

2011 Alabama Science & Engineering Fair

UAHuntsville Directors Awards

Senior Division

Matthew Eskridge, Covenant Christian Academy
"Zoom Into the Future: A Study Into the Digital Enhancement of Vision"

Pranjal Gupta, Auburn High School
"A Better Anti-Cancer Drug: Superior topoisomerase II-inhibition by DNA Intercalation with a Mitoxantrone Analogue"

Marie Reuter, Wetumpka High School
"A Pharmacological Study on Heart Healthy Vitamins and *Daphnia magna*"

James Yarbrough, Alabama School of Fine Arts
"A Mobile Computing Crowd Sourcing Application for Reporting Ecological Disasters"

ISEF Finalists

Senior Division

Arina Ghosh, Alabama School of Fine Arts
"The Effect of Heavy Metals on Porphyrin Ring Compounds Part 3: Leached Mercury into the Base of the Food Chain Near Coal Combustion Waste Disposal Sites"

William Haselden, Mountain Brook High School
"Exploring Treatments for Epilepsy using an Experimental Animal Model"

Rosalyn Langhinrichsen-Rohling, Murphy High School
"W, Wh, Why Can't I Have the Job?"

Marie Reuter, Wetumpka High School
"A Pharmacological Study on Heart Healthy Vitamins and *Daphnia magna*"

Junior Grand Awards

Sarah Bowman, Phillips Preparatory Middle School
"Snailing Along"

Alex Dillon, Liberty Middle School
"Remote Access Webcam Suite"

Laurie Graves, Hampton Cove Middle School
"The Rocket City Lunar Lander Experiment"

Rebecca Johnson, Life Christian Academy
"Datapult Returns! Mathematically Modeling a System"

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Category Award Winners

Junior Division

Behavioral & Social Sciences

1st, Kennedy MacDonald, Phillips Preparatory School
"Cricket Conversations"

2nd, Bailey Dewberry, St. Joseph Regional Catholic School
"Mnemonics or Not?"

3rd, Erin Cronise, St. John the Baptist Catholic School
"A Bird's Response to Different Color Bird Feeders"

3rd, Josie Neidermeier, The Altamont School
"Eyewitness Testimony: Guilty or Not Guilty?"

3rd, Hannah Szarenski, Glenwood School
"Mozart Makes Smart Rats"

4th, Rawdah Elbahrawi, Islamic Academy of Alabama
"What Do You Taste?"

4th, Bushra Gamil, Islamic Academy of Alabama
"How Disgusting is That?!"

4th, Thomas Kozar, Hampton Cove Middle School

"To Taste or Not to Taste"

4th, Kylie Thorum, Liberty Middle School
"Finders Keepers, Losers Weepers?"

HM, Valerie Larkin, Sumter Academy
"What You See is What You Get"

HM, Braylon Tucker, Phillips Preparatory School
"Cricket Colors"

Botany & Zoology

1st, Sarah Bowman, Phillips Preparatory Middle School
"Snailing Along"

2nd, Ariel Odom, Phillips Preparatory School
"V.I.PEAS (Vitamins Influence Peas)"

3rd, Mark Johnson, Horizon
"Male or Female? The Effects of Temperature in the Incubation Chamber on Leopard Gecko Hatchlings"

3rd, Morgan Mango, Hampton Cove Middle School
"Bamboozled? NO!"

3rd, Lillian Rogers, Holy Spirit Catholic High School
"Does the Color of the Greenhouse Affect Plant Growth?"

4th, Katie Bohatch, Horizon Elementary
"What Can Poo Do For You?"

4th, Judith Gamble, Holy Spirit Catholic High School
"Liquidation for Germination"

4th, Bria Robinson, Phillips Preparatory School
"What is a Ladybug's Favorite Color?"

