
2016 Alabama Science and Engineering Fair

Category Award Winners

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
<u>Project Title</u>			

Junior Division

Behavioral & Social Sciences

- 1 BE 6 **Haws, John David**
Indian Springs School Linked: The Correlation Between Creativity and Stress
- 2 BE 4 **Lee, Mary Katherine**
Holy Spirit Catholic High School Can you Picture what I can Remember?
- 3 BE 9 **Mantraratnam, Haripriya**
Mill Creek Elementary School The Stroop Effect: Words or Shapes?
- 3 BE 2 **Scroggins, Callie**
Mill Creek Elementary School Another Rewarding Experience- A Two-Year Study -
- 3 BE 12 **Towery, Jessica**
Clark-Shaw Magnet School What's Going On Behind Those Puppy Dog Eyes?
- 4 BE 1 **Ahmed, Sura** **Saadoon Sura**
Islamic Academy of Alabama How Do Video Games Affect Memory?
- 4 BE 3 **Mekdad, Jenna**
Islamic Academy Of Alabama Bring On The Heat
- 4 BE 11 **Partsch, Mary**
Clark-Shaw Magnet School Until All the Pieces Fit Comparing Boys Vs. Girls on the Autism Spectrum

Category

Place	Proj. No.	Name	School
Project Title			
4 BE 8		Thomann, Jake	
Clark-Shaw Magnet School		The Caterpillar Crawl	
HM BE 7		Bollinger, Michael Robert	
Challenger Elementary School		Sneaky Sugar	
HM BE 15		Burch, Ella	
Hampton Cove Middle School		Detecting Political Lies	
HM BE 13		Dalrymple, Jada	
Oakwood Adventist Academy		How Music Affects Memory	
HM BE 5		King, Alex	
Muscle Shoals Middle School		Don't Judge A Book By It's Cover	
HM BE 10		Sunil, Shreya	
Columbia Elementary school		Think Before You Drink: "Does Caffeine Affect Your Heart Rate and Does It Vary Between Age Levels"	

Botany & Zoology

1 BZ 30		Bassett, Brooke	
Holy Spirit Catholic High School		Munch Madness	
2 BZ 28		Sanderson, Spencer	
Mill Creek Elementary School		Liquid vs Granular: The Great Fertilizer Debate	
3 BZ 25		Banashak, Christopher	
Clark-Shaw Magnet School		How Recycled Water Affects Plant Growth	
4 BZ 27		Boardwine, Alison	
Eclectic Middle School		Jumping Into Biomechanics	

Category

Place	Proj. No.	Name	School
Project Title			
HM BZ 26	Bray, Katelyn		
Hampton Cove Middle School		Hydroponics vs. Soil	
HM BZ 31	Daugherty, Holden		
Clark-Shaw Magnet School		The Worm Maze	
HM BZ 22	Elbahrawi, Shurooq		
Islamic Academy of Alabama		Eni Mini Miny Mo Where Does The Myoglobin Go?	
HM BZ 29	Eltoum, Mustafa		
Islamic Academy of Alabama		Manual vs. Drip Irrigation	
HM BZ 20	Ledkins, Trenton		
Excel School		Deer Magnet	
HM BZ 23	Leverett, Kaelyn		
Clark-Shaw Magnet School		Frozen Seeds	
HM BZ 24	Muller, Ava		
The Altamont School		Growth Effects of Different Types of Water on Wheatgrass	
HM BZ 32	Rutledge, MaryEllen		
Shoals Christian School		Will Fluoride Effect The Growth of Plants?	
HM BZ 21	Smith, Gabriella		
Hampton Cove Middle School		Doggy Drool vs Human Spit Part 2	
HM BZ 33	Tesseneer, Kevin		
Horizon Elementary School		Magnetic Affect on Planaria	

