
2018 Alabama Science and Engineering Fair

Category Award Winners

Category

Place

Proj. No.

Name

School

Project Title

Junior Division

Behavioral & Social Sciences

1	BE	4	Hur, Grace Don't Talk to Me	Mill Creek Elementary School
2	BE	12	Vilardi, Julian Sleep Tight Don't Let the Blue Light Bite!	Wetumpka Middle School
3	BE	1	Alzyat, Saifaldeen The Music of Study	Islamic Academy of Alabama
3	BE	5	Koppineedi, Neharika Multitasking	Mill Creek Elementary School
3	BE	8	Lovassy, Charles Color: Now You See It, Now You Don't	Life Christian Academy
4	BE	2	Enfinger, Sara Visual VS Auditory Memory: Which Sense Make the Most Sense?	Lillian Morgan
4	BE	7	Laubenthal, Claire The Digital Vs. Paper War	Slocomb Middle School
				Holy Spirit Catholic High School

<u>Category</u>	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
4 BE	9	Mahdi, Salma Stroop Effect: ESL vs Native		Islamic Academy of Alabama
4 BE	10	Patin, Zoe The Age of Creativity		St. John the Baptist Catholic School
4 BE	11	Urrutia, Alexis Puppy Preference		Aubrey Heard
HM BE	3	Gunn, Mary Kate Technology: Help or Hurt?		Wacoochee Elementary School
HM BE	6	Lang, Aurora Snuggle Puppies: How Do Size and Number of Puppies Affect a Puppy's Ability to Stay Warm?		Summerdale Middle
				Rainbow Elementary School

Botany & Zoology

1 BZ	27	Henry, Brianna Aquaponic, Hydroponic vs. Soil Gardening		Oakwood Adventist Academy
2 BZ	20	Ai, Angela Will Strawberries Stay Fresher With a Meta Mucil Solution Coating?		Mill Creek Elementary School
3 BZ	21	Albea, Alexandra Slow Down Chow Time		Holy Spirit Catholic High School
3 BZ	22	Bowman, Hunter Bait vs. Lures		Hampton Cove Middle School

<u>Category</u>			
<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
<u>Project Title</u>			
3 BZ	26	Singley, Jules Nuttin' But Energy	Beverlye Magnet School
4 BZ	24	Mountain, Vaughan Filtering on the Green: Duckweed Water Filtration	Oakwood Adventist Academy
4 BZ	25	Perry, Clay Salty Cow	South Choctaw Academy
HM BZ	23	Johnson, Kaitlyn Operation Spice Rack	Horizon Elementary School

Chemistry

1 CH	37	Kung, Catherine To Eat or Not to Eat? An Investigation of the Effect of Natural Ingredients as Inhibitors on the Metabolism of Yeast	Holy Spirit Catholic High School
2 CH	41	Pilkinton, Hayden Glaze Color Change	Holy Spirit Catholic High School
3 CH	31	Baty, Morgan Stop Don't Drink That!	Hampton Cove Middle School
3 CH	44	Showers, Lilli Ann Oil B Gone	Harrand Creek Elementary
4 CH	32	Chiskowski, Abby Puffy Perfection	St. John the Baptist Catholic School

Category

Place	Proj. No.	Name	School
Project Title			
4 CH	40	Phillips, Laura Predictive Index of Cereal Sogginess (P.I.C.S)	Hampton Cove Middle School
4 CH	45	Vanterpool, Jasmy Can Garlic Extract Inhibit Bacterial Enzymes?	Oakwood Adventist Academy
4 CH	46	Whitehead, Victoria pH of Shampoo: How Does It Affect Hair?	Holy Spirit Catholic High School Rickel Washington
HM CH	30	Allen, Eric We Blue Your Mind	W.J.Christian
HM CH	33	Coleman, Mason Which Household Product Cleans More Effectively?	The Altamont School
HM CH	34	Forrester, Carl What Substance Melts Ice	Carver Magnet School
HM CH	35	Godwin, Samuel Effects of Acid Rain on Metals	Clark Shaw Magnet School of Math Science a
HM CH	36	Hall, Hadley The Effects of Acid on Teeth, Crowns, and Dentures	Shoals Christian School
HM CH	47	Key, Milan Which Beverage Produces the Most Gas and Does it the Quickest?	Muscle Shoals Middle School
HM CH	38	Lemke, AnnaBeth What Melts Ice the Fastest?	Hampton Cove Middle School