Chemistry

1st, August Arnold, Hampton Cove Middle School
"The Electrolyte Challenge"

2nd, Aliyah Curry, W. J. Christian

"Right Thru' Me"

3rd, Hanna Becerra, St. Francis Xavier Catholic School
"2% Fat In Your Milk"

3rd, Rauma Burkard, Hampton Cove Middle School
"Decking the Right Wood"

3rd, Benjamin Noel, St. John the Baptist Catholic School
"Candy Chromatography"

4th, Danielle Blich, Clark-Shaw Magnet School
"Jawbreaker Disintegration"

4th, Ali El-Husari, Islamic Academy of Alabama
"Acids vs Alkaline"

4th, Sean Jackson, Cold Springs High School
"Beverage Battles"

Engineering

1st, Matthew Castleberry, Hampton Cove Middle School
"Waves or Watts Who Makes the Most Power?"

2nd, Joseph Lee, St. Peter's Academy
"It's Light Part Two"

3rd, William Damsgard, Thompson Middle School
"Distracted Driving: The Affects of Distractions on Video Game Drivers"

3rd, Bettina Lucente and Isabelle Spence, Heritage Elementary
"Tina and Izzy's Study of Thermal Conductivity"

4th, Anne Boyle, Duran North Jr. High School
"'Weight' a Minute"

HM, Caleb Davis, Horizon
"Heat Sensing"

HM, Laurie Graves, Hampton Cove Middle School
"The Rocket City Lunar Lander Experiment"

HM, Ariel Herren, Williams Intermediate
"Is Bigger Better?"

HM, Kevin Mai, Academy of Science and Foreign Languages
"Earthquake"

HM, David Whaley, St. Francis Xavier Catholic School
"Cracking Domes"

Environmental

1st, Kaitlin Beyler and Ryan Nichols, Thompson Middle School
"Quality H2O ... Yes or No?"

2nd, Ayah Eltoun, Islamic Academy of Alabama
"Herbicidal Mechanism of Tamarind"

3rd, Will Pannell, The Altamont School
"Assessing the Effects on the Collection of Solar Energy"

3rd, Haley Thompson, Holy Spirit Catholic High School
"Compostable Or Just A Racket?"

4th, Rowan El-Qishawi, Islamic Academy of Alabama
"Alabama Shores ... Are you cured?"

4th, Claire Gibson, Westminster Christian Academy
"How Hard is the Water in Our Area? An Environmental Study"

4th, Hailey Ravine, Mobile Christian School
"Comparison of Pond Water Filtered Through Sand or Pea Pebbles Using Gravity Sediment Filtrat"

HM, Maria Charles, Cold Springs High School
"Does Water Temperature Affect the Size of a Tornado?"

HM, Kaitlyn Cislo, Liberty Middle School
"In What Temperature Does Fog Form Fastest?"

Math & Computers

1st, Alex Dillon, Liberty Middle School
"Remote Access Webcam Suite"

2nd, Sean Benson, Clark-Shaw Magnet School
"Recognize It!"

3rd, Carson Bruce, Duran North Jr. High School
"How Much Compression is Too Much?"

3rd, Sahil Patnayakuni, Hampton Cove Middle School
"Guess the Author"

3rd, Austin Turner, Hampton Cove Middle School
"The Battle of the Hackers"

4th, Ronni Gagliano, Duran North Jr. High School
"Does Color Affect Choice"

4th, Ryan Grissett, Flomaton High School
"Robotics"

4th, Will Thomason, Graham Elementary School
"A Game Theory Survey of Monopoly"

4th, Harrison Turner, Clark-Shaw Magnet School
"Investigating Your Wi-Fi Woes"

Medicine & Health Science

1st, Grey Lewis, Patrician Academy
"Heartache: Do Different Concentrations of Ethanol Have an Effect on the Heartbeat of Daphnia"

2nd, Ryan Harmon, Columbiana Middle School
"Bacteria Banishers"

3rd, Ruaa Aishah, Islamic Academy of Alabama
"Please Don't Cry!"