Category**Place****Proj. No.****Name****School****Project Title**

Chemistry

- 1 CH 62 **Blevins, Catherine**
Decatur Presbyterian Church Radiation in My Room
School
- 2 CH 54 **Lamb, Emma**
Heritage Elementary School Casein Plastic: Finding the Best Milk and Acid Combination
- 3 CH 55 **Fillmore, Isabel**
Clark-Shaw Magnet School Cooking Up Some Candy
- 3 CH 64 **Majumder, Rachel**
Clark-Shaw Magnet School Temperature Effect on the Enzyme Catalase
- 3 CH 61 **Mehta, Labdhi**
Indian Springs School Kick As (Out of Water)
- 4 CH 66 **Chambers, Suneeti**
The Altamont School Vitamin C: Is It Just From Oranges?
- 4 CH 51 **Dinkel, Savannah**
Clark-Shaw Magnet School A Hairy Situation
- 4 CH 68 **Keel, Emma**
Hampton Cove Middle School What Metal is Most Susceptible to Corrosion
- 4 CH 57 **Singireddy, Avani**
Mill Creek Elementary School Dissolved Oxygen vs Temperature

Category

Place	Proj. No.	Name	School
Project Title			
HM CH 50		Bailey, Olivia	
St. Joseph Regional Catholic School		"Coming Clean"	
HM CH 59		Brown, Kayley	
Heritage Elementary School		Glow Stick Frenzy	
HM CH 60		Clark, Andrew	
Muscle Shoals Middle School		Keep Your Cool	
HM CH 58		Daw, Braxton	
Saraland Middle School		Ferrofluid	
HM CH 56		Karassi, Sidra	
IAA		Detergant	
HM CH 53		Murphy, Xavier	
Oakwood Adventist Academy		Can the Life Span of a Bubble Be Extended in Different Temperatures and Atmospheric Conditions?	
HM CH 67		Smith, Mya	
Muscle Shoals Middle School		What Melts Ice Fastest?	
HM CH 63		Todd, Brandon	
Rainbow Elementary School		So What's the pH Factor?	
HM CH 52		Vanterpool, Jayden	
Oakwood Adventist Academy		Can Silver Decrease Bacterial Enzyme Function?	
HM CH 65		Williams, Abby	
Danville Middle School		The Difference Between Bleached and Unbleached Flour	

Category**Place****Proj. No.****Name****School****Project Title**

Engineering

- 1 N 87 **MacDonald, Sophia**
Clark-Shaw Magnet School Electric Waves
- 2 N 83 **Standaert, Benjamin**
Indian Springs School Can You Find Your Book?
- 3 N 86 **Ashley, William**
Cornerstone Christian Academy Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"
- 3 N 89 **Hamilton, Sydney**
JF Drake Middle School Impact of Wind Turbine Design on Its Performance
- 3 N 91 **Limaye, Maanasi**
Rainbow Elementary School Now You See It, Now You Don't
- 3 N 90 **Patel, Neer**
Saraland Middle School Lightning Shoes
- HM N 82 **Ahmed, Hader**
Islamic Academy of Alabama Building Materials and Acid Rain
- HM N 92 **Bond, Madeleine**
Agape Academy Solar Source: Maximize Efficiency for Solar Energy
- HM N 80 **Ford, Isaac** **Tyler Lawson; Gra**
Our Lady of the Valley The OLV 500
- HM N 94 **Gallion, Alyssa**
Carver Magnet School PinPoint

Category

Place	Proj. No.	Name	School
Project Title			
HM N 85	Jalloh, Samba		
Islamic Academy of Alabama		Destruction	
HM N 81	Jordan, Riley		
Carver Magnet School		"The Hovercraft...Floating on Air!"	
HM N 88	Kynard, Summer		
Horizon Elementary		Hydroelectric Generator	
HM N 93	Tetrault, Elena		
Hampton Cove Middle School		From Robotics to the Google Car: How to Navigate Through the World	
HM N 84	Woolverton, Kameron		
Holy Spirit Catholic High School		Cool Cooler Coolest	

