2016 ALABAMA SCIENCE ENGINEERING FAIR
Special Award Winners

Award: Alabama Geological Society

Junior Division

Participant: Labdhi Mehta
Project Cat. and No.: CH 61 Kick As (Out of Water)
Place: **1**
Indian Springs School Grade: 8

Participant: Joshua Murphree
Project Cat. and No.: E 114 Big Rocks First: Does the Order of Filtration Materials Really Matter?
Place: **2**
Columbia Elementary School Grade: 6

Participant: Kate Owen
Project Cat. and No.: E 117 How to Wash Your Water
Place: **3**
Columbia Elementary School Grade: 5

Senior Division

Participant: Zena Banker
Project Cat. and No.: PS 623 Freshwater not Frackwater:the Effect of Fracking on the Chlorophyll Content in Vigna unguiculata and the Survival of Freshwater Algae
Place: **1**
Wetumpka High School Grade: 12

Participant: Abigail Knight
Project Cat. and No.: EE 534 The Removal of Arsenic (III) from Contaminated Groundwater in Developing Countries
Place: **2**
Hewitt-Trussville High School Grade: 12

Participant: Ernald Jules Aloria Emily Pinkston
Project Cat. and No.: CB 380 The Effects of Ocean Acidification on Marine Life
Place: **3**
Wetumpka High School Grade: 12

Award: Alabama Modeling and Simulation Council

Junior Division

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Participant: Elena Tetrault

Project Cat. and No.: N 93 From Robotics to the Google Car: How to Navigate Through the World

Place: **2**

Hampton Cove Middle School Grade: 7

Participant: Ashwin Prabhakar

Project Cat. and No.: Z 197 Colorful Candies Hide Their True Colors

Place: **3**

Rainbow Elementary School Grade: 5

Senior Division

Participant: David Walker

Project Cat. and No.: MA 551 The Theseus Encryption

Place: **1**

Decatur High School Grade: 9

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **2**

South Montgomery County Academy Grade: 12

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **3**

Alabama School of Fine Arts Grade: 12

Award: Alpha Kappa Alpha - Epsilon Gamma Omega Chapter, Math & Science Committee

Junior Division

Participant: Xavier Murphy

Project Cat. and No.: CH 53 Can the Life Span of a Bubble Be Extended in Different Temperatures and Atmospheric Conditions?

Place: **1**

Oakwood Adventist Academy Grade: 7

Participant: Brian Dublin

Project Cat. and No.: E 110 "Which Wind Turbine Best Harness Wind?"

Place: **2**

Oakwood Adventisit Academy Grade: 8

Participant: Mya Smith

Project Cat. and No.: CH 67 What Melts Ice Fastest?

Place: **3**

Muscle Shoals Middle School Grade: 6

Senior Division

Participant: Maryssa Craig

Project Cat. and No.: CH 408 Which Moisturizer Works Best?

Place: **1**

Holy Spirit Catholic High School Grade: 9

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **2**

Alabama School of Fine Arts Grade: 12

Participant: Charles Wallington

Project Cat. and No.: PH 602 How Do You Use a Laser Pointer to Measure Space on CDs?

Place: **3**

Oakwood Adventist Academy Grade: 11

Award: American Association of University Women

Senior Division

Participant: Briganna Abernathy

Project Cat. and No.: EA 423 The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Award: American Chemical Society - The North Alabama Chapter

Junior Division

Participant: Jayden Vanterpool

Project Cat. and No.: CH 52 Can Silver Decrease Bacterial Enzyme Function?

Place: **1**

Oakwood Adventist Academy Grade: 7

Participant: Suneeti Chambers

Project Cat. and No.: CH 66 Vitamin C: Is It Just From Oranges?

Place: **2**

The Altamont School Grade: 8

Participant: Catherine Blevins

Project Cat. and No.: CH 62 Radiation in My Room

Place: **3**

Decatur Presbyterian Church School Grade: 8

Participant: Xavier Murphy

Project Cat. and No.: CH 53 Can the Life Span of a Bubble Be Extended in Different Temperatures and Atmospheric Conditions?

Place: **4**

Oakwood Adventist Academy Grade: 7

Senior Division

Participant: Daniel Vogler

Project Cat. and No.: CH 406 The Wetting Properties of Metallic Substrates Modified with Organic Self-Assembling Monolayers

Place: **1**

James Clemens High School Grade: 11

Participant: Davina Ho

Project Cat. and No.: CH 404 The Effects of Catalysts in the Depolymerization of Chitin Using Ionic Liquids

Place: **2**

Murphy High School Grade: 11

Participant: Maya Padmalayam

Project Cat. and No.: CH 402 Focused Ultrasound-Mediated Targeted Delivery of Polymer-Encapsulated Drugs: A Novel Therapeutic Strategy for Cancer

Place: **3**

Alabama School of Fine Arts Grade: 12

Participant: Varsha Sridhar

Project Cat. and No.: CH 403 The Determination and Bioremediation of Potential Carcinogens, Bisphenol A (BPA) and Bisphenol S (BPS)

Place: **4**

Jefferson County International Baccalaureate School Grade: 11

Award: American Institute of Aeronautics and Astronautics

Junior Division

Participant: Sydney Hamilton

Project Cat. and No.: N 89 Impact of Wind Turbine Design on Its Performance

Place: **1**

JF Drake Middle School Grade: 6

Senior Division

Participant: Adam He

Project Cat. and No.: PH 604 Investigation of the Orbital Stability of Circumbinary Planets in the Habitable Zone of the Double-Star System Kepler-16

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Award: American Meteorological Society

Junior Division

Participant: Samba Jalloh
Project Cat. and No.: N 85 Destruction
Place: **1**
Islamic Academy of Alabama Grade: 6

Participant: Jade Madison
Project Cat. and No.: E 118 In The Zone
Place: **1**
Clark-Shaw Magnet School Grade: 8

Participant: Jackson Stapleton
Project Cat. and No.: E 116 Farmers Meet Drones
Place: **1**
East Limestone Middle School Grade: 8

Senior Division

Participant: Marcus Bush Brenden O'Keefe
Project Cat. and No.: EP 480 A Cool Way To Make Electricity
Place: **1**
Stanhope Elmore High School Grade: 12

Participant: Mary Alice Jouve
Project Cat. and No.: PH 600 "Clear Sky at Night, Astronomer's Delight": An Analysis of Skyglow(Mobile, AL & Miramar Beach, FL)
Place: **1**
McGill-Toolen Catholic High School Grade: 9

Participant: Mamecheikh Ka
Project Cat. and No.: PH 606 To Warm A Planet
Place: **1**
Auburn Junior High Grade: 9

Award: American Physical Society

Junior Division

Participant: Catherine Blevins

Project Cat. and No.: CH 62 Radiation in My Room

Place: **1**

Decatur Presbyterian Church School Grade: 8

Senior Division

Participant: Michael McGinnis

Project Cat. and No.: PH 601 Growth and Measurement of Ices Depending on Input Flow Rates of Nitrogen Gas for Application in Terahertz Spectroscopy of Interstellar Ices

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Award: American Psychological Association

Junior Division

Participant: Haripriya Mantraratnam

Project Cat. and No.: BE 9 The Stroop Effect: Words or Shapes?

