

# TRI-STATE SCIENCE AND ENGINEERING FAIR

## Schedule of Events

### Thursday, March 7, 2019

- 12:00 PM – 4:00 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 8, 2019

- 9:00 AM – 4:00 PM Recreation, Fitness, and Wellness Center Open for Public Viewing of Projects
- 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 11, 2019

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

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## 2019 OFFICIALS

### Fair Director

Allison Grabert

*Director*

*SwISTEM Resource Center*

*University of Southern Indiana*

### Assistant Fair Director

Paige Walling

*SwISTEM Services Supervisor*

*SwISTEM Resource Center*

*University of Southern Indiana*

### Chief Judge

Jeff Polak

*Instructor of Physics*

*University of Southern Indiana*

### Special Exhibit Coordinator

Dave Ellert

*Coordinator of Engineering Outreach*

*SwISTEM Resource Center*

*University of Southern Indiana*

### Fair Set-Up

Rick Small

*Conference & Meeting Planning*

*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 a Go 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 IF they competed in the Hoosier State Science and Engineering Fair Advancement track. Eligible 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 30, 2019 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 12-17, 2019 in Phoenix, Arizona. 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 12<sup>th</sup> 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 a Go Pro!

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 IF they competed in the Hoosier State Science and Engineering Fair Advancement track. Eligible 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 30, 2019 at The Center in Indianapolis, Indiana.

## **ELEMENTARY GRAND AWARD WINNERS**

Two Elementary Grand Award winners will receive a trophy along with a Go Pro!

Three Elementary Division Honorable Award winners will receive \$50 and a trophy.

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 30, 2019 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 Award for Outstanding Research in Psychological Science*

### **ASM Materials Education Foundation**

*Certificate for Most Outstanding Exhibit in Materials Science*

### **Association for Women Geoscientists**

*Certificate of Merit for Outstanding Project in Geoscience by a Female Student*

### **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**

*Earth System Science Award 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)**

*Seven Naval Science Junior Division Award Certificates of Merit and Five \$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 11<sup>th</sup> 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 11<sup>th</sup> 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)**

*\$50 Award for Best Junior Microbiology Project & Certificate of Merit*

*\$50 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 2019 Options for Middle School Girls & Certificate of Merit*

*Scholarship for One-Half of Registration Cost to the 2019 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 2019 GO STEM! Summer Camp for Girls & Certificate of Merit*

*\*GO STEM! is a series of two-day mini-camps focused on specific STEM areas.*

**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 Tanvi Asthana  
Dr. James Bandoli  
Ms. Lisa Bartley  
Ms. Jessica Bartley  
Mr. Keith Carter  
Dr. Cindy Deloney-Marino  
Ms. Dana Dillon  
Mr. Dave Ellert  
Dr. Brandon Field  
Mr. Ryan Grossman  
Dr. Darla Grossman  
Mr. Tommy Haufe  
Dr. Will Hawkins  
Dr. Priya Hewavitharanage  
Dr. Rick Hudson  
Miss Sydney Ingler

Dr. Darlene Ingram  
Mr. John Jarvis  
Ms. Kennedy Jessup  
Mr. Michael Jones  
Dr. Mark Krahling  
Dr. Paul Kuban  
Miss Cristina Laughlin  
Dr. Jon Lowrey  
Mrs. Leisa Lowrey  
Mr. Mitch Luman  
Ms. Shelby May  
Dr. Matthew Merlo  
Miss Jordyn Meyet  
Dr. Todd Nelson  
Dr. Kenneth Parker  
Mr. Paul Peak  
Mrs. Amy Pierce

Mr. Jeffrey Polak  
Dr. Kenneth Purcell  
Mrs. Elizabeth Ramos  
Mr. Mitchell Rea  
Dr. Erin Reynolds  
Mr. Ryan Richardson  
Dr. Jeffery Seyler  
Mr. David Shrimpton  
Dr. Kelly Sparks  
Ms. Lori Threlkeld  
Ms. Carrie Ullmer  
Miss Laura Unfried  
Mr. Dave Voegel  
Dr. Uditha Wijesuriya  
Dr. Bryan Woosley  
Ms. Carrie 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.*