Environmental

1 E 118	Madison, Jade		
Clark-Shaw Magnet School		In The Zone	
2 E 116	Stapleton, Jackson		
East Limestone High School		Farmers Meet Drones	
3 E 125	Sheffer, Elijah		
Holy Spirit Catholic High School		Water Through Soil	
3 E 124	Tucker, Riley		
Clark-Shaw Magnet School		Use of a Microbial Fuel Cell	
3 E 121	Vilardi, Julian		
Wetumpka Middle School		Nuisance or Not? Using Problem Organisms as Alternative Biofuels	

Category

Place	Proj. No.	Name	School
Project Title			
4 E	123	Appling, Benjamin	
Hilltop Montessori		The Effect of Certain Storage Conditions on the Ripening of Avocados	
4 E	110	Dublin, Brian	
Oakwood Adventisit Academy		"Which Wind Turbine Best Harness Wind?"	
4 E	113	Edwards, Emily	
Beverlye Magnet School		Batteries - Which Ones Make Cents?	
4 E	115	Phan, Minh	
Columbia Elementary School		Energy For All	
HM E	112	Almatubsi, Yasmeeen	
Islamic Academy of Alabama		Air Particles And Air Qualities	
HM E	126	Bell, Jack	
Mill Creek Elementary School		What If The Pigs Had It All Wrong?	
HM E	127	Copeland, Connor	
Columbia Elementary		How Fertilizer Effects Growth on Algae in Pond Water	
HM E	120	Goldberg, Julia	
Indian Springs School		M&M's	
HM E	111	Jennings, Javon	
Homeschool		Absorption Versus Reflection: The Heat of the Battle	
HM E	122	Meyer, Drake	
Horizon Elementary		The Color of Conservation?	

Category

Place	Proj. No.	Name	School
Project Title			
HM E	114	Murphree, Joshua	
Columbia Elementary School		Big Rocks First: Does the Order of Filtration Materials Really Matter?	
HM E	117	Owen, Kate	
Columbia Elementary School		How to Wash Your Water	
HM E	119	Skrabanek, Emily	
Rainbow Elementary School		Keeping the Heat In	

Math & Computers

1 X	140	VanHouten, Naomi	
Covenant Christian Academy		"Domo Arigato" Precision Roboto	
2 X	145	Martin, Miranda	
Montevallo Middle School		RFID - The Bells Toll for Thee	
3 X	142	Agrawal, Trisha	
Phillips Preparatory School		Electronic Eyes for the Blind	
3 X	141	Rigby, Bennett	
St. John the Baptist Catholic School		Compression: Is It Worth The Time?	
4 X	147	Towery, Alexander	
Clark-Shaw Magnet School		The Problem With Probability	
HM X	143	Condurso, Ashley	
St. John the Baptist Catholic School		How Does Grooming a Horse at Rest Lower Their Heartrate Rather Than Just Rest Following Exercise?	
HM X	148	Hubbard, Nina	
Hampton Cove Middle School		Huffman Coding	

Category

Place	Proj. No.	Name	School
Project Title			

HM X 144 Naser, Talal
Islamic Academy Of Alabama Indirect Measurements

HM X 146 Zuberi, Maaz
The Altamont School The Health Effects of Technology

Medicine & Health Sciences

1 ME 167 Barrow, Addison
Clark-Shaw Magnet School Don't Fry Your Brain

2 ME 168 Rawat, Akanksha
Clark-Shaw Magnet School Herbs vs. Antacids

3 ME 173 Grider, Anna
Rainbow Elementary School The Skinny on Moisturizers: Which Works Best to Keep Skin Moist

4 ME 164 Sridhar, Nikitha
Auburn Junior High School Brain's Processing of Novelty Information: Effects of Working Memory Resources

4 ME 162 Srivastava, Sejal
Auburn Junior High School Analyzing Alternative Approaches for Testing E. coli in Water in Support of the Food Safety Modernization Act's Produce Safety Rule

HM ME 174 Alabsi, Nooraldein
Islamic Academy of Alabama Which Antacid is Best ?