Place: **1**

Mill Creek Elementary School Grade: 6

Senior Division

Participant: William Locker

Project Cat. and No.: BE 322 College Students' Attitudes Toward Political Candidates: The Effect of Gender

Place: **1**

Murphy High School Grade: 9

Award: American Society of Microbiology

Junior Division

Participant: Sejal Srivastava

Project Cat. and No.: ME 162 Analyzing Alternative Approaches for Testing E. coli in Water in Support of the Food Safety Modernization Act's Produce Safety Rule

Place: **1**

Auburn Junior High School Grade: 8

Senior Division

Participant: Mitchell McFeely

Project Cat. and No.: MI 571 Analysis of Cell Phone Bacterial Load Reduction and the Effect of Educational Information on Future Behavior: A Multiphase Study

Place: **1**

St. John Paul II Catholic High School Grade: 10

Award: Arizona State University - Walton Sustainability Solutions Initiatives

Senior Division

Participant: Rahul Lall

Project Cat. and No.: EM 504 Prognostication of Flexible Batteries in Wearable Electronics

Place: **1**

Auburn High School Grade: 11

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School Grade: 12

Award: Armed Forces Communications and Electronics Association (AFCEA) Educational Foundation

Junior Division

Participant: Nina Hubbard

Project Cat. and No.: X 148 Huffman Coding

Place: **1**

Hampton Cove Middle School Grade: 6

Participant: Elena Tetrault

Project Cat. and No.: N 93 From Robotics to the Google Car: How to Navigate Through the World

Place: **1**

Hampton Cove Middle School Grade: 7

Senior Division

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Thuan Tran Christain Golding

Project Cat. and No.: EM 501 Save the Turtles

Place: **1**

Hewitt-Trussville High School Grade: 12

Award: ASEF Directors Award, UA Huntsville

Senior Division

Participant: Alexis Jones

Project Cat. and No.: BI 342 Assessment of Macro and Micronutrients in a Recycled Supplement for Canines

Place: **1**

Auburn High School Grade: 10

Participant: Mary Alice Jouve

Project Cat. and No.: PH 600 "Clear Sky at Night, Astronomer's Delight": An Analysis of Skyglow(Mobile, AL & Miramar Beach, FL)

Place: **1**

McGill-Toolen Catholic High School Grade: 9

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School Grade: 12

Award: ASM Materials Education Foundation

Senior Division

Participant: Kenneth Good

Project Cat. and No.: PH 605 Practically Invisible Using Metamaterials

Place: **1**

Columbia High School Grade: 12

Participant: Davina Ho

Project Cat. and No.: CH 404 The Effects of Catalysts in the Depolymerization of Chitin Using Ionic Liquids

Place: **1**

Murphy High School Grade: 11

Award: Association for Women Geoscientists

Senior Division

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School Grade: 12

Participant: Brooklyn Massey

Project Cat. and No.: EA 422 The Effects of Hormones on Aquatic Life and How They Alter Gender Patterns

Place: **1**

Davidson High School Grade: 10

Award: Association of Energy Engineers (AEE)

Junior Division

Participant: William Ashley

Project Cat. and No.: N 86 Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"

Place: **1**

Cornerstone Christian Academy Grade: 8

Participant: Julia Goldberg

Project Cat. and No.: E 120 M&M's

Place: **1**

Indian Springs School Grade: 8

Senior Division

Participant: Noel Lange

Project Cat. and No.: EE 531 Kinetic Evaluation of Metal Modified Non-Woven Cotton Fibers Capable of Removing Sulfur Dioxide

Place: **1**

Auburn Junior High School Grade: 9

Participant: Nolan Lenard

Project Cat. and No.: EP 484 Maximizing The Efficiency of Dye-Sensitized Solar Cells

Place: **1**

W.P. Davidson High School Grade: 11

Participant: Bela Patel

Project Cat. and No.: EC 462 Emerging Energy of the Future

Place: **1**

Indian Springs School Grade: 10

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **1**

South Montgomery County Academy Grade: 12

Award: BioGENEius Challenge

Senior Division

Participant: Davina Ho

Project Cat. and No.: CH 404 — The Effects of Catalysts in the Depolymerization of Chitin Using Ionic Liquids

Place: **1**

Murphy High School — Grade: 11

Participant: Noel Lange

Project Cat. and No.: EE 531 — Kinetic Evaluation of Metal Modified Non-Woven Cotton Fibers Capable of Removing Sulfur Dioxide

Place: **1**

Auburn Junior High School — Grade: 9

Participant: Megan Lange

Project Cat. and No.: EE 533 — Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School — Grade: 12

Participant: Kelly Nguyen

Project Cat. and No.: CH 409 — The Effects of pH on Lead Testing

Place: **1**

W.P. Davidson High School — Grade: 10

Award: Boeing Company

Junior Division

Participant: Addison Barrow
Project Cat. and No.: ME 167 Don't Fry Your Brain
Place: **1**
Clark-Shaw Magnet School Grade: 7

Participant: Brian Dublin
Project Cat. and No.: E 110 "Which Wind Turbine Best Harness Wind?"
Place: **1**
Oakwood Adventisit Academy Grade: 8

Participant: Shurooq Elbahrawi
Project Cat. and No.: BZ 22 Eni Mini Miny Mo Where Does The Myoglobin Go?
Place: **1**
Islamic Academy of Alabama Grade: 7

Participant: Sydney Hamilton
Project Cat. and No.: N 89 Impact of Wind Turbine Design on Its Performance
Place: **1**
JF Drake Middle School Grade: 6

Participant: Jordan Reynolds-Gleason
Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?
Place: **1**
Grace Lutheran School Grade: 8

Participant: Callie Scroggins
Project Cat. and No.: BE 2 Another Rewarding Experience- A Two-Year Study -
Place: **1**
Mill Creek Elementary School Grade: 6

Participant: Jayden Vanterpool
Project Cat. and No.: CH 52 Can Silver Decrease Bacterial Enzyme Function?
Place: **1**
Oakwood Adventist Academy Grade: 7