Category

Place	Proj. No.	Name	School
Project Title			
HM CH	39	Nasser, Amro Pans On Fire	Huffman Middle School
HM CH	42	Pinkston, David Meltdown: What Makes Ice Melt the Fastest?	Redland Elementary School
HM CH	43	Powers, Avery The Dirtiest Places in our School	Bailey Baker
			East Limestone High School

Engineering

1 N	110	Minnon, Luke Project R.O.H.U.S.S. (Remotely Operated Hydraulic Underwater Sediment Sampler)	Decatur Presbyterian Christian School
2 N	107	Jennings, Javon 4.5 Billion Meets the 21st Century: Harnessing Solar Energy with Modern Technology	Key Destiny Academy
3 N	103	Cheek, Oz More or Less?	Horizon Elementary School
3 N	108	Jordan, Riley The Fighting Falcon's Fan Blade...It'll Blow You Away	D.A. Smith Middle School
3 N	114	Tomlinson, William Get Your Fill	St. Joseph Regional Catholic School
4 N	105	Greer, Grace Three Factors Affecting the Voltage of a Wind Turbine	Auburn Junior High School

<u>Category</u>			
<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
		<u>Project Title</u>	
4 N	112	Samant, Rishab Cracking an Arch	
			Pizitz Middel School
HM N	100	Adams, Eli You Can't Go Wrong When You Go With Foam!	
			South Choctaw Academy
HM N	101	Ahmad, Arsalan Consumption Reduction	
			Islamic Academy of Alabama
HM N	102	Alzyat, Izaldeen Give The Earth A Break!	
			Islamic Academy of Alabama
HM N	52	Crocker, Drew The Gift of Lift	
			Rainbow Elementary School
HM N	104	Freestone, Julia Quieter Quadcopters	
			St. John the Baptist Catholic School
HM N	106	Herndon, Molly Does Weight Affect the Speed of a Zipline?	Ethan Brewer, Aid
			Heritage Elementary School
HM N	109	Key, Matthew What Floats Your Boat?	
			Smiths Station Junior High School
HM N	111	Mooney, Alex The Optimal Stud Distance	
			Home School
HM N	113	Sanders, Bronwyn Sneaky Figures	Urvi Mysore
			Heritage Elementary School

Category				
Place	Proj. No.	Name	School	
Project Title				
HM N	115	Wooten, Antoinette Water Filtration	Columbia Elementary School	
HM N	116	Young, Ethan Charging with Magnets	Duran North Junior High School	
Environmental				
1 E	67	Prabhakar, Ashwin Synthetic Enhancement of Photosynthesis	Discovery Middle School	
2 E	63	Percy, Abigail Reducing the Heat Island Effect	St. John the Baptist Catholic School	
3 E	54	Doppalapudi, Siddharth Effect of CO2 and Temperature on Aedes aegypti	The Altamont School	
3 E	55	Forbes, Louisa Fuel of the Future: Generating Biofuels from Local Invasive Plants	Clark Shaw Magnet School of Math Science a	
3 E	66	Poole, Gavin Water Purification Using Copper and Silver	Indian Springs School	
4 E	57	Gowder, Oviya Too Good To Waste	Heritage Elementary School	
4 E	61	Miller, Sarah Assessment of Water Contaminants Through Planaria Growth	The Altamont School	