HM ME 160 Bollero, Megan
Grace Lutheran School "C" My Potato

HM ME 169 Gay, Olivia
West Madison Elementary School Keeping It Smooth

Category

Place	Proj. No.	Name	School
Project Title			

- | | | | |
|-----------|--------|-------------------------------------|----------------------------------|
| HM | ME 171 | Mansur, Ramy | |
| | | Islamic Academy Of Alabama | Natural Acne Gents |
| HM | ME 170 | Mohamed, Ramy Mansur | |
| | | Islamic Academy Of Alabama | Natural Acne Agents |
| HM | ME 166 | Patel, Deven | |
| | | Indian Springs School | Destroying Diabetes |
| HM | ME 172 | Rhonemus, Elizabeth | |
| | | Hampton Cove Middle School | That Doesn't Help Us! |
| HM | ME 161 | Schaetzle, Emms | |
| | | Holy Spirit Catholic High School | "Death Grip" |
| HM | ME 175 | Smith, Tricia | |
| | | St. Joseph Regional Catholic School | Stop! Don't Touch That Doorknob! |
| HM | ME 163 | Steinman, Isadola | |
| | | The Altamont School | Bacteria What's Your Deal? |
| HM | ME 165 | Thompson, Callie | |
| | | Clark-Shaw Magnet School | Catching Rays |

Physical Science

- | | | | |
|----------|-------|------------------------------|---|
| 1 | Z 190 | Spence, Jacob | Zachary Tribble |
| | | East Limestone Middle School | Keepin' It Cool |
| 2 | Z 192 | Edelman, Emily | Destiny Self |
| | | East Limestone Middle School | Lookie Lookie Lookie, Don't Burn the Cookies! |

Category

	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
	<u>Project Title</u>			
3 Z	196	Reynolds-Gleason, Jordan		
	Grace Lutheran School		Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?	
4 Z	202	Hur, Sydney		
	Mill Creek Elementary School		How To Get Shiny Teeth	
4 Z	194	McGallagher, Nicholas		
	Classical Conversations		2nd Class Levers Give "First Class" Compression	
4 Z	195	Revera, Ryan		
	Horizon Elementary		Bats Blast	
4 Z	206	Thompson, Miles		
	St. Joseph Regional Catholic School		Looking For a Flash of Fire	
HM Z	198	Ahmad, Danyia		
	Islamic Academy of Alabama		Crazy Crystals	
HM Z	210	Anderson, Aeneas		
	Clark-Shaw Magnet School		The Data Track Space of a CD/DVD	
HM Z	213	Antella, Sidra		
	Islamic Academy of Alabama		Which Detergent?	
HM Z	193	Boackle, Elizabeth		Lizzie Ranelli, Sa
	Our Lady of the Valley		YUM YUM	
HM Z	211	Cole, Olivia		
	Hampton Cove Middle School		Wearing Away Your Smile: Tooth Enamel and How What You Drink Affects It	

Category

Place	Proj. No.	Name	School
Project Title			
HM Z 203	Danh, Megan		
Rainbow Elementary School		How Well Do Different Materials Create Electricity?	
HM Z 205	Fulford, Justin		
Geneva Middle School		Is A Yeti Worth It? Which Brand of Cooler Keeps Ice the Longest?	
HM Z 214	Fuller, Brendan		
Holy Spirit Catholic High School		Which is More Eggcellent?	
HM Z 199	Geary, Lauren		
West Madison Elementary School		Egg Geodes	
HM Z 207	Johnston, Riley		
Hampton Cove Middle School		Phonebook Friction	
HM Z 191	Jones, Madison		Whitney Veasey
Greenville Middle School		Let's Get Crackin'	
HM Z 208	Michael, Ella		
Huntsville Junior High School		Radiant Absorbency of Different Colors and Materials	
HM Z 212	Mynampally, Sohan		
Mill Creek Elementary School		What Materials Can Block a WiFi Signal?	
HM Z 215	Parker, William		
Horizon Elementary School		Soccer Ball Air Pressure Study	
HM Z 197	Prabhakar, Ashwin		
Rainbow Elementary School		Colorful Candies Hide Their True Colors	

Category

Place	Proj. No.	Name	School
Project Title			
HM Z	204	Purdy, Spencer	
Phillips Preparatory School		I'm Melting!	
HM Z	200	Ram, Vishay	
Liberty Middle School		En"light"enment	
HM Z	209	Rushing, Adrian	
Clark-Shaw Magnet School		Shooting Science	
HM Z	216	Somu, Pranav	
Millcreek Elementary School		Ohm's Law: Understanding Parallel and Series Circuits	
HM Z	201	Wiggins, Ella	
Beverlye Magnet School		How Far Can a Spark Jump?	