Participant: Maaz Zuberi
Project Cat. and No.: X 146 The Health Effects of Technology
Place: **1**
The Altamont School Grade: 7

Senior Division

Participant: Briganna Abernathy

Project Cat. and No.: EA 423 The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Ansley Chaplin

Project Cat. and No.: AS 305 The Effect of Salinity on the Filtration Function of Oysters

Place: **1**

W.H. Davidson High School Grade: 11

Participant: Adam He

Project Cat. and No.: PH 604 Investigation of the Orbital Stability of Circumbinary Planets in the Habitable Zone of the Double-Star System Kepler-16

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Davina Ho

Project Cat. and No.: CH 404 The Effects of Catalysts in the Depolymerization of Chitin Using Ionic Liquids

Place: **1**

Murphy High School Grade: 11

Participant: Alexis Jones

Project Cat. and No.: BI 342 Assessment of Macro and Micronutrients in a Recycled Supplement for Canines

Place: **1**

Auburn High School Grade: 10

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Alena Kim

Project Cat. and No.: MA 550 The Astroid Survey Problem

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Abigail Knight

Project Cat. and No.: EE 534 The Removal of Arsenic (III) from Contaminated Groundwater in Developing Countries

Place: **1**

Hewitt-Trussville High School Grade: 12

Participant: Nolan Lenard

Project Cat. and No.: EP 484 Maximizing The Efficiency of Dye-Sensitized Solar Cells

Place: **1**

W.P. Davidson High School Grade: 11

Participant: Jamie Lim

Project Cat. and No.: CB 381 Cellular and Molecular Analysis of Allicin's Effect on Leukemia Cells

Place: **1**

Murphy High School Grade: 10

Participant: Lucas Lynn

Project Cat. and No.: EM 505 Shear Radial Strength: Using Web Geometry to Create a Better Body Armor

Place: **1**

Wetumpka High School Grade: 10

Participant: Rupa Palanki

Project Cat. and No.: EC 460 Analysis of Glycerol Reactor to Produce Hydrogen for Fuel Cell Applications

Place: **1**

W.P. Davidson High School Grade: 11

Participant: Om Patel

Project Cat. and No.: BH 364 Basal and Maximal Oxygen Consumption Rates Of Human Umbilical Venous Endothelial Cells (HUVEC) Are Decreased In Infants Who Die or Develop Bronchopulmonary Dysplasia (BPD)

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Soha Rasool

Project Cat. and No.: MI 573 The Effects of Synthetic Chemicals on Staphylococcus Epidermidis

Place: **1**

Alabama School of Fine Arts Grade: 10

Participant: Maria Trifas

Project Cat. and No.: PS 620 Seasonal Variations of the Physical Features and Chemical Properties of the Leaves of Live Oak

Place: **1**

Alabama School of Math and Science Grade: 11

Participant: Katherine Welch

Project Cat. and No.: BE 330 Reliability of Memory Recall

Place: **1**

St. John Paul II Catholic High School Grade: 10

Participant: Spenser Willard

Project Cat. and No.: TM 661 Can Sensors Be Used to Measure Step Quality?

Place: **1**

St. John Paul II Catholic High School Grade: 9

Award: Boeing Engineers Award

Junior Division

Participant: Trisha Agrawal

Project Cat. and No.: X 142 Electronic Eyes for the Blind

Place: **1**

Phillips Preparatory School Grade: 8

Participant: William Ashley

Project Cat. and No.: N 86 Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"

Place: **1**

Cornerstone Christian Academy Grade: 8

Participant: Ella Burch

Project Cat. and No.: BE 15 Detecting Political Lies

Place: **1**

Hampton Cove Middle School Grade: 8

Participant: Sophia MacDonald

Project Cat. and No.: N 87 Electric Waves

Place: **1**

Clark-Shaw Magnet School Grade: 7

Participant: Gabriella Smith

Project Cat. and No.: BZ 21 Doggy Drool vs Human Spit Part 2

Place: **1**

Hampton Cove Middle School Grade: 7

Senior Division

Participant: Skandan Ananthasekar

Project Cat. and No.: MI 572 Bacterial Profile of Various Illnesses in Order to Determine Distinct Bacterium

Place: **1**

St. Paul's Episcopal School Grade: 11

Participant: Rohan Badve

Project Cat. and No.: BH 368 Natural Oils Protect Human Skin Cells Against Harmful UVB Radiation: Effective as Sunscreen Agents

Place: **1**

W.P. Davidson High School Grade: 10

Participant: Hannah Cowart

Project Cat. and No.: BE 327 The Effect of Verbal Suggestion on Concentration Levels

Place: **1**

Jefferson County International Baccalaureate School Grade: 9

Participant: Arjun Lakhanpal

Project Cat. and No.: TM 660 Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers

Place: **1**

The Altamont school Grade: 11

Participant: Danika Louw

Project Cat. and No.: EM 503 Highly Effective Hybrids

Place: **1**

Holy Spirit Catholic High School Grade: 11

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **1**

South Montgomery County Academy Grade: 12

Award: Boeing SLS Award

Senior Division

Participant: Alena Kim

Project Cat. and No.: MA 550 The Astroid Survey Problem

Place: **1**

Alabama School of Fine Arts Grade: 12

Award: Broadcom Masters

Junior Division

Participant: Addison Barrow
Project Cat. and No.: ME 167 Don't Fry Your Brain
Place: **1**
Clark-Shaw Magnet School Grade: 7

Participant: Brooke Bassett
Project Cat. and No.: BZ 30 Munch Madness
Place: **1**
Holy Spirit Catholic High School Grade: 8

Participant: Catherine Blevins
Project Cat. and No.: CH 62 Radiation in My Room
Place: **1**
Decatur Presbyterian Church School Grade: 8

Participant: John David Haws
Project Cat. and No.: BE 6 Linked: The Correlation Between Creativity and Stress
Place: **1**
Indian Springs School Grade: 8

Participant: Emma Lamb
Project Cat. and No.: CH 54 Casein Plastic: Finding the Best Milk and Acid Combination
Place: **1**
Heritage Elementary School Grade: 6

Participant: Mary Katherine Lee
Project Cat. and No.: BE 4 Can you Picture what I can Remember?
Place: **1**
Holy Spirit Catholic High School Grade: 7

Participant: Sophia MacDonald
Project Cat. and No.: N 87 Electric Waves
Place: **1**
Clark-Shaw Magnet School Grade: 7

Participant: Jade Madison
Project Cat. and No.: E 118 In The Zone
Place: **1**
Clark-Shaw Magnet School Grade: 8

Participant: Miranda Martin

Project Cat. and No.: X 145 RFID - The Bells Toll for Thee

Place: **1**

Montevallo Middle School Grade: 8

Participant: Akanksha Rawat

Project Cat. and No.: ME 168 Herbs vs. Antacids

Place: **1**

Clark-Shaw Magnet School Grade: 8

Participant: Spencer Sanderson

Project Cat. and No.: BZ 28 Liquid vs Granular: The Great Fertilizer Debate

Place: **1**

Mill Creek Elementary School Grade: 6

Participant: Jacob Spence Zachary Tribble

Project Cat. and No.: Z 190 Keepin' It Cool

Place: **1**

East Limestone Middle School Grade: 8

Participant: Benjamin Standaert

Project Cat. and No.: N 83 Can You Find Your Book?