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, Dale, IN
Donna Folz	St. Philip School, Mt. Vernon, IN
Elizabeth Forche	Thompkins Middle School, Evansville, IN
Courtney Foster	Holy Rosary School, Evansville, IN
Maura Humphrey	Castle North Middle School, Newburgh, IN
Sara Jackson	Castle South Middle School, Newburgh, IN
Jennifer Jenkins	Tri-State Region Home Schools, Evansville, IN
Sara Killebrew	Castle North Middle School, Newburgh, IN
Elizabeth Mathew	Holy Rosary School, Evansville, IN
Deepthi Nair	Signature School Inc, Evansville, IN
Paul Perry	Castle North Middle School, Newburgh, IN
Elisa Peters	Heritage Hills High School, Dale, IN
Kenneth Purcell	Tri-State Region Home Schools, Evansville, IN
Gregory Small	New Tech Institute, Evansville, IN
Melva Spray	New Tech Institute, Evansville, IN
Pamela Swader	Heritage Hills Middle School, Sanata Claus, 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
Tom Walling	Perry Heights Middle School, Evansville, IN
Josh Wetzel	Heritage Hills Middle School, Dale, 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 – ALL PROJECTS

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

### SR201

*Culturing Saliva to Analyze Bacteria in Human Versus Dog Mouths*

Animal Sciences  
Claire Heckel, Morgan Vaal  
Grade 12  
Heritage Hills High School

### SR202

*Electrolyte Values in Various Sports Drinks*

Chemistry  
Logan Smallwood, Madeleine Vinson  
Grade 12  
Heritage Hills High School

### SR203

*The Effect Food has on Your pH Level*

Chemistry  
Kai Howard  
Grade 9  
New Tech Institute

### SR204

*Caesin Plastic- Making it Stronger*

Chemistry  
Sid Sullivan  
Grade 10  
New Tech Institute

### SR205

*Snow vs Rain pH*

Chemistry  
Tara Nau  
Grade 11  
New Tech Institute

### SR206

*Electromagnetism*

Engineering  
Logan Roedel

Grade 9  
New Tech Institute

### SR207

*Cool Roofs: Comparing Energy Efficiency Based on Roof Design and Style*

Engineering  
Jenna Norrick  
Grade 10  
Heritage Hills High School

### SR208

*Gutter Cleaner Prototype*

Engineering  
Logan Hutchinson  
Grade 10  
New Tech Institute

### SR209

*Welcome to 'Sistance'*

Engineering  
Mackenzie Hunt  
Grade 11  
New Tech Institute

### SR210

*Farming Practice Effect on Algae Growth*

Earth and Environmental Sciences  
Lillian Kolley  
Grade 10  
Heritage Hills High School

### SR211

*Salinity and Sound*

Earth and Environmental Sciences  
Luke Freeman  
Grade 10  
New Tech Institute

### SR212

*Robust Cobalt Complexes For CO2 Reduction*

Earth and Environmental Sciences  
Ankush Dhawan  
Grade 11  
Signature School

**SR213**

*The Science of Blood Spatter*

Mathematics

Jackson Hardin

Grade 11

New Tech Institute

**SR214**

*The Effectiveness of Antimicrobial Properties of Everyday Products*

Microbiology and Molecular/Cellular Biology

Summer Skelton, Abigael Williams

Grade 12

Heritage Hills High School

**SR215**

*Death Rays: The Effect of UV Light on E. Coli Bacteria*

Microbiology and Molecular/Cellular Biology

Cassidy Luecke, Grace Mayhall

Grade 10

Heritage Hills High School

**SR216**

*Effect of Extrinsic Factors on the Effectiveness of Antibiotic Inhibition of Bacterial Growth*