Category**Place****Proj. No.****Name****School****Project Title**

Senior Division
Animal Science

- 1 AS 302 **Bowman, Sarah**
Murphy High School Lethal Versus Non-lethal Methods of Aging *Lutjanus campechanus*
- 2 AS 305 **Chaplin, Ansley**
W.H. Davidson High School The Effect of Salinity on the Filtration Function of Oysters
- 3 AS 301 **Oakley, Michael**
Shoals Christian School Crayfish Testing Phase II Crayfish Testing Phase III: Temperature Variable With Different Habitats
- 3 AS 300 **Simonton, Clay**
Wetumpka High School Can You Cure Chicken Boredom?
- 4 AS 303 **Woodring, Kendall**
St. John Paul II Catholic High School Which Saddle Pad Keeps the Horse the Coolest?
- 4 AS 304 **Woodring, Sydney**
St. John Paul II Catholic High School Which Type of Horse Boot Creates Less Heat?

Behavioral & Social Sciences

- 1 BE 323 **Michl, Ava**
Alabama School of Fine Arts Detectable Viral Load is Associated With Increased Heat Pain Sensitivity in Individuals With HIV
- 2 BE 324 **Langhinrichsen-Rohling, Ryan**
Murphy High School Do Athletes Have Their Head In the Game
- 3 BE 321 **Adam, Max**
Wetumpka High School Audio Files for Audiophiles

Category

	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
	<u>Project Title</u>			
3	BE	326	Smith, Carson	
	Glenwood High School		Obsessed or Stressed	
3	BE	330	Welch, Katherine	
	St. John Paul II Catholic High School		Reliability of Memory Recall	
4	BE	320	Aishah, Duha	
	Islamic Academy of Alabama		"My Anxieties Have Anxieties"	
4	BE	331	Gonzales, Melinda	
	St. John Paul II Catholic High School		The Science of Hand-Sniffing	
4	BE	322	Locker, William	
	Murphy High School		College Students' Attitudes Toward Political Candidates: The Effect of Gender	
4	BE	329	Reimer, Jackson	
	Murphy High School		Voluntary or Involuntary	
HM	BE	327	Cowart, Hannah	
	Jefferson County International Baccalaureate School		The Effect of Verbal Suggestion on Concentration Levels	
HM	BE	325	Koan, Jonathan	
	Shoals Christian School		How Classical Music Affects Test Scores	
HM	BE	14	Maggi, Jessica	
	Holy Spirit Catholic High School		To Read or Not to Read	
HM	BE	328	Meeks, Addison	
	Auburn High School		Total Recall: Phase Two of Do You See What I See?	

Category**Place****Proj. No.****Name****School****Project Title**

Biochemistry

- 1 BI 342 **Jones, Alexis**
Auburn High School Assessment of Macro and Micronutrients in a Recycled Supplement for Canines
- 2 BI 343 **Martin, Sean**
Murphy High School How Does Each Denaturation Process Vary from Different Kinds of Protein?
- 3 BI 340 **Armstrong, Arianna** **Jaela Lee**
The Calhoun School Cold or Hot?