Place: **1**

Indian Springs School Grade: 8

Participant: Jackson Stapleton

Project Cat. and No.: E 116 Farmers Meet Drones

Place: **1**

East Limestone Middle School Grade: 8

Participant: Naomi VanHouten

Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto

Place: **1**

Covenant Christian Academy Grade: 7

Award: Dauphin Island Sea Lab. - Marine Environmental Sciences Consortium

Junior Division

Participant: Avani Singireddy
Project Cat. and No.: CH 57 Dissolved Oxygen vs Temperature
Place: **1**
Mill Creek Elementary School Grade: 6

Participant: Julian Vilardi
Project Cat. and No.: E 121 Nuisance or Not? Using Problem Organisms as Alternative Biofuels
Place: **1**
Wetumpka Middle School Grade: 6

Participant: Hader Ahmed
Project Cat. and No.: N 82 Building Materials and Acid Rain
Place: **HM**
Islamic Academy of Alabama Grade: 8

Participant: Brian Dublin
Project Cat. and No.: E 110 "Which Wind Turbine Best Harness Wind?"
Place: **HM**
Oakwood Adventisit Academy Grade: 8

Senior Division

Participant: Thuan Tran Christain Golding
Project Cat. and No.: EM 501 Save the Turtles
Place: **HM**
Hewitt-Trussville High School Grade: 12

Award: Dr. and Mrs. Graeme Duthie Award

Junior Division

Participant: Sydney Hur
Project Cat. and No.: Z 202 How To Get Shiny Teeth
Place: **1**
Mill Creek Elementary School Grade: 6

Award: Greater Huntsville Rotary

Junior Division

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Participant: Sophia MacDonald

Project Cat. and No.: N 87 Electric Waves

Place: **2**

Clark-Shaw Magnet School Grade: 7

Senior Division

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **1**

South Montgomery County Academy Grade: 12

Participant: Lucas Lynn

Project Cat. and No.: EM 505 Shear Radial Strength: Using Web Geometry to Create a Better Body Armor

Place: **2**

Wetumpka High School Grade: 10

Award: Huntsville Botanical Gardens

Junior Division

Participant: Ava Muller

Project Cat. and No.: BZ 24 Growth Effects of Different Types of Water on Wheatgrass

Place: **1**

The Altamont School Grade: 6

Participant: Spencer Sanderson

Project Cat. and No.: BZ 28 Liquid vs Granular: The Great Fertilizer Debate

Place: **1**

Mill Creek Elementary School Grade: 6

Participant: Tricia Smith

Project Cat. and No.: ME 175 Stop! Don't Touch That Doorknob!

Place: **1**

St. Joseph Regional Catholic School Grade: 8

Senior Division

Participant: Briganna Abernathy

Project Cat. and No.: EA 423 The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Participant: Sarah Reed

Project Cat. and No.: CH 407 Vitamin C: Red vs. Green

Place: **1**

St. John Paul II Catholic High School Grade: 11

Award: Huntsville Electro-Optical Society

Junior Division

Participant: Olivia Bailey
Project Cat. and No.: CH 50 "Coming Clean"
Place: **1**
St. Joseph Regional Catholic School Grade: 7

Participant: Miles Thompson
Project Cat. and No.: Z 206 Looking For a Flash of Fire
Place: **1**
St. Joseph Regional Catholic School Grade: 7

Participant: Maanasi Limaye
Project Cat. and No.: N 91 Now You See It, Now You Don't
Place: **2**
Rainbow Elementary School Grade: 6

Participant: Pranav Somu
Project Cat. and No.: Z 216 Ohm's Law: Understanding Parallel and Series Circuits
Place: **2**
Millcreek Elementary School Grade: 5

Participant: Aeneas Anderson
Project Cat. and No.: Z 210 The Data Track Space of a CD/DVD
Place: **3**
Clark-Shaw Magnet School Grade: 8

Participant: Kayley Brown
Project Cat. and No.: CH 59 Glow Stick Frenzy
Place: **HM**
Heritage Elementary School Grade: 6

Senior Division

Participant: Michael McGinnis

Project Cat. and No.: PH 601 Growth and Measurement of Ices Depending on Input Flow Rates of Nitrogen Gas for Application in Terahertz Spectroscopy of Interstellar Ices

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Participant: Nolan Lenard

Project Cat. and No.: EP 484 Maximizing The Efficiency of Dye-Sensitized Solar Cells

Place: **2**

W.P. Davidson High School Grade: 11

Participant: Mary Alice Jouve

Project Cat. and No.: PH 600 "Clear Sky at Night, Astronomer's Delight": An Analysis of Skyglow(Mobile, AL & Miramar Beach, FL)

Place: **3**

McGill-Toolen Catholic High School Grade: 9

Participant: Madison Guilbert

Project Cat. and No.: BH 360 "Exotic Eyesight"

Place: **HM**

St. John Paul II Catholic High School Grade: 10

Participant: Clayton Hutsler

Project Cat. and No.: EP 482 Efficiency of Solar Panels

Place: **HM**

Wetumpka High School Grade: 9

Award: IEEE Huntsville Section

Junior Division

Participant: William Ashley

Project Cat. and No.: N 86 Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"

Place: **1**

Cornerstone Christian Academy Grade: 8

Participant: Sophia MacDonald

Project Cat. and No.: N 87 Electric Waves

Place: **1**

Clark-Shaw Magnet School Grade: 7

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Participant: Naomi VanHouten

Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto

Place: **1**

Covenant Christian Academy Grade: 7

Senior Division

Participant: Emma Burford — Amanda Green, Kaitlin Silverwood

Project Cat. and No.: EM 500 Poor Fine Motor Skills Assistive Touchscreen Device

Place: **1**

Hewitt-Trussville High School Grade: 12

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Rahul Lall

Project Cat. and No.: EM 504 Prognostication of Flexible Batteries in Wearable Electronics