Microbiology and Molecular/Cellular Biology

Lalitha Nair

Grade 9

Signature School Inc

**SR217**

*5 second Rule: True or False*

Microbiology and Molecular/Cellular Biology

Graham Hamilton

Grade 9

New Tech Institute

**SR218**

*Effectiveness of Microfiber*

Microbiology and Molecular/Cellular Biology

Alexis Fenwick

Grade 10

**SR219**

*Physiological Effects of Blue Light*

Medicine and Health Sciences

Aubrey Ruxer, Hailey Ruxer, Taylor West

Grade 12

Heritage Hills High School

**SR220**

*Sunscreen: Does It Really Work?*

Medicine and Health Sciences

Annemarie Smith

Grade 11

New Tech Institute

**SR221**

*Does the Shape of Glass Affect a Solar Panel's Efficiency?*

Energy: Physical and Chemical

Daniel Goodrich

Grade 9

Heritage Hills High School

**SR222**

*Rocketing Our Way Into the Future*

Energy: Physical and Chemical

Richard 'Sam' Ottway

Grade 10

New Tech Institute

**SR223**

*Regrowing Green Onions*

Plant Sciences

Justis Guin

Grade 9

New Tech Institute

**SR224**

*The Value of Orbeez on Plant Life*

Plant Sciences

Amanda Compton

Grade 11

New Tech Institute

**SR225***Encryption and Passwords*

Robotics, Computers, and Systems Software

Luke Bryant

Grade 10

New Tech Institute

**SR226***EEG-Controlled Prosthetic Hand*

Robotics, Computers, and Systems Software

Nicholas Carter

Grade 11

Mater Dei High School

**SR227***Garduino, the Smart Garden*

Robotics, Computers, and Systems Software

Kaelin Holm

Grade 12

New Tech Institute

**SR228***Are Your Eyes Giving Away Your Emotions?*

Behavioral and Social Sciences

Destin Coomes

Grade 9

New Tech Institute

**SR229***Color In Advertising*

Behavioral and Social Sciences

Kaleb Josey

Grade 10

New Tech Institute

**SR230***Ideal Caffeine Algorithm*

Behavioral and Social Sciences

Beatrice DiRienzo

Grade 10

New Tech Institute

**SR231***Does Music Make The Number?*

Behavioral and Social Sciences

Olivia Seibert

Grade 10

New Tech Institute

**SR232***The Sound Of Music*

Behavioral and Social Sciences

Lily Smith

Grade 10

New Tech Institute

**SR233***Positive and Negative Reinforcement with Kids*

Behavioral and Social Sciences

Issac Warren

Grade 11

New Tech Institute

**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***Squirmy Worm*

Charlotte Evans

Grade 6

Plaza Park Middle School

**AS102***How Do Oil Spills Affect Marine Life?*

Aiden Robb

Grade 6

St Philip School

**AS103***Creating the Perfect Enrichment Toy*

Lucas McDonald

Grade 6

Evansville Day School

**AS104***Dog Vision*

Lexi Hoehn

Grade 6

Mount Vernon Jr High School

*Analyzing Antacids*

Sarah Day &amp; Jenna McDowell

Grade 8

Heritage Hills Middle School

**AS105***Do Cats Demonstrate Paw Dominance?*

Kaylee Bacon

Grade 7

St Philip School

**CH106***Luminol: Temperature vs. Brightness*

Taylor Vogt &amp; Mallory Sibbett

Grade 8

Helfrich Park Middle School

**AS106***What Bedding Materials Do Cats Prefer?*

Matthew Kitch

Grade 7

Thompkins Middle School

**CH107***Fizzy Fizzy Soda Pop*

Rebekah Rieber &amp; Christina Ve

Grade 6

Plaza Park Middle School

**CH Junior Division – Chemistry****CH101***Let's Get Fizzy!*

Aubrey Schoening &amp; Reagan Fortune

Grade 6

North Elementary School (Posey County)

**CH108***Salt to Crystals*

Isabel Brown &amp; Elizabeth Davis

Grade 6

Plaza Park Middle School

**CH102***Ice Ice Baby*

Laney Owens

Grade 6

North Elementary School (Posey County)