3rd, Bailey Manning, South Choctaw Academy
"Drop That Candy Bar"

3rd, Danah Mekdad, Islamic Academy of Alabama
"Bacteria Be Gone!!"

4th, Maclaine Fields, The Altamont School
"Helmet Safety"

4th, Rajani Kenea, Liberty Middle School
"Effect of Mouthwash on Bacteria"

4th, Rohan Palanki, Phillips Preparatory Middle School
"Got Milk!"

4th, Caitlin Potts, St. John the Baptist Catholic School
"Heart Rate and Calorie Analysis"

HM, Emily Parvino, Clark-Shaw Magnet School
"Dare to Compare: Generic vs. Name Brand Sunscreen"

HM, English Todd, Horizon Elementary
"Bacteria: The Good, The Bad and The Dirty"

Physical Science

1st, Eric Bean, Liberty Middle School
"Gauss Rifle"

2nd, Rebecca Johnson, Life Christian Academy
"Datapult Returns! Mathematically Modeling a System"

3rd, Katelin Baird, Columbia
"Spare a Watt, Save a Lot"

3rd, Nicholas Dietschweiler, Thompson Middle School
"Bubble, Bubble ... This Could Get Me In Big Trouble: H₂O Electrolysis"

3rd, Sam McPheeters, Hampton Cove Middle School
"Turn the Heat On"

4th, Abigail Chatelain, Liberty Middle School
"The Balancing Act"

4th, Chace Lake, Holy Spirit Catholic School
"Which Curves More, a Two Seam or Four Seam Fast Ball?"

4th, Kaylea Lott, Duran North Jr. High School
"Avoid The Shock"

4th, Rachel Ryan, Danville Middle School
"Does Adding Sugar Affect the Density of Water?"

4th, Bijal Vashi, Phillips Preparatory School
"Biomass to Biogas"

HM, Cailan Bevel, Thompson Middle School
"Blowing Bottle Tops: Making Music with Glass Bottles"

HM, Kramer Crider, Cold Springs High School
"What Affects The Level Of Pitch?"

HM, Jackson Dennis, Liberty Middle School
"Effect of Propeller Size on Thrust Produced"

HM, Galen Lee, Holy Spirit Catholic High School
"Arrow Penetration: Weight Vs. Configuration"

HM, Andrew Robinson, W.J. Christian
"Torque AKA Spin"

Senior Division

Animal Science

1st, Marie Reuter, Wetumpka High School
"A Pharmacological Study on Heart Healthy Vitamins and *Daphnia magna*"

2nd, Gabriel Spieler, Alabama School of Fine Arts
"The Invasion of *Chytridiomycosis* into Amphibian Populations of North-Central Alabama"

3rd, Thomas Gard, Murphy High School
"Alarming Ants"

4th, Alan Vo, Alma Bryant
"The Effects of Salinity on Juvenile Oysters Grown In Captivity"

HM, Kristina Emmerson, Westminster Christian Academy
"That Cracks Me Up!"

Behavioral & Social Sciences

1st, Langhinrichsen-Rohling, Murphy High School
"W, Wh, Why Can't I Have the Job?"

2nd, Sheila Pham, Murphy High School
"Going Back With Mozart"

3rd, Alexis Vance, Alabama School of Fine Arts
"Inside the Mind's Rainbow: A Probability Matrix of Sound and Color Synesthesia"

4th, Rahul Gaini, Liberty Middle School
"The Effect of Video Games: Good ... or Bad?"

4th, Patria Juzang, Oakwood Adventist Academy
"Does Color Have An Affect On Memory Retention?"

4th, Lauren Rabren, Wetumpka High School
"Power in the Palm of Your Hand"

Biochemistry

1st, Arina Ghosh, Alabama School of Fine Arts
"The Effect of Heavy Metals on Porphyrin Ring Compounds Part 3: Leached Mercury into the ..."

2nd, Malika Shettar, Indian Springs School
"DNA Binding and Cleaving of 1,8 Naphthalimide-Linked Nitrogen Onium Salts- Year 2 (Towards ..."