Place: **1**

Auburn High School Grade: 11

Participant: Drew Prevost

Project Cat. and No.: ES 440 Development and Systems Integration of a Modular Power Factor Corrected Preconverter, LiFePO4 Battery Charger, DC Motor Controller, and Battery Monitoring System

Place: **1**

Covenant Christian Academy Grade: 12

Award: Intel - Excellence in Computer Science

Senior Division

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Award: International Sustainable World (I-SWEEEP)

Senior Division

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **1**

South Montgomery County Academy Grade: 12

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **HM**

Auburn High School Grade: 12

Award: ISEF Finalists

Senior Division

Participant: Hannah James

Project Cat. and No.: BH 365 The Effects of a Natural Extract (Allyl disulfide) on Lymphocyte Activation

Place: **1**

Wetumpka High School Grade: 12

Participant: Alexis Jones

Project Cat. and No.: BI 342 Assessment of Macro and Micronutrients in a Recycled Supplement for Canines

Place: **1**

Auburn High School Grade: 10

Participant: Arjun Lakhanpal

Project Cat. and No.: TM 660 Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers

Place: **1**

The Altamont school Grade: 11

Participant: Jamie Lim

Project Cat. and No.: CB 381 Cellular and Molecular Analysis of Allicin's Effect on Leukemia Cells

Place: **1**

Murphy High School Grade: 10

Award: Junior Grand Awards

Junior Division

Participant: Sophia MacDonald
Project Cat. and No.: N 87 Electric Waves
Place: **1**
Clark-Shaw Magnet School Grade: 7

Participant: Jordan Reynolds-Gleason
Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?
Place: **1**
Grace Lutheran School Grade: 8

Participant: Nikitha Sridhar
Project Cat. and No.: ME 164 Brain's Processing of Novelty Information: Effects of Working Memory Resources
Place: **1**
Auburn Junior High School Grade: 8

Participant: Naomi VanHouten
Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto
Place: **1**
Covenant Christian Academy Grade: 7

Award: Mu Alpha Theta

Senior Division

Participant: Rahul Lall
Project Cat. and No.: EM 504 Prognostication of Flexible Batteries in Wearable Electronics
Place: **1**
Auburn High School Grade: 11

Participant: David Walker
Project Cat. and No.: MA 551 The Theseus Encryption
Place: **1**
Decatur High School Grade: 9

Award: NASA EARTH System Science Award

Junior Division

Participant: Jade Madison

Project Cat. and No.: E 118 In The Zone

Place: **1**

Clark-Shaw Magnet School Grade: 8

Senior Division

Participant: Briganna Abernathy

Project Cat. and No.: EA 423 The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Award: National Aeronautics & Space Administration

Junior Division

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Senior Division

Participant: Adam He

Project Cat. and No.: PH 604 Investigation of the Orbital Stability of Circumbinary Planets in the Habitable Zone of the Double-Star System Kepler-16

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Alena Kim

Project Cat. and No.: MA 550 The Astroid Survey Problem

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Rahul Lall

Project Cat. and No.: EM 504 Prognostication of Flexible Batteries in Wearable Electronics

Place: **1**

Auburn High School Grade: 11

Participant: Michael McGinnis

Project Cat. and No.: PH 601 Growth and Measurement of Ices Depending on Input Flow Rates of Nitrogen Gas for Application in Terahertz Spectroscopy of Interstellar Ices

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Award: National Oceanic and Atmospheric Administration - Taking the Pulse of the Planet Award

Junior Division

Participant: Brian Dublin

Project Cat. and No.: E 110 "Which Wind Turbine Best Harness Wind?"

Place: **1**

Oakwood Adventisit Academy Grade: 8

Senior Division

Participant: Ernald Jules Aloria Emily Pinkston

Project Cat. and No.: CB 380 The Effects of Ocean Acidification on Marine Life

Place: **1**

Wetumpka High School Grade: 12

Award: Ricoh Americas Corporation

Junior Division

Participant: Sejal Srivastava

Project Cat. and No.: ME 162 Analyzing Alternative Approaches for Testing E. coli in Water in Support of the Food Safety Modernization Act's Produce Safety Rule

Place: **1**

Auburn Junior High School Grade: 8

Senior Division

Participant: Danika Louw

Project Cat. and No.: EM 503 Highly Effective Hybrids

Place: **1**

Holy Spirit Catholic High School Grade: 11

Award: Society for In Vitro Biology

Senior Division

Participant: Arjun Lakhanpal

Project Cat. and No.: TM 660 Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers

Place: **1**

The Altamont school Grade: 11

Participant: Aarthi Namasivayam

Project Cat. and No.: BH 366 Biocompatibility of Polyoxmethylene Bioreactors for Tissue-Engineered Vascular Models

Place: **1**

The Altamont School Grade: 11

Award: Society of American Military Engineers (SAME) - Huntsville Post

Junior Division

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Participant: Naomi VanHouten

Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto

Place: **1**

Covenant Christian Academy Grade: 7

Senior Division

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School Grade: 12

Participant: Drew Prevost

Project Cat. and No.: ES 440 Development and Systems Integration of a Modular Power Factor Corrected Preconverter, LiFePO4 Battery Charger, DC Motor Controller, and Battery Monitoring System

Place: **1**

Covenant Christian Academy Grade: 12

Award: Soil & Water Conservation Society

Junior Division

Participant: Connor Copeland

Project Cat. and No.: E 127 How Fertilizer Effects Growth on Algae in Pond Water

Place: **1**

Columbia Elementary Grade: 5

Participant: Elijah Sheffer

Project Cat. and No.: E 125 Water Through Soil

Place: **1**

Holy Spirit Catholic High School Grade: 8

Senior Division

Participant: Ansley Chaplin

Project Cat. and No.: AS 305 The Effect of Salinity on the Filtration Function of Oysters

Place: **1**

W.H. Davidson High School Grade: 11

Participant: Varsha Sridhar

Project Cat. and No.: CH 403 The Determination and Bioremediation of Potential Carcinogens, Bisphenol A (BPA) and Bisphenol S (BPS)

Place: **1**

Jefferson County International Baccalaureate School Grade: 11

Award: South Mobile County Community Development Corporation Award

Junior Division

Participant: Emma Keel

Project Cat. and No.: CH 68 What Metal is Most Susceptible to Corrosion

Place: **1**

Hampton Cove Middle School Grade: 6

Senior Division

Participant: Ernald Jules Aloria Emily Pinkston

Project Cat. and No.: CB 380 The Effects of Ocean Acidification on Marine Life

Place: **1**

Wetumpka High School Grade: 12

Participant: Sarah Bowman

Project Cat. and No.: AS 302 Lethal Versus Non-lethal Methods of Aging Lutjanus campechanus

Place: **1**

Murphy High School Grade: 12

Participant: Ansley Chaplin

Project Cat. and No.: AS 305 The Effect of Salinity on the Filtration Function of Oysters

Place: **1**

W.H. Davidson High School Grade: 11

Award: SPIE - The International Society for Optics & Photonics

Junior Division

Participant: Ella Michael

Project Cat. and No.: Z 208 Radiant Absorbency of Different Colors and Materials

Place: **1**

Huntsville Junior High School Grade: 8

Participant: Jordan Reynolds-Gleason

Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?