Category

Place	Proj. No.	Name	School
Project Title			
4 E	68	Rand, Lewis Bioremediation of Different Types of Oil	
			The Altamont School
HM E	75	Adams, Peyton Going Green: Are Green Detergents Less Toxic Than Conventional	
			Patrician Academy
HM E	50	Ahmed, Sura Leaves as Pollution Markers	
			Islamic Academy of Alabama
HM E	51	Cornelius, Piper I Wet My Plants with Pollution	
			Horizon Elementary School
HM E	53	Diallo, Aisha Sunny Yummy	
			Islamic Academy of Alabama
HM E	56	Gorritz, Jayden Puerto Rico, Alabama and Atlanta: Which Water Has the Best Quality?	
			Horizon Elementary School
HM E	58	Jennings, Jordan The Quick Growing Grass: Using Bamboo to Replace Traditional Roofing Materials	
			Key Destiny Academy
HM E	59	Jones, Candice What's in Our Water?	
			Wacoochee Elementary School
HM E	60	McKinley, Andrew Keeping Your Cool	
			Beverlye Magnet School
HM E	62	Patil, Suhas Swimming in Acid	
			Clark Shaw Magnet School of Math Science a

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
HM E	64	Pilkinton, Alexander BITE! Do fish attractants really work?	Holy Spirit Catholic High School
HM E	65	Plant, Joellie Slip and Slide	South Choctaw Academy
HM E	69	Satheesh, Pranaav Ocean Temperature: How Does Plastic Affect It ?	Columbia Elementary School
HM E	70	Singireddy, Keerthan Which Filtration Material Leads to the Best Drinking Water?	Mill Creek Elementary School
HM E	72	Underwood, Mark Biofuels from Farm and Household Waste	Hilltop Montessori School
HM E	73	Wingate, Annie What Happened To All The Fish? (How Do Different Types of Fertilizer Affect the Acidity and Other Properties of Runoff Water?)	Admiral Thomas H. Moorer Middle School
HM E	74	Woodfin, Sam Feeding Earthworms: Do Different Diets Affect Their Growth and The Soil They Enrich	Holtville Middle School

Math & Computers

1 X	124	Naser, Talal Indirect Measurements II	Islamic Academy Of Alabama
2 X	122	Bui, Jacob Keeping It Cool	Holy Spirit Catholic High School

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
3 X	121	Bollinger, Michael Robert Does Charging 16 hours a Day Give Excess Energy Away?	
			Williams - Academy for Gifted and Talented
4 X	120	Balaji, Madhushalini Preventing Hot Car Deaths	
			Heritage Elementary School Mohammed Ashou
4 X	123	Jalloh, Samba Set Your Clocks	
			Islamic Academy of Alabama
4 X	126	Young, Janae The Life of pH Water	
			Clark Shaw Middle
HM X	125	Lopacki, William RFID Shielding	
			Holy Spirit Catholic High School

Medicine & Health Sciences

1 ME	91	Young, Maya Dish Washing Derby	
			Holy Spirit Catholic High School
2 ME	85	Murphree, Joshua Analysing DNA: A Cheaper Alternative to Proteinasek	
			Liberty Middle School
3 ME	80	Branscome, Sophia Horseback Heart Attack: Getting Fit on Horseback	
			AGT Williams
3 ME	82	Jasser, Ahmed Miracle Oils	
			Islamic Academy of Alabama

<u>Category</u>			
<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
<u>Project Title</u>			
4 ME	86	Orange, Samantha 5 Second Rule: Fact or Fiction	Harrand Creek Elementary
4 ME	88	Srivastava, Arnav Lipid Digestion? Does the Lipase Enzyme Affect te Rate of Lipid Hydrolysis?	East Samford School
HM ME	81	Jabr, Lina SmartMeds	Islamic Academy of Alabama
HM ME	83	Kleinhoffer, Cheyanne Alkaline Water and Health: Testing the pH oD drinking Waters	Opelika Middle School
HM ME	84	Lovett, Parker Do Essential Oils Prevent Bacteria Growth?	Shoals Christian School
HM ME	87	Prerost, Vivianne What Smells?	Phillips Preparatory School
HM ME	89	Thole, Clayton Blocking the Signal	Broad Church Academy
HM ME	90	Worley, Ashton Thumbprint Genetics	Horizon Elementary School