Biomedical & Health Sciences

- 1 BH 364 **Patel, Om**
Alabama School of Fine Arts Basal and Maximal Oxygen Consumption Rates Of Human Umbilical Venous Endothelial Cells (HUVEC) Are Decreased In Infants Who Die or Develop Bronchopulmonary Dysplasia (BPD)
- 2 BH 362 **Jiao, Kenneth**
Indian Springs School An Epigenetic Factor, CHD7, Inhibits Migration of Metastatic Breast Cancer Cells
- 3 BH 367 **Anshumali, Avinash**
W.P. Davidson High School Investigating the Anti-Cancer Abilities of Aurpatene
- 3 BH 368 **Badve, Rohan**
W.P. Davidson High School Natural Oils Protect Human Skin Cells Against Harmful UVB Radiation: Effective as Sunscreen Agents
- 3 BH 365 **James, Hannah**
Wetumpka High School The Effects of a Natural Extract (Allyl disulfide) on Lymphocyte Activation
- 4 BH 361 **Morrow, Isabella**
Shoals Christian School "The Effect of Electrolytes on the Heart Rate of Daphnia Magna"

Category

Place	Proj. No.	Name	School
Project Title			
4 BH 366	Namasivayam, Aarthi		
The Altamont School		Biocompatibility of Polyoxmethylen Bioreactors for Tissue-Engineered Vascular Models	
HM BH 360	Guilbert, Madison		
St. John Paul II Catholic High School		"Exotic Eyesight"	
HM BH 363	Kurth, Julius		
Wetumpka High School		Antacid Potency	

Cellular & Molecular Biology

1 CB 381	Lim, Jamie		
Murphy High School		Cellular and Molecular Analysis of Allicin's Effect on Leukemia Cells	
2 CB 382	Kankirawatana, Pongbhud		
Alabama School of Fine Arts		Connexin 26 and Connexin 30 Mutations in CMV-related Sensorineural Hearing Loss	
3 CB 383	Cox, Sydney		
Wetumpka High School		I Can See Clearly Now, The Protein's Gone	
4 CB 380	Aloria, Ernard Jules		Emily Pinkston
Wetumpka High School		The Effects of Ocean Acidification on Marine Life	

Chemistry

1 CH 407	Reed, Sarah		
St. John Paul II Catholic High School		Vitamin C: Red vs. Green	
2 CH 403	Sridhar, Varsha		
Jefferson County International Baccalaureate School		The Determination and Bioremediation of Potential Carcinogens, Bisphenol A (BPA) and Bisphenol S (BPS)	

Category

Place	Proj. No.	Name	School
Project Title			
3 CH 405	Burge, Keri		
St. John Paul II Catholic High School		The Effects of Mummification on Chickens	
3 CH 402	Padmalayam, Maya		
Alabama School of Fine Arts		Focused Ultrasound-Mediated Targeted Delivery of Polymer-Encapsulated Drugs: A Novel Therapeutic Strategy for Cancer	
3 CH 401	Shoreibah, Nada		
Indian Springs School		A Sensible Solution (Detergent for Feathers)	
4 CH 408	Craig, Maryssa		
Holy Spirit Catholic High School		Which Moisturizer Works Best?	
4 CH 404	Ho, Davina		
Murphy High School		The Effects of Catalysts in the Depolymerization of Chitin Using Ionic Liquids	
4 CH 409	Nguyen, Kelly		
W.P. Davidson High School		The Effects of pH on Lead Testing	
4 CH 406	Vogler, Daniel		
James Clemens High School		The Wetting Properties of Metallic Substrates Modified with Organic Self-Assembling Monolayers	
HM CH 400	Cox, Eleanor		Lauren "Gracie" B
Stanhope Elmore High School		The Hotter the Crime, the Longer the Time	

Earth & Environmental Sciences

1 EA 422	Massey, Brooklyn		
Davidson High School		The Effects of Hormones on Aquatic Life and How They Alter Gender Patterns	

Category**Place****Proj. No.****Name****School****Project Title**

- 2** EA 423 **Abernathy, Briganna**
Jefferson County International Baccalaureate School The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants
- 3** EA 421 **Foster, Margaret**
Davidson High School The Effect of Using Daphnia magna to Monitor Water Toxicity
- 4** EA 420 **Palmer, James**
Saint John Paul II Catholic High School Efficacy of Select Homemade Filters