Place: **1**

Grace Lutheran School Grade: 8

Participant: Jacob Spence Zachary Tribble

Project Cat. and No.: Z 190 Keepin' It Cool

Place: **1**

East Limestone Middle School Grade: 8

Senior Division

Participant: Rohan Badve

Project Cat. and No.: BH 368 Natural Oils Protect Human Skin Cells Against Harmful UVB Radiation: Effective as Sunscreen Agents

Place: **1**

W.P. Davidson High School Grade: 10

Participant: Adam He

Project Cat. and No.: PH 604 Investigation of the Orbital Stability of Circumbinary Planets in the Habitable Zone of the Double-Star System Kepler-16

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Connor Reed

Project Cat. and No.: PH 607 Ultrasonic Levitation

Place: **1**

St. John Paul II Catholic High School Grade: 11

Award: Stockholm Junior Water Prize

Senior Division

Participant: Ansley Chaplin

Project Cat. and No.: AS 305 The Effect of Salinity on the Filtration Function of Oysters

Place: **HM**

W.H. Davidson High School Grade: 11

Participant: Briganna Abernathy

Project Cat. and No.: EA 423 The Potential of Ferric Oxide as a Removal Method for Biochemical Contaminants

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Participant: Zena Banker

Project Cat. and No.: PS 623 Freshwater not Frackwater:the Effect of Fracking on the Chlorophyll Content in Vigna unguiculata and the Survival of Freshwater Algae

Place: **1**

Wetumpka High School Grade: 12

Participant: Megan Lange

Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification

Place: **1**

Auburn High School Grade: 12

Participant: Brooklyn Massey

Project Cat. and No.: EA 422 The Effects of Hormones on Aquatic Life and How They Alter Gender Patterns

Place: **1**

Davidson High School Grade: 10

Participant: Varsha Sridhar

Project Cat. and No.: CH 403 The Determination and Bioremediation of Potential Carcinogens, Bisphenol A (BPA) and Bisphenol S (BPS)

Place: **1**

Jefferson County International Baccalaureate School Grade: 11

Award: Teledyne Brown Engineering Award

Junior Division

Participant: Catherine Blevins

Project Cat. and No.: CH 62 Radiation in My Room

Place: **1**

Decatur Presbyterian Church School Grade: 8

Senior Division

Participant: Hamza Khan

Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Michael McGinnis

Project Cat. and No.: PH 601 Growth and Measurement of Ices Depending on Input Flow Rates of Nitrogen Gas for Application in Terahertz Spectroscopy of Interstellar Ices

Place: **1**

Jefferson County International Baccalaureate School Grade: 12

Award: Tennessee Valley Authority

Junior Division

Participant: Sophia MacDonald

Project Cat. and No.: N 87 Electric Waves

Place: **1**

Clark-Shaw Magnet School Grade: 7

Senior Division

Participant: Viviana Aragon
Project Cat. and No.: EE 532 Pharmaceutical Pollution in Bodies of Water
Place: **1**
James Clemens High School Grade: 10

Participant: Sarah Bowman
Project Cat. and No.: AS 302 Lethal Versus Non-lethal Methods of Aging Lutjanus campechanus
Place: **1**
Murphy High School Grade: 12

Participant: Elijah Greene Travis Gunn
Project Cat. and No.: EP 481 Renewable Power Trekking Pole
Place: **1**
Hewitt-Trussville High School Grade: 12

Participant: Abigail Knight
Project Cat. and No.: EE 534 The Removal of Arsenic (III) from Contaminated Groundwater in Developing Countries
Place: **1**
Hewitt-Trussville High School Grade: 12

Participant: Megan Lange
Project Cat. and No.: EE 533 Removal of BTEX from Storm Water using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling Verification
Place: **1**
Auburn High School Grade: 12

Participant: Nolan Lenard
Project Cat. and No.: EP 484 Maximizing The Efficiency of Dye-Sensitized Solar Cells
Place: **1**
W.P. Davidson High School Grade: 11

Award: Toyota Motor Manufacturing Company

Junior Division

Participant: Miranda Martin
Project Cat. and No.: X 145 RFID - The Bells Toll for Thee
Place: **1**
Montevallo Middle School Grade: 8

Senior Division

Participant: Drew Prevost

Project Cat. and No.: ES 440 Development and Systems Integration of a Modular Power Factor Corrected Preconverter, LiFePO4 Battery Charger, DC Motor Controller, and Battery Monitoring System

Place: **1**

Covenant Christian Academy Grade: 12

Award: U.S. Army Science and Engineering Awards Program

Junior Division

Participant: Isaac Ford — Tyler Lawson; Grayson Norman
Project Cat. and No.: N 80 The OLV 500
Place: **2**
Our Lady of the Valley Grade: 5

Participant: Olivia Gay
Project Cat. and No.: ME 169 Keeping It Smooth
Place: **2**
West Madison Elementary School Grade: 5

Participant: Ramy Mansur
Project Cat. and No.: ME 171 Natural Acne Gents
Place: **2**
Islamic Academy Of Alabama Grade: 6

Participant: Bennett Rigby
Project Cat. and No.: X 141 Compression: Is It Worth The Time?
Place: **2**
St. John the Baptist Catholic School Grade: 7

Participant: Benjamin Standaert
Project Cat. and No.: N 83 Can You Find Your Book?
Place: **2**
Indian Springs School Grade: 8

Participant: Trisha Agrawal
Project Cat. and No.: X 142 Electronic Eyes for the Blind
Place: **HM**
Phillips Preparatory School Grade: 8

Participant: Aeneas Anderson
Project Cat. and No.: Z 210 The Data Track Space of a CD/DVD
Place: **HM**
Clark-Shaw Magnet School Grade: 8

Participant: William Ashley
Project Cat. and No.: N 86 Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"
Place: **HM**
Cornerstone Christian Academy Grade: 8

Participant: Olivia Bailey

Project Cat. and No.: CH 50 "Coming Clean"

Place: **HM**

St. Joseph Regional Catholic School Grade: 7

Participant: Alison Boardwine

Project Cat. and No.: BZ 27 Jumping Into Biomechanics

Place: **HM**

Eclectic Middle School Grade: 8

Participant: Michael Robert Bollinger

Project Cat. and No.: BE 7 Sneaky Sugar

Place: **HM**

Challenger Elementary School Grade: 5

Participant: Andrew Clark

Project Cat. and No.: CH 60 Keep Your Cool

Place: **HM**

Muscle Shoals Middle School Grade: 7

Participant: Megan Danh

Project Cat. and No.: Z 203 How Well Do Different Materials Create Electricity?