3rd, Suranjana Dey, Davidson High School
"Determination of Alleopathy in Kudzu (*Peuraria montana*)"

Cellular & Molecular Biology

1st, William Haselden, Mountain Brook High School
"Exploring Treatments for Epilepsy using an Experimental Animal Model"

2nd, Sid Nanda, Grissom High School
"Screening for microRNAs in the Genome of the Reniform Nematode"

3rd, Megan Moody, Wetumpka High School
"A Study of the Correlation of Total WBCs with Vacuolated WBCs"

Chemistry

1st, Adri Vankatanarayanan, Northridge High School
"The Utilization of Carbon Nanotube-Nanoparticle Heterostructures in Soft Nanocomposite Fabric"

2nd, Peter Johnsen, The Altamont School
"An Environmentally Friendly Solution for Wastewater Purification and Chemical Disposal: A UV-..."

3rd, Lakshmi Subramani, Liberty Middle School
"Fuel of the Future?"

4th, Luke Viegas, Pope John Paul II Catholic High School
"Caff or De-Caff"

HM, Riley Mayes, Mary G. Montgomery High School
"Conductivity of Metals Through Electrochemistry."

HM, Holly Parker, Pope John Paul II Catholic HS
"Excursion in Calorimetry"

Computer Science

1st, Matthew Eskridge, Covenant Christian Academy
"Zoom Into the Future: A Study Into the Digital Enhancement of Vision"

2nd, Joshua Wright, W.P. Davidson
"Game Design and Development"

3rd, James Yarbrough, Alabama School of Fine Arts
"A Mobile Computing Crowd Sourcing Application for Reporting Ecological Disasters"

4th, Sean Carter, Murphy High School
"Solitaire"

4th, Caitlin Marsh, Alabama School of Fine Arts
"The Development and Integration of Voice Controlled Software with AgentSheets for Children ..."

HM, Jhett Nordan, South Choctaw Academy
"Killing Vampire Loads"

Earth & Planetary Science

1st, John Ashburn, Covenant Christian Academy
"Asteroid Impact Tsunamis: A Continuation"

2nd, Erica Blackstock, Brooks High School
"Light Pollution: How Clear is Clear?"

3rd, Mary Morrow, Mary G. Montgomery High School
"Where Did I Come From?"

Energy & Transportation

1st, Matthew Ashburn, Covenant Christian Academy
"A Variable-Reflectivity Passive Solar Roof Design"

2nd, Joel Tinker, Covenant Christian Academy
"Engineering an Affordable Electric Vehicle, Year 2: Range Testing and Optimization"

3rd, Douglas Coghlan, Jefferson County International Baccalaureate School
"Das Eco: Research in Wind Powered Vehicles"

3rd, Devyn Parker and Ashley Yates, Wetumpka High School
"Veggie Cars: Transportation of the Future?!?"

3rd, Leslie Walker, Patrician Academy
"Don't Waste My Fuel! Phase II"

4th, John Fletcher, Holy Spirit Catholic High School
"Spin Control: How do Shape and Materials Affect the Electrical Output of a Wind Turbine?"

4th, Ben McCormick, Jefferson County International Baccalaureate School
"The Proficiency of Cooking Oils for Alternative Fuel Use"

Engineering: Electrical & Mechanical

1st, David Lofts, Covenant Christian Academy
"The Silk Spider: Development of a Robotic Spider Leg Using a Biomimetic Design"

2nd, Alexander Finney, Covenant Christian Academy
"Where's Waldo? Precision Location of Acoustic Sources"

3rd, Naivasha Harris, Murphy High School
"Wind Power"

3rd, Cory Raszeja, Alabama School of Fine Arts

"The Design and Development of a Structural-Based Eco-Sensitive Hydroelectric Generator"

Environmental Management

1st, Shawn Tuteja, The Altamont School

"Developing More Efficient Models of Titanium Dioxide Dye-Sensitized ..."