**CH109***Seashells and the Ocean*

Elise Gain &amp; Cherelle Wriston

Grade 8

Castle North Middle School

**CH103***What Makes Glow Sticks Glow Longer?*

Claire Coleman, Ella Wetzels, &amp; Sidney Ayer

Grade 7

Heritage Hills Middle School

**CH110***Were the Deflatists Wrong?*

Brody Moore &amp; Christian Cooper

Grade 8

Castle North Middle School

**CH104***Vitamin C in Orange Juice*

Lanae Canen &amp; Emma Day

Grade 8

Heritage Hills Middle School

**CH111***Plant Dyed Markers*

Ena Berry

Grade 6

Plaza Park Middle School

**CH105****CH112***The Effect Water Temperature Has on the Speed at*

*which the Tablet Dissolves*  
Brayden Caldemeyer  
Grade 6  
St Philip School

**CH113**  
*Churn Up the Heat*  
Greta Griffin  
Grade 6  
Evansville Day School

**CH114**  
*pH, H<sub>2</sub>O & U*  
Abby Hall  
Grade 6  
Helfrich Park Middle School

**CH115**  
*Natural vs. Synthetic Stain Removers*  
McKenna O'Daniel  
Grade 7  
Castle North Middle School

**CH116**  
*Which Stain Remover Works Best?*  
Riley Downey  
Grade 7  
Castle North Middle School

**CH117**  
*The Inflate Debate: Air vs. Nitrogen in Car Tires*  
Lydia Schott  
Grade 7  
Castle North Middle School

**CH118**  
*Cool It*  
Kyle Holzmeyer  
Grade 8  
Castle North Middle School

**CH119**  
*Rate of Fermentation of Different Sugars*  
Shums Parkar  
Grade 8  
Castle North Middle School

**CH120**  
*Put Out The Fire!*  
Cami Virgin  
Grade 8  
Castle North Middle School

**CH121**  
*Chill Out*  
Evan Butts  
Grade 8  
Castle North Middle School

**CH122**  
*Bleach Blond*  
Grace Mullins  
Grade 8  
Castle South Middle School

### **EN Junior Division – Engineering**

**EN101**  
*Concrete Boats*  
Zane Norman & Tyler Vanover  
Grade 7  
St Philip School

**EN102**  
*Floating on Air*  
Austin Schmitt & Henry Martin  
Grade 6  
North Elementary School (Posey County)

**EN103**  
*Pulleys: Making Work Easier*  
Kylan Brown & Evan Tuley  
Grade 6  
North Elementary School (Posey County)

**EN104**  
*Controlling Food Intake*  
Meia Walker & Lila Pfettscher  
Grade 8  
Helfrich Park Middle School

**EN105**  
*What Goes Up*  
Rowan Gilstrap

Grade 7  
Castle North Middle School

**EN106**

*Closing the Gap*

TJ Joyce

Grade 7

Helfrich Park Middle School

**EN107**

*Egg Drop*

Brody Carr

Grade 7

Helfrich Park Middle School

**EN108**

*Bridges and Robots*

Kodey Hausmann

Grade 8

Helfrich Park Middle School

**ES Junior Division – Earth and Environmental Sciences**

**ES101**

*Will Microwaved H<sub>2</sub>O Make a Sunflower Grow?*

Shane Mitchell, Griffin Wood, & Jay Little

Grade 7

Heritage Hills Middle School

**ES102**

*How Does Sunlight Affect the Strength of a Plastic Bag?*

Kyleigh Collins & Shelby Winkler

Grade 8

Heritage Hills Middle School

**ES103**

*You're Fracking Me Up*

Cameron Swader

Grade 6

David Turnham Education Center

**ES104**

*From Biomass to Biogas*

Holly Wilkerson

Grade 6

Helfrich Park Middle School

**ES105**

*Gone with the Wind*

Emma Fields

Grade 7

Helfrich Park Middle School

**ES106**

*Could a Residential Vertical-Axis Wind Turbine be an Economical Source of Energy in Southern Indiana?*

Makenna Counts

Grade 8

Castle North Middle School

**ES107**

*Must it Rust*

Elliot Rahman

Grade 8

Heritage Hills Middle School

**ES108**

*The Worth of Worms*

Nicholas Barnett

Grade 8

Castle South Middle School

**ES109**

*Which Water Would You Drink?*

Samantha Redd

Grade 8

Helfrich Park Middle School

**ES110**

*Pollution's Consequence: A Bird's Life*

Emma Klueh

Grade 8

Heritage Hills Middle School

## **MA Junior Division – Mathematics**

### **MA101**

*March Madness*

David Walling

Grade 6

Perry Heights Middle School

### **MA102**

*Are You a Cheater in Cards?*

Arianna Forsee

Grade 6

Mount Vernon Jr High School

### **MA103**

*How Does Infill Pattern Affect the Strength of an Object Printed on a 3D Printer?*

Landon Meuth

Grade 7

Helfrich Park Middle School

### **MA104**

*Basketball Shoes*

Jesse Kunst

Grade 7

Evansville Day School

## **MB Junior Division – Microbiology and Molecular/Cellular Biology**

### **MB101**

*Living in a Bacterial World*

Keegan Meritt & Raymond Reuter

Grade 6

North Elementary School (Posey County)