Place: **HM**

Rainbow Elementary School Grade: 6

Participant: Brian Dublin

Project Cat. and No.: E 110 "Which Wind Turbine Best Harness Wind?"

Place: **HM**

Oakwood Adventisit Academy Grade: 8

Participant: Mustafa Eltoum

Project Cat. and No.: BZ 29 Manual vs. Drip Irrigation

Place: **HM**

Islamic Academy of Alabama Grade: 6

Participant: Riley Jordan

Project Cat. and No.: N 81 "The Hovercraft...Floating on Air!"

Place: **HM**

Carver Magnet School Grade: 6

Participant: Emma Keel

Project Cat. and No.: CH 68 What Metal is Most Susceptible to Corrosion

Place: **HM**

Hampton Cove Middle School Grade: 6

Participant: Summer Kynard

Project Cat. and No.: N 88 Hydroelectric Generator

Place: **HM**

Horizon Elementary Grade: 6

Participant: Maanasi Limaye

Project Cat. and No.: N 91 Now You See It, Now You Don't

Place: **HM**

Rainbow Elementary School Grade: 6

Participant: Sophia MacDonald

Project Cat. and No.: N 87 Electric Waves

Place: **HM**

Clark-Shaw Magnet School Grade: 7

Participant: Haripriya Mantraratnam

Project Cat. and No.: BE 9 The Stroop Effect: Words or Shapes?

Place: **HM**

Mill Creek Elementary School Grade: 6

Participant: Joshua Murphree

Project Cat. and No.: E 114 Big Rocks First: Does the Order of Filtration Materials Really Matter?

Place: **HM**

Columbia Elementary School Grade: 6

Participant: Talal Naser

Project Cat. and No.: X 144 Indirect Measurements

Place: **HM**

Islamic Academy Of Alabama Grade: 6

Participant: Kate Owen

Project Cat. and No.: E 117 How to Wash Your Water

Place: **HM**

Columbia Elementary School Grade: 5

Participant: Deven Patel

Project Cat. and No.: ME 166 Destroying Diabetes

Place: **HM**

Indian Springs School Grade: 8

Participant: Akanksha Rawat

Project Cat. and No.: ME 168 Herbs vs. Antacids

Place: **HM**

Clark-Shaw Magnet School Grade: 8

Participant: Emms Schaetzle

Project Cat. and No.: ME 161 "Death Grip"

Place: **HM**

Holy Spirit Catholic High School Grade: 8

Participant: Callie Scroggins

Project Cat. and No.: BE 2 Another Rewarding Experience- A Two-Year Study -

Place: **HM**

Mill Creek Elementary School Grade: 6

Participant: Naomi VanHouten

Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto

Place: **HM**

Covenant Christian Academy Grade: 7

Participant: Jayden Vanterpool

Project Cat. and No.: CH 52 Can Silver Decrease Bacterial Enzyme Function?

Place: **HM**

Oakwood Adventist Academy Grade: 7

Participant: Julian Vilardi

Project Cat. and No.: E 121 Nuisance or Not? Using Problem Organisms as Alternative Biofuels

Place: **HM**

Wetumpka Middle School Grade: 6

Participant: Ella Wiggins

Project Cat. and No.: Z 201 How Far Can a Spark Jump?

Place: **HM**

Beverlye Magnet School Grade: 8

Participant: Kameron Woolverton

Project Cat. and No.: N 84 Cool Cooler Coolest

Place: **HM**

Holy Spirit Catholic High School Grade: 8

Participant: Maaz Zuberi

Project Cat. and No.: X 146 The Health Effects of Technology

Place: **HM**

The Altamont School Grade: 7

Senior Division

Participant: Maya Padmalayam

Project Cat. and No.: CH 402 Focused Ultrasound-Mediated Targeted Delivery of Polymer-Encapsulated Drugs: A Novel Therapeutic Strategy for Cancer

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Edmond Strickland

Project Cat. and No.: EM 502 Dual Purpose Muffler

Place: **1**

South Montgomery County Academy Grade: 12

Participant: Madison Guilbert

Project Cat. and No.: BH 360 "Exotic Eyesight"

Place: **2**

St. John Paul II Catholic High School Grade: 10

Participant: Avinash Anshumali

Project Cat. and No.: BH 367 Investigating the Anti-Cancer Abilities of Aurpatene

Place: **HM**

W.P. Davidson High School Grade: 10

Participant: Zena Banker

Project Cat. and No.: PS 623 Freshwater not Frackwater:the Effect of Fracking on the Chlorophyll Content in Vigna unguiculata and the Survival of Freshwater Algae

Place: **HM**

Wetumpka High School Grade: 12

Participant: DeMarcus Campbell

Project Cat. and No.: SS 640 A Multi-Functional Algorithm for Audio Steganography

Place: **HM**

Alabama School of Fine Arts Grade: 12

Participant: Eleanor Cox Lauren "Gracie" Beyer

Project Cat. and No.: CH 400 The Hotter the Crime, the Longer the Time

Place: **HM**

Stanhope Elmore High School Grade: 10

Participant: Eleanor Cox Lauren "Gracie" Beyer

Project Cat. and No.: CH 400 The Hotter the Crime, the Longer the Time

Place: **HM**

Stanhope Elmore High School Grade: 10

Participant: Sydney Cox

Project Cat. and No.: CB 383 I Can See Clearly Now, The Protein's Gone

Place: **HM**

Wetumpka High School Grade: 12

Participant: Rowan ElQishawi Rozan ElQishawi

Project Cat. and No.: PS 621 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 Against the Huanglongbing (HLB) Disease causing Libe

Place: **HM**

Hoover High School Grade: 12

Participant: Richard Fu Danielle Wu

Project Cat. and No.: MI 570 Probiotics in Yogurts and Their Potential Impacts on Human Health

Place: **HM**

Vestavia Hills High School / Indian Springs School Grade: 10

Participant: Hannah James

Project Cat. and No.: BH 365 The Effects of a Natural Extract (Allyl disulfide) on Lymphocyte Activation

Place: **HM**

Wetumpka High School Grade: 12

Participant: Kenneth Jiao

Project Cat. and No.: BH 362 An Epigenetic Factor, CHD7, Inhibits Migration of Metastatic Breast Cancer Cells

Place: **HM**

Indian Springs School Grade: 10

Participant: Pongbhud Kankirawatana

Project Cat. and No.: CB 382 Connexin 26 and Connexin 30 Mutations in CMV-related Sensorineural Hearing Loss

Place: **HM**

Alabama School of Fine Arts Grade: 12

Participant: Alena Kim

Project Cat. and No.: MA 550 The Astroid Survey Problem

Place: **HM**

Alabama School of Fine Arts Grade: 12

Participant: William Locker

Project Cat. and No.: BE 322 College Students' Attitudes Toward Political Candidates: The Effect of Gender

Place: **HM**

Murphy High School Grade: 9

Participant: Jessica Maggi

Project Cat. and No.: BE 14 To Read or Not to Read

Place: **HM**

Holy Spirit Catholic High School Grade: 11

Participant: Addison Meeks

Project Cat. and No.: BE 328 Total Recall: Phase Two of Do You See What I See?