Physical Science

1 Z	142	Mewes, Marie Insulation: A Cool Way to Stay Warm	Holy Spirit Catholic High School
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Category

Place	Proj. No.	Name	School
Project Title			
2 Z	132	Cress, AnnaBekah Fiber Optic Communications	
			Libertas
3 Z	146	Piner, Jenna Marie The Effect of Temperature on Growing Crystals	
			Home School
4 Z	130	Ata, Muhammad Saad What A Blast!	
			Hampton Cove Middle School
HM Z	133	Detwiler, Evelyn Wireless Power Transmission Using Photons	
			St. John the Baptist Catholic School
HM Z	134	Ellenburg, Zachary Bottle Rockets	
			Columbia Elementary School
HM Z	135	Generally, Jack Going Graphite	
			W.J. Christian
HM Z	136	Gomez, Nelsy Burning Calories	
			Holy Spirit Catholic High School
HM Z	150	Herrmann, Kaleb Chladni Patterns	
			Muscle Shoals Middle School
HM Z	137	Johnson, Nathan Burning Rubber	
			Heritage Elementary School
HM Z	138	Jones, McLeod Which BB Packs the Most Punch?	
			Mill Creek Elementary School

<u>Category</u>	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
HM Z	139	Martinez, Naima Rust,Rust go away		Harrand Creek Elementary
HM Z	140	Marx, Daniel Spinal Decompression Throughout the Diurnal Cycle		St. John the Baptist Catholic School
HM Z	141	Mehta, Harshil Increasing the Distance of Wireless Energy Transfer for Potential Use in Future Technology		Indian Springs School
HM Z	143	Moro, Jonah Thermal Colors		Rainbow Elementary School
HM Z	144	Nix, Evan Wi-Fi		Patrician Academy
HM Z	145	Patel, Rima Moon Measuring		Beverlye Magnet School
HM Z	147	Revera, Jack Tracking Asteroids		Horizon Elementary School
HM Z	148	Ryan, Hunter Wind At Work		Phillips Preparatory School
HM Z	149	Tuggle, Marissa Seeking Solace in a Noisy Home		Columbia Elementary School

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

**Senior Division
Animal Science**

- 1 AS 200 **Crawford, Gabriel**
Utilizing Gene Markers to Explore Climate Change Impact on
Caenorhabditis elegans Aging
Alabama School of Mathematics and Science
- 2 AS 201 **Wu, Janina**
Dietary Sugars Affect Colonization of Cavity Causing Bacteria in
Fruit Flies
Indian Springs School
- 3 AS 202 **Scopolites, Deanna**
Does the Oceans pH Effect the Crassostrea Virginica Population?
Murphy High School

Behavioral & Social Sciences

- 1 BE 218 **McFeely, Alexis**
Assessment of Fall Risk Associated with High-Heeled Footwear
Utilizing Computerized Dynamic Posturography: A Two-Phase Study
St. John Paul II Catholic High School
- 2 BE 213 **Fan, Amy**
The Effect of Sleep on Academic Performance in High School Juniors
Auburn High School
- 3 BE 211 **Carnes, Sommer**
Music and Memorization Relations
Jefferson County International Baccalaureate
- 3 BE 215 **Gresham, Elizabeth**
Peer Group Influences on High School Girls' Interest in STEM
Alabama School of Fine Arts
- 3 BE 219 **Petersen, Kate**
The Power of Contrast
St. John Paul II Catholic High School
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<u>Category</u>	<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
4 BE	210	Barber, Elizabeth Pictures in Passing		Shoals Christian School
4 BE	212	Duren, Chloe A Game of He Said She Said		Murphy High School
4 BE	214	Finnegan, Aisling Caffeine and Sugar Vs. Focus		Murphy High School
4 BE	217	Langhinrichsen-Rohling, Ryan Is it all in your head?		Murphy High School
4 BE	223	Schmidt, Courtney Which Gender has the Better Short Term Memory		Murphy High School Taylor Riepe
HM BE	216	Jenkins, Eleanor The Ranschburg Effect		Central High School
HM BE	220	Plump, Shaniya Stay Woke		St. John Paul II Catholic High School
HM BE	222	Rogers, Christopher Simon Says: A Psychological Experiment of Memory		Ramsay High School
				Central High School
Biochemistry				
1 BI	250	Blacksher, Kelly The Ocean Acidification Problem		W.P Davidson High School