Environmental Science

1st, Rachel England, Demopolis High School

"Determining the True Mussel Man: A Comparison of the Filtration Efficiency of *Lampsilis teres* ..."

2nd, Rachel Fisher, Pope John Paul II Catholic High School

"Water Quality of Aldridge Creek"

2nd, Anna Pope, Patrician Academy

"Gulf Oil Spill"

3rd, Kayla Gerard, Mary G. Montgomery High School

"A Slick Demise"

3rd, Elizabeth Sudeiha, Murphy High School

"Goodbye Crude Oil"

4th, Amelia Greising, Westminster Christian Academy

"Electro-Coagulation vs. UV-Light in Water Purification Systems"

4th, Austin Hardman, Jefferson County International Baccalaureate School

"An Alternative Use for Fall Leaves"

4th, Zackary Weston, JCIB Shades Valley High School

"Waterlogged"

Mathematical Science

1st, Candice Lacey, Wetumpka High School

"Music and Math"

2nd, Payal Patel, Murphy High School

"Stop! Martian Time!"

3rd, Rachel Booth, Covenant Christian Academy
"Fibonacci Numbers in Music"

Medicine & Health Science

1st, Pranjal Gupta, Auburn High School
"A Better Anti-Cancer Drug: Superior topoisomerase II-inhibition by DNA Intercalation with a Mitox"

2nd, Courtney Kloske, Pope John Paul II Catholic High School
"Relationship Between the PINK1 and DJ1 Genes in the Parkinson's Pathway"

3rd, Roxanne Lockhart, Alabama School of Fine Arts
"Effect of Genestein, a Phytoestrogen, After Spinal Cord Injury in Male Rats"

4th, Olicia Dure, The Altamont School
"Brain Plasticity: The Effect Of Age (A Two Year Study)"

HM, Rachael Gamlin, Jefferson County International Baccalaureate School
"Detecting the Presence and Amount of Glycine max Allergens in Different Brands of Baby Food"

HM, Lindsay Grizzard, Murphy High School
"The Silent Killer"

Microbiology

1st, Rakesh Goli, The Altamont School
"Can a Bacterial Pigment Kill Flesh-Eating Bacteria? A Study on the Cytotoxic Nature of PVP"

2nd, Marina Triplett, Pope John Paul II Catholic High School
"Got Bacteria?"

3rd, Erin Jung, Alabama School of Math and Science
"Effects of Human on Bacteria Population in the Gulf"

Physics & Astronomy

1st, Lakshmi Raju, Alabama School of Fine Arts
"Development of an Inexpensive Spectrophotometer and a Matlab Spectral

Analysis Program"

2nd, Ellen Price, Jefferson County International Baccalaureate School
"Hidden Sounds: The Effect of Cellular Phone Transmission on Human Voice Harmonic ..."

3rd, Pasley Graham and Mark Gacek, McGill Toolen Catholic High School
"Shoe Friction Investigation"

3rd, Chase Laurendine, Pope John Paul II Catholic High School
"Wind Turbines Alternative Designs To Decrease Sound-Pressure"

3rd, Michelle Rule, Life Christian Academy
"Measuring a Change in Luminous Flux of Ionized Noble Gases with Five Different Electrical ..."

4th, Collis Barefield and Sam Street, Wetumpka High School
"Good Vibrations"

4th, Andrew Baxley, Murphy High School
"Futbol Fraud"

4th, Anna Grider, Covenant Christian Academy
"All Shook Up Driving Over Speed Bumps"

4th, Robert Inhulsen, Patrician Academy
"Batter Up"

Plant Science

1st, Rebecca Denson, Murphy High School
"The Transpiration Effect II"

2nd, Zehrgio Mones, Murphy High School
"A Shockin' Discovery"

3rd, Kate Cochran, Brooks High School
"Getting to the ROOT of the Problem"

3rd, Khushbu Patel, Murphy High School
"Hey Banana, Ripen That Apple!"