Place: **HM**

Auburn High School Grade: 10

Participant: Isabella Morrow

Project Cat. and No.: BH 361 "The Effect of Electrolytes on the Heart Rate of Daphnia Magna"

Place: **HM**

Shoals Christian School Grade: 10

Participant: Charles Wallington

Project Cat. and No.: PH 602 How Do You Use a Laser Pointer to Measure Space on CDs?

Place: **HM**

Oakwood Adventist Academy Grade: 11

Participant: Spenser Willard

Project Cat. and No.: TM 661 Can Sensors Be Used to Measure Step Quality?

Place: **HM**

St. John Paul II Catholic High School Grade: 9

Participant: Sydney Woodring

Project Cat. and No.: AS 304 Which Type of Horse Boot Creates Less Heat?

Place: **HM**

St. John Paul II Catholic High School Grade: 11

Award: U.S. Metric Association

Senior Division

Participant: Danika Louw

Project Cat. and No.: EM 503 Highly Effective Hybrids

Place: **1**

Holy Spirit Catholic High School Grade: 11

Participant: Rupa Palanki

Project Cat. and No.: EC 460 Analysis of Glycerol Reactor to Produce Hydrogen for Fuel Cell Applications

Place: **1**

W.P. Davidson High School Grade: 11

Award: U.S. Navy and Marine Corps - Office of Naval Research

Junior Division

Participant: Sophia MacDonald
Project Cat. and No.: N 87 Electric Waves
Place: **1**
Clark-Shaw Magnet School Grade: 7

Participant: Rachel Majumder
Project Cat. and No.: CH 64 Temperature Effect on the Enzyme Catalase
Place: **1**
Clark-Shaw Magnet School Grade: 8

Participant: Jordan Reynolds-Gleason
Project Cat. and No.: Z 196 Can a Graphene Capacitor be 3D Printed with Higher Surface Area in Order to Increase Energy Storage Capacity?
Place: **1**
Grace Lutheran School Grade: 8

Participant: Jackson Stapleton
Project Cat. and No.: E 116 Farmers Meet Drones
Place: **1**
East Limestone Middle School Grade: 8

Participant: Riley Tucker
Project Cat. and No.: E 124 Use of a Microbial Fuel Cell
Place: **1**
Clark-Shaw Magnet School Grade: 8

Participant: Naomi VanHouten
Project Cat. and No.: X 140 "Domo Arigato" Precision Roboto
Place: **1**
Covenant Christian Academy Grade: 7

Senior Division

Participant: Pongbhud Kankirawatana

Project Cat. and No.: CB 382 Connexin 26 and Connexin 30 Mutations in CMV-related Sensorineural Hearing Loss

Place: **1**

Alabama School of Fine Arts Grade: 12

Participant: Abigail Knight

Project Cat. and No.: EE 534 The Removal of Arsenic (III) from Contaminated Groundwater in Developing Countries

Place: **1**

Hewitt-Trussville High School Grade: 12

Participant: Arjun Lakhanpal

Project Cat. and No.: TM 660 Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers

Place: **1**

The Altamont school Grade: 11

Participant: Jamie Lim

Project Cat. and No.: CB 381 Cellular and Molecular Analysis of Allicin's Effect on Leukemia Cells

Place: **1**

Murphy High School Grade: 10

Participant: Rupa Palanki

Project Cat. and No.: EC 460 Analysis of Glycerol Reactor to Produce Hydrogen for Fuel Cell Applications

Place: **1**

W.P. Davidson High School Grade: 11

Award: U.S. Space and Rocket Center

Junior Division

Participant: William Ashley

Project Cat. and No.: N 86 Do Super Magnets Make Super Generators: "The Effects of Neodymium Magnets on Simple Electric Generators"

Place: **1**

Cornerstone Christian Academy Grade: 8

Senior Division

Participant: Drew Prevost

Project Cat. and No.: ES 440 Development and Systems Integration of a Modular Power Factor Corrected Preconverter, LiFePO4 Battery Charger, DC Motor Controller, and Battery Monitoring System

Place: **1**

Covenant Christian Academy Grade: 12

Award: United States Air Force

Senior Division

Participant: Elijah Greene Travis Gunn
Project Cat. and No.: EP 481 Renewable Power Trekking Pole
Place: **1**
Hewitt-Trussville High School Grade: 12

Participant: Hamza Khan
Project Cat. and No.: ES 441 Object Detection and Tracking with OpenCV and a Quadcopter
Place: **1**
Alabama School of Fine Arts Grade: 12

Participant: Lucas Lynn
Project Cat. and No.: EM 505 Shear Radial Strength: Using Web Geometry to Create a Better Body Armor
Place: **1**
Wetumpka High School Grade: 10

Participant: David Walker
Project Cat. and No.: MA 551 The Theseus Encryption
Place: **1**
Decatur High School Grade: 9

Award: Von Braun Astronomical Society

Senior Division

Participant: Mary Alice Jouve
Project Cat. and No.: PH 600 "Clear Sky at Night, Astronomer's Delight": An Analysis of Skyglow(Mobile, AL & Miramar Beach, FL)
Place: **1**
McGill-Toolen Catholic High School Grade: 9

Award: Yale Science and Engineering Association

Senior Division

Participant: Arjun Lakhanpal

Project Cat. and No.: TM 660 Apoptotic Effects of Niclosamide and Chemotherapies, With Potential to Overcome Drug Resistance in Triple Negative Breast Cancers

Place: **1**

The Altamont school Grade: 11

Participant: Rupa Palanki

Project Cat. and No.: EC 460 Analysis of Glycerol Reactor to Produce Hydrogen for Fuel Cell Applications

Place: **1**

W.P. Davidson High School Grade: 11