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u> <u>Project Title</u>	<u>School</u>
2 BI	251	Ejantkar, Suma NovelCloud Seeding Method Using Bacterial Ice Nucleators with Regionalized pH Influence	Jiho Lee Auburn High School
3 BI	252	Singhal, Aditya Trichophyton Germination Prevention Using C-AA (A Homogeneous Mixture of Plant-Derived Stearic Acids and Paraffin Triglyceride) Including Attrition and Asphyxiation	James Clemens High School
3 BI	254	Vanterpool, Jayden Can Nanoparticles Prevent Staphylococcus aureus-induced Apoptosis in Endothelial Cells? Part 3	Oakwood Adventist Academy
4 BI	253	Turner, Caroline Bacteria in Makeup	Shoals Christian School

Biomedical & Health Sciences / Translational Medical Science

1 BHTM	242	Madrid, Arielle Does Flossing Decrease the Amount of Aerobic Oral Bacteria?	Oakwood Adventist Academy
2 BHTM	240	Cassady, Maya The Effect of Flow Rate, Media, and Maturation on Esophageal Stimulus Induced Upper Aerodigestive Reflexes in Infants with Bronchopulmonary Dysplasia	Indian Springs School
3 BHTM	243	Pritchard, Alexandra Exosomes and Macrophage Polarization in Lung Cancer	The Altamont School
3 BHTM	244	Sawyer, Hanna Which Household Solvents Erode The Enamel Off Your Teeth The Fastest?	Laynee Uργο Central Freshman Academy
4 BHTM	245	Stamp, Banks Using the Specificity of Bacteriophage Against Antibiotic-Resistant Bacteria to Find Alternative Therapeutic Medical Treatments and Diagnostics	Central High School

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

HM BHTM 241 **Fu, Richard**
The Ketogenic Diet Promotes the Therapeutic Efficacy of Anti-PD-1
Therapy in Melanoma

Vestavia Hills High School

Biomedical Engineering / Computational Biology and Bioinformatics

1 BECB 230 **Kacker, Viraj**
Computational Investigation of Protein Diffusion on the Golgi
Apparatus

Jefferson County International Baccalaureate

2 BECB 232 **Riggs, Sharee**
Food for the Future: A Study of Insects as Global Food Security

Wetumpka High School

3 BECB 231 **Lakhanpal, Amrita**
Computational Analyses to Identify Genes Disproportionately
Affected by NFKBIA Deletions and Implicated in Breast Cancer and
Glioblastoma Tumorigenesis

The Altamont School

3 BECB 234 **Riccio, Cannon**
Adjustable Affordable Leg Brace

Long Nguyen, Etha

3 BECB 233 **Sturgis, Caroline**
Modeling an Artificial Pancreas

Hewitt Trussville High School

St. John Paul II Catholic High School

Cellular & Molecular Biology / Microbiology

1 CBMI 263 **Robinson, Reed**
Investigating Heat Exposure on Transgenerational Inheritance in *C.*
elegans

Alabama School of Mathematics and Science

2 CBMI 261 **Patel, Jenil**
Capsaicin's Cytotoxicity on MF-7 Estrogen Positive Breast Cancer
Cells

Kendrick Yu

James Clemens High School

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

3 CBMI 260 **Kloske, Alexa**
Impact of Light Starvation on Nannochloropsis Growth

St. John Paul II Catholic High School

3 CBMI 262 **Rana, Myra**
Association Between CRISPR Phage DNA in Streptococcus mutans
and Caries

Alabama School of Fine Arts

Chemistry

1 CH 270 **Forbes, Madeleine**
The Synthesis and Testing of Potent Yet Selective Inhibitors of
Protein Phosphatase 5

W.P. Davidson High School

2 CH 271 **Lee, Jaeyoung**
Efficiency of Different Metal Oxides at Blocking Out UV Rays in
Sunscreen

Auburn Junior High School

3 CH 277 **Pant, Aniket**
Optical Studies of Nanostructures for Biosensing Applications

Jefferson County International Baccalaureate

4 CH 273 **Mickle, Brody**
Periodicity of Enthalpy Change

Jefferson County International Baccalaureate

HM CH 272 **Mathews, Rebecca**
UV Defense: What Type of Sunscreen is Most Effective?