Embedded Systems

- 1** ES 440 **Prevost, Drew**
Covenant Christian Academy Development and Systems Integration of a Modular Power Factor Corrected Preconverter, LiFePO₄ Battery Charger, DC Motor Controller, and Battery Monitoring System
- 2** ES 441 **Khan, Hamza**
Alabama School of Fine Arts Object Detection and Tracking with OpenCV and a Quadcopter

Energy: Chemical

- 1** EC 462 **Patel, Bela**
Indian Springs School Emerging Energy of the Future
- 2** EC 460 **Palanki, Rupa**
W.P. Davidson High School Analysis of Glycerol Reactor to Produce Hydrogen for Fuel Cell Applications
- 3** EC 461 **Gonzalez, Miguel**
Jefferson County International Baccalaureate School Battery Life of Smartphones in Different Temperature Conditions

Category**Place****Proj. No.****Name****School****Project Title**

Energy: Physical

- 1 EP 484 **Lenard, Nolan**
W.P. Davidson High School Maximizing The Efficiency of Dye-Sensitized Solar Cells
- 2 EP 481 **Greene, Elijah** **Travis Gunn**
Hewitt-Trussville High School Renewable Power Trekking Pole
- 3 EP 483 **Riggs, Sharee**
Wetumpka High School Electro-Mechanical Powered Light: Phase II
- 4 EP 480 **Bush, Marcus** **Brenden O'Keefe**
Stanhope Elmore High School A Cool Way To Make Electricity
- 4 EP 485 **Smitherman, Victoria**
Murphy High School To Heat or Not To Heat
- HM EP 482 **Hutsler, Clayton**
Wetumpka High School Efficiency of Solar Panels

Engineering: Mechanics

- 1 EM 503 **Lou, Danika**
Holy Spirit Catholic High School Highly Effective Hybrids
- 2 EM 504 **Lall, Rahul**
Auburn High School Prognostication of Flexible Batteries in Wearable Electronics
- 3 EM 500 **Burford, Emma** **Amanda Green,**
Hewitt-Trussville High School Poor Fine Motor Skills Assistive Touchscreen Device

Category

Place	Proj. No.	Name	School
Project Title			
4 EM 505	Lynn, Lucas		
Wetumpka High School		Shear Radial Strength: Using Web Geometry to Create a Better Body Armor	
4 EM 502	Strickland, Edmond		
South Montgomery County Academy		Dual Purpose Muffler	
4 EM 501	Tran, Thuan		Christain Golding
Hewitt-Trussville High School		Save the Turtles	
4 EM 506	Wetter, Maria Alena		
Murphy High School		Testing the Building Techniques of the Times	

Environmental Engineering

1 EE 533	Lange, Megan		
Auburn High School		Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification	
2 EE 534	Knight, Abigail		
Hewitt-Trussville High School		The Removal of Arsenic (III) from Contaminated Groundwater in Developing Countries	
3 EE 532	Aragon, Viviana		
James Clemens High School		Pharmaceutical Pollution in Bodies of Water	
3 EE 531	Lange, Noel		
Auburn Junior High School		Kinetic Evaluation of Metal Modified Non-Woven Cotton Fibers Capable of Removing Sulfur Dioxide	
4 EE 530	Bohanan, Victoria		Halley Truesdale
East Limestone High School		How to Stay Cool	

Category**Place****Proj. No.****Name****School****Project Title**

Mathematics

1 MA 550 **Kim, Alena**
Alabama School of Fine Arts The Astroid Survey Problem

2 MA 551 **Walker, David**
Decatur High School The Theseus Encryption

Microbiology

1 MI 571 **McFeely, Mitchell**
St. John Paul II Catholic High School Analysis of Cell Phone Bacterial Load Reduction and the Effect of Educational Information on Future Behavior: A Multiphase Study

2 MI 570 **Fu, Richard** **Danielle Wu**
Vestavia Hills High School / Indian Springs School Probiotics in Yogurts and Their Potential Impacts on Human Health

3 MI 572 **Ananthasekar, Skandan**
St. Paul's Episcopal School Bacterial Profile of Various Illnesses in Order to Determine Distinct Bacterium