### **MB102**

*Algal Energy*

Amalee Strupp & Ava Bargeloh

Grade 8

Castle North Middle School

### **MB103**

*Yogurt Bacteria: Fact or Fiction?*

Nathaniel Jenkins

Grade 7

Tri-State Region Home Schools

### **MB104**

*What Liquid Will Cause Bread to Mold the Fastest?*

Addison Kelley

Grade 7

St Philip School

### **MB105**

*Extraction Action*

Quentin Boeke

Grade 7

Helfrich Park Middle School

### **MB106**

*Just Another 'Corny' Science Project*

Connor Herron

Grade 7

Helfrich Park Middle School

### **MB107**

*Loops, Whorls, Arches Oh My!*

Katie Futrell

Grade 7

Helfrich Park Middle School

### **MB108**

*The Effect of Sugar to Aspartame Ratio on Yeast Fermentation*

Kaitlyn Kahle

Grade 8

Castle North Middle School

## **ME Junior Division – Medicine and Health Sciences**

### **ME101**

*Lasting Lips*

Kaitlyn Oakley

Grade 6

North Elementary School (Posey County)

### **ME102**

*What We See And Can't*  
Caiden Duvall & Tyoshi Jackson  
Grade 6  
Plaza Park Middle School

**ME103**  
*What Color Eye Can See the Furthest: Blue, Green or Brown?*  
Rylee Robinson & Madison Streicher  
Grade 6  
Plaza Park Middle School

**ME104**  
*Squeaky Clean*  
Peyton Ashley & Morgan Barbour  
Grade 8  
Castle North Middle School

**ME105**  
*Beauty is Skin Deep, So is Skin Cancer*  
Annabelle Barsumian & Caroline Edris  
Grade 8  
Castle North Middle School

**ME106**  
*Heart Rate vs Time*  
Carson Newton  
Grade 6  
Evansville Day School

**ME107**  
*Developing an Artificial Pancreas*  
Iris Croll  
Grade 6  
Helfrich Park Middle School

**ME108**  
*Preventing Bacteria*  
Amishi Gandhi  
Grade 7  
Castle North Middle School

**ME109**  
*Seeing is Believing*  
Aparna Kudiyirikkal Anil  
Grade 7  
Castle North Middle School

**ME110**  
*Good Lipids vs. Bad Lipids*  
Abby Hessler  
Grade 7  
Helfrich Park Middle School

**ME111**  
*Your Beating Heart*  
Jaidyn Gogel  
Grade 7  
Heritage Hills Middle School

**ME112**  
*Effects Exercise has on Carbon Dioxide Output*  
Emma Moesner  
Grade 8  
Helfrich Park Middle School

**ME113**  
*G6PD am I cooler than you?*  
Micah Jones  
Grade 8  
Castle North Middle School

**ME114**  
*Diaper Wars*  
Kaitlyn Hinkle  
Grade 8  
Castle North Middle School

**ME115**  
*Caffeine and the Placebo Effect*  
Kendall Falconer  
Grade 8  
Castle North Middle School

**ME116**  
*Diaper Wars!*  
Kate McAtee  
Grade 8  
Castle North Middle School

**PA Junior Division – Physics and Astronomy**



**PA101**

*Bouncy, Bouncy Basketball*

Jack Fiester & Justin Molander

Grade 7

Castle North Middle School

**PA102**

*Nice N' Toasty*

Lily Burch & Christian Pleuss

Grade 8

Castle North Middle School

**PA103**

*Frequency Sticks*

Cade Musgrave & Nathan Reshad

Grade 8

Castle North Middle School

**PA104**

*Planes vs Drag*

Daniel Herrero

Grade 6

Evansville Day School

**PA105**

*A Spin on Soccer*

Rhami Nassr

Grade 6

Evansville Day School

**PA106**

*Carnival Game Shenanigans*

Lillian Preske

Grade 6

Mount Vernon Jr High School

**PA107**

*How Fast Can Water Flow?*

Kaden Knight

Grade 7

Helfrich Park Middle School

**PA108**

*Solar Panel Angling*

Shaunak Hanumante

Grade 7

Castle North Middle School

**PA109**

*The Effect of Ball Pressure on Head Acceleration During Purposeful Heading of a Soccer Ball*

AJ Lothamer

Grade 7

Castle North Middle School

**PA110**

*The Biomechanics Of Pitching*

Katryna Braun

Grade 7

Evansville Day School

**PA111**

*Star Light, Star Bright*

Nathan Foster

Grade 7

Evansville Day School

**PA112**

*Making Electricity*

Trista Browning

Grade 7

Evansville Day School

**PA113**

*Are football helmets safe? Does the type of padding in a football helmet affect the amount of force absorbed upon impact*

Will Bracher

Grade 8

Castle North Middle School

**PA114**

*Light It Up!*

Ethan Fuller

Grade 8

Thompkins Middle School

**PA115**

*Interesting Insulators*

Anika Paranjape

Grade 8

Castle North Middle School

**PA116**

*Where Is My Massless Spring?*  
Jude Dahlquist  
Grade 8  
Castle High School

**PC Junior Division – Energy: Physical and Chemical****PC101**

*What Refuels You Best?*  
Jordan Bacon & Chelsea Merkley  
Grade 6  
St Philip School

**PC102**

*Baseball Madness*  
Masyn Dye & David Jones  
Grade 6  
Mount Vernon Jr High School

**PC103**

*Meltdown*  
Chance Luede & Mike Hile  
Grade 6  
Mount Vernon Jr High School

**PC104**

*Burning The Midnight Oil*  
Brantly Oakley & Luke Garrison  
Grade 6  
North Elementary School (Posey County)

**PC105**

*Free Energy Generator Magnet Coil*  
Brandon Collins & Joshua Robbins  
Grade 7  
Castle North Middle School

**PC106**

*Vegetable Power*  
Jace Messier & Adam Vincent  
Grade 7  
Castle North Middle School

**PC107**

*Lax on, Lax off*  
Aiden Shimodaira & Ashton Enlow  
Grade 8  
Castle North Middle School

**PC108**

*H2O Go!*  
Malley Wagner  
Grade 6  
Mount Vernon Jr High School

**PC109**

*Scientific Study of Chemical Leaven*  
Lily-Ann Ware  
Grade 7  
Helfrich Park Middle School

**PC110**

*Lemon Power*  
Walter Fisher  
Grade 7  
Helfrich Park Middle School

**PC111**

*The Domino Effect*  
Aaron Eaton & Kaden Wagner  
Grade 8  
Thompkins Middle School

**PC112**

*Magnets and the Speed of an Electric Motor*  
Ryan Lambert  
Grade 8  
Castle North Middle School

**PC113**

*Salt Water Science*  
Owen Metzger  
Grade 8  
Castle North Middle School

**PS Junior Division – Plant Sciences****PS101**

*The Color of Growth*  
Mallory Kempf & Kaylee Kramer  
Grade 7

St Philip School

**PS102**

*The Rainbow Flow*  
Camille Mason & Izzy Sluder  
Grade 6  
Plaza Park Middle School

**PS103**

*The Fastest Germination. Which Seed is it?*  
Shelby Lang  
Grade 6  
Mount Vernon Jr High School

**PS104**

*Fruit's Offspring*  
John Thomason  
Grade 6  
Mount Vernon Jr High School

**PS105**

*Does Temperature Affect Plant Germination*  
Ella Thomas  
Grade 6  
Helfrich Park Middle School

**PS106**

*How Worms Affect Soil*  
Anna Thomas  
Grade 7  
Helfrich Park Middle School

**PS107**

*Diatomaceous Fruits-An Organic Way to Increase Shelf-Life of Fruits*  
Thisara Hewavitharana  
Grade 8  
Castle North Middle School

**PS108**

*Water Elements of Grass Growth*  
Easton King  
Grade 8

Castle North Middle School

**PS109**

*PH Plant Health*  
Hannah Jamison  
Grade 8  
Castle North Middle School

**PS110**

*PH Plant Health*  
Maya Yamaguchi  
Grade 8  
Castle North Middle School

**PS111**

*Will a Squeeze Let It Grow in a Breeze*  
Nizam Alashi  
Grade 8  
Castle North Middle School

**RC Junior Division – Robotics, Computers, and Systems Software**

**RC101**

*How Does Infill Pattern Affect Strength?*  
Anthony Elgin  
Grade 7  
Helfrich Park Middle School

**RC102**

*Reconnecting*  
Phillip Kulikov  
Grade 7  
Evansville Day School

**SS Junior Division – Behavioral and Social Sciences**

**SS101**

*Yeti Vs. Generic*  
Rylie Schipp, Evalyn Keller, & Samantha Haefling  
Grade 7

Heritage Hills Middle School

**SS102**

*Can the Gender of a Person Be Determined Based on Their Handwriting?*

Zoe Robinson & Lindsey Laine

Grade 7

Thompkins Middle School

**SS103**

*How Does Texture Affect Perceived Taste?*

Reagan Stock & Aaryanna Adams

Grade 7

Thompkins Middle School

**SS104**

*The Brain Games*

Olivia Burklow & Melanie Berger

Grade 7

Thompkins Middle School

**SS105**

*Student Learning*

Xia Peters & Mia Sanford

Grade 8

Heritage Hills Middle School

**SS106**

*Cookie Preference*

Caroline Barron

Grade 6

Evansville Day School

**SS107**

*Fear A Mysterious Emotion*

Lorelei Taylor

Grade 6

Evansville Day School

**SS108**

*Childproof Containers?*

Lyra Sagez

Grade 6

Evansville Day School

**SS109**

*Reaction Time*

Troy Bersch

Grade 6

Evansville Day School

**SS110**

*Who's Better: Boys or Girls?*

Lindsey Gunderloy

Grade 7

Castle North Middle School

**SS111**

*Do The Eyes Have It? Does Sight Affect Taste?*

Lauren Fiester

Grade 7

Castle North Middle School

**SS112**

*The Stroop Effect*

Colleen Meacham

Grade 7

Evansville Day School

**SS113**

*No Pain, All Game*

Ethan Hilton

Grade 7

Evansville Day School

**SS114**

*Preference Project*

Megan Risewick

Grade 7

Evansville Day School

**SS115**

*Medicine Mistakes*

Madison Wintner

Grade 7

Evansville Day School

**SS116**

*Do Students Take Test Better in Quiet or Loud Environments*

Madalyn Mangold  
Grade 7  
Thompkins Middle School

**SS117**  
*Computer Test VS Paper Test*  
Maekyn Grigsby  
Grade 7  
Thompkins Middle School

**SS118**  
*Team Up or Go Solo?*  
Jonathan Kitch  
Grade 7  
Thompkins Middle School

**SS119**  
*Music Tempo vs. Eating Rate*  
Luke Hinshaw  
Grade 8  
Heritage Hills Middle School

**SS120**  
*Chromatic Connections*  
Courtney Ewald  
Grade 8  
Castle North Middle School

**SS121**  
*Soapy Solutions*  
Molly Schnieders, Allie Wetzel, & Ashley Tapley  
Grade 7  
Heritage Hills Middle School

**SS122**  
*Sound Frequencies Can Change Your Heart*  
Kylie Clayton & Devin Dockery  
Grade 8  
Thompkins Middle School

**SS123**  
*Gender vs Color Preference*  
Halle Buechler  
Grade 6  
Evansville Day School

**SS124**  
*Battle of the Genders*  
Marshall Traylor

Grade 6  
Evansville Day School

**SS125**  
*Pretty Packaging*  
Rahini Kumbar  
Grade 6  
Evansville Day School

**SS126**  
*Motivation Mindfulness*  
Sreya Yelamanchili  
Grade 7  
Castle North Middle School

**SS127**  
*Average is Attractive*  
Jennah Atia  
Grade 7  
Evansville Day School

**SS128**  
*I Think I Can... Fact or Fallacy*  
Delaney Hunt  
Grade 7  
Castle North Middle School

**SS129**  
*Are Child Proof Bottles Really Child Proof?*  
Savannah Murphy  
Grade 8  
Castle North Middle School

**SS130**  
*Take Music to the Heart*  
Isabelle Hayes  
Grade 8  
Castle North Middle School

## **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**  
*Measuring Distance Traveled for Objects Using a Catapult*

Ella Clare Engbers  
Grade 2  
Holy Rosary School

**ELE002**

*Dog Paw Preference*

Audrey Troth

Grade 3

David Turnham Education Center

**ELE003**

*Using Magnets to Separate Iron from Different Materials*

Reagan Engbers

Grade 4

Holy Rosary School

**ELE004**

*How does tension change the pitch of a violin string?*

Genevieve Purcell

Grade 4

Tri-State Region Home Schools

**ELE005**

*Is all water created equal?*

Alaina Allyn

Grade 5

Marrs Elementary School