St. John Paul II Catholic High School

HM CH 274 **Middleton, Dominik**
Which Sandwich Bag Can Best Withstand a Chemical Explosion?

Oakwood Adventist Academy

HM CH 275 **Moore, Hailey**
Bleach Bombs

St. John Paul II Catholic High School

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

HM CH

276

Odom, Cecily

Concentration of Ascorbic Acid Using Redox Titration

W.P. Davidson High School

Earth & Environmental Sciences

1 EA

284

Lange, Noel

Development of Innovative Strategies to Protect the Aquatic Environment from Household Plastic Microfibers

Auburn High School

2 EA

288

Siggers, Vanessa

Not So Slick: Constructing a Microholed Device for Oil Spill Absorption and Storage and Testing its Remediation Abilities on Oils of Varying Viscosities

Murphy High School

3 EA

286

Oh, Janna

Silver Nanoparticle-Based Active Food Packaging

Auburn High School

3 EA

287

Pinkston, Emily

The Impact of Hurricanes on the Composition of Rainwater and Topsoil

Wetumpka High School

3 EA

289

Van Winkle, Sarah

Assessing Nutrient & Trace Metal Variation in Surface Water of the Mobile Bay Watershed

Alabama School of Mathematics and Science

4 EA

280

Chambers, Analise

Carbon Dioxide Removal in Coniferous and Deciduous Trees

Jefferson County International Baccalaureate

4 EA

282

Gonzalez Mota, Miguel

The Effect Of Burnt Motor Oil On The Well-Being Of Cynodon dactylon, And Absorber As A Potential Way to Waive The Effect

Jefferson County International Baccalaureate

4 EA

283

Kim, Benjamin

The Effect of Different Types of Water (Distilled, Salt, Flood)on the Germination Rates of Brassica rapa

Jefferson County International Baccalaureate

Category

<u>Place</u>	<u>Proj. No.</u>	<u>Name</u>	<u>School</u>
		Project Title	
4 EA	290	Williams, Madison Go Green or Convene: The Effect of "Green" and Conventional Laundry Detergents on Earthworm Populations	Central High School
HM EA	281	Fennimore, Jacob Building a Solar Heated House	St. John Paul II Catholic High School
HM EA	285	Legg, Emily Slip-Slidin' Away (Water Induced Soil Erosion)	Elmore County High School

Embedded Systems / Systems Software

1 ESSS	330	Callen, Jared Developing an Efficient Solution to Personal Computer Security	Wetumpka High School
2 ESSS	335	Xiao, Kevin Background Noise Reduction By Using Spectral Selection To Remove Unneeded Frequencies	Alabama School of Mathematics and Science
3 ESSS	334	Willard, Spenser Does Increasing the Speed of the OODA Loop Increase Survival?	St. John Paul II Catholic High School
4 ESSS	331	Coggins, Emily Blind Spot Detection Device	Vraj Patel
HM ESSS	332	Guo, Sophie Ultra-Sensitive Cardiac Biomarker Detection Using Gold Nanocavity Localized Plasmon Resonance for Early and Rapid Diagnosis of Myocardial Infarction	Trussville City School
HM ESSS	333	Werkheiser, Madison Application of 3-D Printed Capacitive Touch Sensors to Track Liquid Consumption	James Clemens High School
			James Clemens High School

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Energy: Chemical / Energy: Physical

1	ECEP	301	Feagans, Nathan P.E.E.P.S	Andrew Kinzer, H Hewitt Trussville High School
2	ECEP	302	Mansour, Ashraf Energy Harvesting from Radio Waves	 Auburn High School
3	ECEP	300	Brown, Dustin Slowing Down the Burn Speed of Gasoline	 Mary G Montgomery High School

Engineering: Mechanics

1	EM	324	Lynn, Lucas The Hexagonal Weave: Using Hexagonal Engineering to Create a Better Body Armor	 Wetumpka High School
2	EM	326	Noh, Brayden Biomechanical Effect of a Novel Designed Passive Knee Exoskeleton for Human Augmentation	 Auburn High School
3	EM	320	Davis, Jeremiah How Does the Diameter of a Solid Rocket Motor Nozzle Affect It's Thrust and Burn Duration?	 Oakwood Adventist Academy
3	EM	328	Hayes, Christian Magnetic Effects	 Bessemer Academy
4	EM	323	Hayes, Jacob Sanitary Drink Lid Dispenser	Joseph Seagle, J Hewitt Trussville High School

Category

Place	Proj. No.	Name	School
Project Title			
4 EM	325	Murrell, David Braking the Long Board	Ian Knapp, Michael Hewitt Trussville High School
HM EM	321	Edmonds, Nicholas The Strength of Concrete	 Shoals Christian School
HM EM	322	Forbes, Alex Intracranial Pressure Monitoring and Patient Comfort	 Indian Springs School

Environmental Engineering

1 EE	310	Hodgson, Emily Goo-Be-Gone	 St. John Paul II Catholic High School
2 EE	311	Mendoza, Sarai Light 'Em Up! Using a Microbial Fuel Cell to Create Electricity	 St. John Paul II Catholic High School

Materials Science

1 MS	350	Davis, Benjamin Can Pistachio Shells Be Used To Improve Composite Strength?	 Auburn Junior High School
2 MS	351	Sridhar, Nikitha Porous Materials Can Provide Noise Insulation Properties for Barriers and Headsets	 Auburn High School

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

Mathematics

1 MA 340 **Parson, Quen**
Determining Necessity of Optimization in Matrix Chain Multiplication

Alabama School of Fine Arts

Physics & Astronomy

1 PH 361 **Jouve, Mary Alice**
Kepler-Keck, Double-Check: Confirming Kepler Exoplanet
Candidates Using Keck Radial Velocity Data

McGill-Toolen Catholic High School

2 PH 365 **Summerlin, Emilia**
Concordant Copper!

St. John Paul II Catholic High School

3 PH 362 **Larkin, Sydney**
Pitch Perfect: The Best Foot Placement for the Perfect Pitch

Lane Thaxton, Sav

Central Freshman Academy

3 PH 363 **Meyer, Maria**
Constructive and Destructive Interferences in Sound Waves

East Limestone High School

3 PH 364 **Sharp, Emily**
Natural Thermal Insulation

East Limestone High

4 PH 360 **Boone, Katie**
Inflating the Game Ball

Murphy High School

4 PH 374 **Wright, Deven**
Bounciness of a Golf Balls

Ramsey High School

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

Plant Sciences

- 1 PS 370 **Arnston, Matthew**
Increasing the Lipid Content of Chlorella Algae with Aquatic Plants
St. John Paul II Catholic High School
- 2 PS 373 **Srivastava, Sejal**
Plant Growth-Promoting Rhizobacteria as Antibiotics and Antifungals
for Phytopathogens
Auburn High School
- 3 PS 371 **McCormick, Alexander**
Slow or Flow
St. John Paul II Catholic High School
- 3 PS 372 **Poston, Ella Joyce**
Chlorantraniliprole Effects on Corn Seed Germination - Part 2
Covenant Christian Academy

Robotics and Intelligent Machines

- 1 RI 380 **Dennis, John**
A Novel Robotic Fire Extinguishing Device Utilizing Machine Vision
for Flame Detection
Wetumpka High School
- 2 RI 381 **Hall, Claude**
Simulation of Modes in Matlab and Simulink
W.P. Davidson High School
- 3 RI 382 **Patin, Remy**
Motorized Madness
St. John Paul II Catholic High School