3 MI 574 **Burks, Brianna**
Saint John Paul II Catholic High School The Effects of Toothpaste on Canis Lupus Familiaris' Bacteria on Teeth

3 MI 576 **Summers, Tara**
W.P. Davidson High School How Various Concentrations of Glucose Affect the Chemotaxis of Phyusarum Polycephalum

4 MI 573 **Rasool, Soha**
Alabama School of Fine Arts The Effects of Synthetic Chemicals on Staphylococcus Epidermidis

HM MI 575 **Wells, Brianna**
Cornerstone Christian Academy What Amount of Ultraviolet Radiation Kills Bacteria?

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
--------------	------------------	-------------	---------------

<u>Project Title</u>

Physics & Astronomy

- | | | | | |
|----|--------|----------------------------|---|---|
| 1 | PH 600 | Jouve, Mary Alice | McGill-Toolen Catholic High School | "Clear Sky at Night, Astronomer's Delight": An Analysis of Skyglow(Mobile, AL & Miramar Beach, FL) |
| 2 | PH 604 | He, Adam | Alabama School of Fine Arts | Investigation of the Orbital Stability of Circumbinary Planets in the Habitable Zone of the Double-Star System Kepler-16 |
| 3 | PH 606 | Ka, Mamecheikh | Auburn Junior High | To Warm A Planet |
| 3 | PH 601 | McGinnis, Michael | Jefferson County International Baccalaureate School | Growth and Measurement of Ices Depending on Input Flow Rates of Nitrogen Gas for Application in Terahertz Spectroscopy of Interstellar Ices |
| 4 | PH 603 | Crow, Braden | Pell City High School | How Much Wind Does It Take To Affect The Flight of a Baseball? |
| 4 | PH 605 | Good, Kenneth | Columbia High School | Practically Invisible Using Metamaterials |
| 4 | PH 607 | Reed, Connor | St. John Paul II Catholic High School | Ultrasonic Levitation |
| HM | PH 602 | Wallington, Charles | Oakwood Adventist Academy | How Do You Use a Laser Pointer to Measure Space on CDs? |

Plant Sciences

- | | | | | |
|---|--------|-------------------------|--------------------|---|
| 1 | PS 621 | ElQishawi, Rowan | Hoover High School | Rozan ElQishawi
Asian Lady Beetles...Infestation Or Curation!"A NoveStudy to Evaluate the Efficacy of Harmonia Axyridis Hemolymph as a Pesticide to Control Diaphorina Citri (Asian Citrus Psyllid), and as an Antibiotic |
|---|--------|-------------------------|--------------------|---|

Category**Place****Proj. No.****Name****School****Project Title**

- 2 PS 623 **Banker, Zena**
Wetumpka High School Freshwater not Frackwater:the Effect of Fracking on the Chlorophyll Content in Vigna unguiculata and the Survival of Freshwater Algae
- 3 PS 625 **Miller, Abigail**
Opelika High School Pumping Up With Iron: Biofortified Plants
- 3 PS 624 **Mones, Zistine Jubilly**
Murphy High School Piezo-Electro-Culture: Harnessing Controlled Piezoelectric Currents to Accelerate the Growth of Vigna radiata
- 3 PS 620 **Trifas, Maria**
Alabama School of Math and Science Seasonal Variations of the Physical Features and Chemical Properties of the Leaves of Live Oak
- 4 PS 622 **Bringham, Devon** **Eric Tran**
Stanhope Elmore High School Light Does the Spinach Good

Systems Software

- 1 SS 640 **Campbell, DeMarcus**
Alabama School of Fine Arts A Multi-Functional Algorithm for Audio Steganography
- 2 SS 641 **Atwood, Benjamin**
Alabama School of Fine Arts Using Hand Gestures for Alternative User Verification

Translational Medical Science

- 1 TM 660 **Lakhanpal, Arjun**
The Altamont school Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers
- 2 TM 661 **Willard, Spenser**
St. John Paul II Catholic High School Can Sensors Be Used to Measure Step Quality?