat