

# Category Winners



60th Annual State Science and Engineering Fair of Florida

March 31st, April 1st & 2nd, 2015

Lakeland Center, Lakeland

## Junior

## Behavioral and Social Sciences

### Recognition

**Students Name(s):** Bridget N Romeiko; Peyton M Addison

**School:** Brown Barge Middle, **Region:** West Panhandle

**Title:** Is It Sugar If It's Sweet?

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**Students Name(s):** Bailey Harkins

**School:** Buchanan Middle School, **Region:** Hillsborough

**Title:** Relationship Between Home Prices and School Grades

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**Students Name(s):** Grace C Jackson

**School:** Deerlake Middle School, **Region:** Capital

**Title:** Light Level and Slope of Substrate Preferred by Crickets

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**Students Name(s):** Megan I Johnston

**School:** Manatee High School, **Region:** Lockheed Martin Manatee

**Title:** Reading: Normal vs Speeding

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**Students Name(s):** Alexander R Henley

**School:** CAT/ Lakewood High School, **Region:** Pinellas

**Title:** Spot the Difference: Reaction Time of Color vs Object Disappearance Change

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### Honorable Mention

**Students Name(s):** Quin Baker

**School:** Saint Paul Catholic School, **Region:** West Panhandle

**Title:** Colored Overlays for a Reason: Irlen Syndrome

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**Students Name(s):** Daniel T Glod; Mark E Calvin

**School:** Alice B. Landrum Middle School, **Region:** St. Johns

**Title:** Everyday Efficiency: How Changing Methodologies Can Affect Your Life

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**Students Name(s):** Abhimanyu Banerjee

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** What Makes us Happy?

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**Students Name(s):** Tricia K McAuley; Holley Meaney; Lauren Beall

**School:** Pensacola High School, **Region:** West Panhandle

**Title:** The Effect of Age and Gender on the Accuracy of Eyewitness Testimonies

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**Students Name(s):** Eve R Glenn

**School:** Niceville High School, **Region:** East Panhandle

**Title:** Engineering Learning Connections: The Impact of Tactile Manipulative Apparatuses on the Abecedarian Behavioral Assessment of Pattern Building, Focus and Retention

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**Students Name(s):** Hazen D Williams  
**School:** Port Charlotte High School, **Region:** Thomas Alva Edison  
**Title:** Finding and Defining the Correlation Between Inattentional Blindness, Gender, and Age

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**Students Name(s):** Margarita E Rexach  
**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland  
**Title:** Are Abstract and Concrete Thinkers Drawn to Certain School Courses?

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#### Fourth Place

**Students Name(s):** Ella M Wolgamott  
**School:** Breakfast Point Academy, **Region:** Three Rivers  
**Title:** How the Cookie Crumbles

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**Students Name(s):** SriVarsha Katoju  
**School:** Williams Middle Magnet School, **Region:** Hillsborough  
**Title:** Stereotypical Female Athletes

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**Students Name(s):** Nathan Impreso  
**School:** Challenger K8, **Region:** Hernando  
**Title:** The Effect of the Amygdala on the Ability to Assess Risk

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**Students Name(s):** Connor L Cleveland  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Total Recall

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**Students Name(s):** Hannah N Knight  
**School:** Lake City Middle School, **Region:** Suwannee Valley  
**Title:** Can You Remember?

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**Students Name(s):** Jacob Pettijohn; Vivian C Johnson  
**School:** Pensacola High School, **Region:** West Panhandle  
**Title:** How Social Media Impacts Teenagers and their Views on Education

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**Students Name(s):** Matthew S Hutchinson  
**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal  
**Title:** Metacognition of Spatial Intelligence

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**Students Name(s):** Zara E Joykutty  
**School:** American Heritage High School, **Region:** Broward  
**Title:** The Differences in Brain Perfusion Between Children with PTSD, GAD, or OCD in Various Parts of the Brain

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**Students Name(s):** Brandon M Williams  
**School:** Belleview High School, **Region:** Big Springs  
**Title:** Olympics Year 3: Training for Gold

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**Students Name(s):** Elizabeth A Smith  
**School:** Hagerty High School, **Region:** Seminole  
**Title:** Effects of Cognitively Priming Speech

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**Third Place**

**Students Name(s):** Sarah A Bickel  
**School:** Storm Grove Middle School, **Region:** Indian River  
**Title:** The Stroop Effect: Will a Mislabeled Horse Steer Your Brain Off Course?

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**Students Name(s):** Hannah Caldi  
**School:** Challenger K8, **Region:** Hernando  
**Title:** The Effect of Different Genres of Music on Accuracy of Recall

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**Students Name(s):** Emily G Hinton  
**School:** Community Leadership Academy, **Region:** Capital  
**Title:** Small Group Optimization

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**Students Name(s):** Katherine N Lyons  
**School:** Maclay School, **Region:** Capital  
**Title:** Do Blueberries or Strawberries in Diet Affect *Drosophila melanogaster*?

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**Students Name(s):** Lila Mish  
**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach  
**Title:** Is Stress the New Drug? An Analysis on the Effects of Stress on the Prefrontal Cortex and the Addicted Brain

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**Students Name(s):** Fahad Ahmed  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** An Analysis on the Factors Affecting The Responses to the Narcissistic Personality Inventory

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**Students Name(s):** Noopur Ranganathan  
**School:** Trinity Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Analysis of Peripheral Vision to Aid the Reading Process in Patients with Macular Degeneration

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**Students Name(s):** Isabel M Torres  
**School:** The Villages Charter High School, **Region:** Big Springs  
**Title:** Do Hippocampal Place Cells Respond Differently to Visual Cues That Vary in Size and Perspective?

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**Second Place**

**Students Name(s):** Alyssa Alvarez  
**School:** Alexander D. Henderson University School, **Region:** Palm Beach  
**Title:** Are Musicians Better Mathematicians?

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**Students Name(s):** Thelwell C Lloyd  
**School:** North Marion Middle School, **Region:** Big Springs  
**Title:** Viewing Time vs Perception

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**Students Name(s):** Ashley N Diaz  
**School:** Westminster Christian School, **Region:** South Florida  
**Title:** The Effect of Year in School Upon Cheating Rates

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**Students Name(s):** Harrison G Snowden; Jordan L Bartfield  
**School:** Ponte Vedra High School, **Region:** St. Johns  
**Title:** Correlation Between Working Memory Levels and Reading Comprehension Scores in Paper vs Computerized Testing

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**Students Name(s):** Nikhil S Patel  
**School:** Oviedo High School, **Region:** Seminole  
**Title:** Craniometrix: Using Sensory Dissonance to Measure Cognitive Decline, Year 3

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#### **First Place**

**Students Name(s):** Isabella G Mark  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** What Variables Affect Reaction to the Uncanny Valley?

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**Students Name(s):** Jordan M Gattuso  
**School:** Bayside High School, **Region:** Brevard: South  
**Title:** The Effects of Diet on the Progression of Neurodegeneration in Fruit Flies, *Drosophila melanogaster*

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## Junior

## Biochemistry

### Recognition

**Students Name(s):** Alayna E Spolski

**School:** Max Bruner Jr Middle School, **Region:** East Panhandle

**Title:** Fat Daddys...Humongous Mud Bugs!

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**Students Name(s):** Heather R Thomas

**School:** Berkley Accelerated Middle School, **Region:** Polk

**Title:** Do Oranges Increase or Decrease in Vitamin C Content After Being Picked?

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**Students Name(s):** Kevin Duan

**School:** Lincoln Park Academy, **Region:** St. Lucie

**Title:** Development of Rapid Detection for Citrus HLB Infection Using Energy State of Host Plants

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**Students Name(s):** Smita Bhattacharjee

**School:** John A. Ferguson Senior High School, **Region:** South Florida

**Title:** Mass Spectrometric Cellular Composition Analysis of Bone Marrow Derived Mesenchymal Stem Cells (BMMSC)

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**Students Name(s):** Danielle A Obando

**School:** Archimedean Upper Conservatory, **Region:** South Florida

**Title:** ChaC1 Protein Degrades Glutathione in D10 Cells

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**Students Name(s):** Julia E Gallagher

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Visual Detection of miRNA-122

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### Honorable Mention

**Students Name(s):** Nikki D Chan

**School:** Lawton Chiles Middle School, **Region:** Seminole

**Title:** Sugar vs Sugar - The Yeast Event

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**Students Name(s):** Abrielle Marksteiner

**School:** Hidden Oaks Middle School, **Region:** Martin

**Title:** Sneeze Fossils

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**Students Name(s):** Neeraj Patel

**School:** Park Vista Community High School, **Region:** Palm Beach

**Title:** The Effects of Strontium on *Drosophila melanogaster*

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**Students Name(s):** Devanik Biswas

**School:** Stanton College Preparatory School, **Region:** Northeast Florida

**Title:** Alteration in Bio-Photon Counts of Spontaneous Chemiluminescence Exhibited by the Midori Giant Soybean (Glycine Max) Embryonic Axes in the Presence of an Oxidizing or Reducing Agent in Correlation to the Reactive Oxygen Species

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**Students Name(s):** Alejandra Salemi

**School:** Haines City High School, **Region:** Polk

**Title:** Oh Eye See: The Concentration of Proteins in Used Contact Solution

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#### Fourth Place

**Students Name(s):** Karthik K Belthur

**School:** James Weldon Johnson College Preparatory MS, **Region:** Northeast Florida

**Title:** A Feasibility Study of Fiber Glass Composite Prosthesis for Femur with Osteosarcoma

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**Students Name(s):** Nikhil Pilli

**School:** Darnell-Cookman Middle/High School of Medical Arts, **Region:** Northeast Florida

**Title:** The Effect of Protein-Degrading Enzyme (Meat Tenderizer) on the Quantity of Extractable DNA

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**Students Name(s):** Shreya A Singireddy

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** Comparison of Lipofectamine and Ployethlenimine as Transfection in the Huh-7 Cell Line

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**Students Name(s):** Christian S Bilgrien

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** The Study of Interfacial Adhesion Between Proteins and Fatty Acids Immobilized on a Nonpolar Surface

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**Students Name(s):** Suganth Kannan

**School:** American Heritage High School, **Region:** Broward

**Title:** Novel In vivo Spinal Cord Injury Model of Phosphodiesterase 7A & 7B mRNA Expression for Optimal Nanoscale Drug Delivery for Propitious Solubilization

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**Students Name(s):** Keyon Aghajan

**School:** Lake Howell High School, **Region:** Seminole

**Title:** Control of Asian Citrus Psyllids (*Diaphorina citri*) via RNAi

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**Students Name(s):** Jeffrey D Zhu

**School:** Lawton Chiles High School, **Region:** Capital

**Title:** Using *Drosophila melanogaster* to Study Alzheimer-Related Amyloid Proteins

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#### Third Place

**Students Name(s):** Meghan K D'Arcy

**School:** New Smyrna Beach Middle School, **Region:** Tomoka

**Title:** Utilizing Nutritional Supplements with Hydroponic Grow Lights for Lipid Yield in Micro-alga Strain Chlorella

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**Students Name(s):** Lydia L Howald

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** Which Type of Chicken Contains the Highest Amount of Added Antibiotics?

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**Students Name(s):** Emily N Ortiz

**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South

**Title:** Producing Hydrogen Biofuel from the Microalgae, *Chlamydomonas reinhardtii*, Through the Process of Photosynthesis

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**Students Name(s):** Madison J Fish

**School:** Rutherford High School, **Region:** Three Rivers

**Title:** Do Prenatal Vitamins Inhibit Cell Growth and Development? The Effect of Butylated Hydroxyanisole and Butylated Hydroxytoluene on Blastemal Cell Growth and Development

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**Students Name(s):** Jessica J Lee

**School:** Eastside High School, **Region:** Alachua

**Title:** Extraction and Evaluation of Cancer Preventive Properties of Green Algae from Florida

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**Students Name(s):** Daphne Chen

**School:** Palm Harbor University High School, **Region:** Pinellas

**Title:** Synthesis, Characterization and Wound Healing Implication of Curcumin-Silver Nanoparticles

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**Students Name(s):** Aneesh Rahangale

**School:** Maclay School, **Region:** Capital

**Title:** Bringing Light to Befuddling Blastoma

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#### Second Place

**Students Name(s):** Anam Ahmed

**School:** Loggers' Run Middle School, **Region:** Palm Beach

**Title:** GMO: Yes or No?

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**Students Name(s):** Isha Patel

**School:** Holy Trinity Episcopal Academy, **Region:** Brevard: Intracoastal

**Title:** Neutralizing *E.coli* (K12) Bacteria with Silver Nanoparticles

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**Students Name(s):** Christian Strock; Annie Westerfield

**School:** Satellite High School, **Region:** Brevard: Intracoastal

**Title:** Super Fruits Starve Cancer

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**Students Name(s):** Lauren A Houle

**School:** Pine Crest High School, **Region:** Broward

**Title:** Investigation of Autophagy in Huntington's Disease Using a Mutant Huntingtin Knock-In Striatal Cell Line

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**Students Name(s):** Natalie E Barton

**School:** Bayside High School, **Region:** Brevard: South

**Title:** The Effect of Cinnamon Extract on Amyloid-B Peptides for Applications as a Treatment for Alzheimer's Disease, Year II

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#### First Place

**Students Name(s):** Alexander B Setlow

**School:** Oak View Middle School, **Region:** Alachua

**Title:** The Effects of Antioxidants on Fruit Flies Lifespan

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**Students Name(s):** Robert Halfon

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Production of Energy and Fertilizer from Ordinary Waste Materials through Micro-scale Anaerobic Digestion

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**Grand Award Winner**

**Students Name(s):** Robert Halfon

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Production of Energy and Fertilizer from Ordinary Waste Materials through Micro-scale Anaerobic Digestion

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## Junior

## Botany

### Recognition

**Students Name(s):** Sophie L Williams

**School:** Treasure Village Montessori School, **Region:** Monroe

**Title:** The Algal Bloom Advantage

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**Students Name(s):** Jacob M Carnell

**School:** St. Edward's School, **Region:** Indian River

**Title:** Using *Spartina bakeri* to Reduce Influxes of Nitrites and Nitrates in the Water

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**Students Name(s):** Rahul Prasanna

**School:** Holy Trinity Episcopal Academy, **Region:** Brevard: Intracoastal

**Title:** Biochemical Warfare

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**Students Name(s):** Anjana Vishnubhotla

**School:** Avalon Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** The Effect of Compost Tea and Sodium Laureth Sulfate on Plants

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**Students Name(s):** Hannah N Lee

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** Effectiveness of Seaweed as Mulch and Fertilizer

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**Students Name(s):** Krupali R Patel

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Survival of the Fittest: Testing the Allelopathic Effect of Sweet Potatoes: Year 2

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**Students Name(s):** Caroline G Nolan

**School:** Jensen Beach High School, **Region:** Martin

**Title:** Filtering Agricultural Effluent with Fungal Mycelia, Year 2

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### Honorable Mention

**Students Name(s):** Charlotte Justak

**School:** The Weiss School, **Region:** Palm Beach

**Title:** Safe Spray Your Weeds Away

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**Students Name(s):** Jackson R Driskell

**School:** Hardee Junior High School, **Region:** Heartland

**Title:** Does Soil pH Level Affect the Growth of *Phleum pratense L.*?

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**Students Name(s):** Kylie M Lear

**School:** Seminole Middle School, **Region:** Broward

**Title:** Transpiring Milkweed

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**Students Name(s):** Michael Odzer

**School:** Highland Oaks Middle School, **Region:** South Florida

**Title:** Harnessing the Power of the Invasive Australian Pine: The Allelopathic Effect of *Casuarina equisetifolia* and Its impact on Seed Germination and Growth

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**Students Name(s):** Dhenu P Patel

**School:** Maclay School, **Region:** Capital

**Title:** Does BPA Affect Vegetative Propagation in *Plectranthus scutellariodes*?

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**Students Name(s):** Grayson C Campbell

**School:** Covenant Christian School, **Region:** Three Rivers

**Title:** Murder of the Milkweed: *Asclepias curassavica* Natural Gulf Coast Ecology Encourages Total Predation and Extirpation of *Danaus plexippus* Eggs and Larvae

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**Students Name(s):** Miranda A Vogt

**School:** North Broward Preparatory School, **Region:** Broward

**Title:** Systemic Control of *Medicago truncatula*'s Symbiosis with Rhizobia and Endophytes in Split-Root and Non-Split-Root Cultures

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**Students Name(s):** Jared F Worthley

**School:** South Dade Senior High School, **Region:** South Florida

**Title:** What Is the Distribution of Single and Multiple Herbicide Resistance in Waterhemp Populations Across the State of Illinois?

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**Students Name(s):** Nura Abujbara

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Effect of Increasing Wind Velocities on the Rate of Transpiration of Marva Parva Flora Plant

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#### Fourth Place

**Students Name(s):** Riley Z Campbell

**School:** Covenant Christian School, **Region:** Three Rivers

**Title:** Passive Predation: Ecology and Mutualism of the Non-native Carnivorous *Nepenthes alata* in Northwest Florida Habitats

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**Students Name(s):** Colton G Novella

**School:** Crestwell School, **Region:** Thomas Alva Edison

**Title:** Gravitational Force and the Effects on Plant Growth

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**Students Name(s):** Graham Biagiotti

**School:** Fleming Island Elementary, **Region:** Clay Rotary

**Title:** Caution: WiFi Electromagnetic Radiation (EMR) and Plant Life

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**Students Name(s):** Tony Martinez-Choi

**School:** Kanapaha Middle School, **Region:** Alachua

**Title:** Hydroponics: Aeroponics vs Deep Water Culture (DWC)

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**Students Name(s):** Mark M Mansour

**School:** Markham Woods Middle School, **Region:** Seminole

**Title:**

Who Pulls You?

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**Students Name(s):** Liana J van Woesik  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** SOS: Stabilize Our Sand Dunes Does Seaweed Affect the Growth of Beach Elder?

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**Students Name(s):** Sydney A Volenec  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** The Detection of Genetically Modified DNA in Corn-based Food Products

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**Students Name(s):** Lauren J Matthews  
**School:** Niceville High School, **Region:** East Panhandle  
**Title:** Ideal Conditions for Indoor Farming - Year 3 of an Ongoing Study. The Most Effective Sequence of Artificial Light to Yield Maximum Plant Growth and Increase Speed of Development

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**Students Name(s):** Joshua L Glow  
**School:** C. Leon King High School, **Region:** Hillsborough  
**Title:** Comparative De-Nitrification Effectiveness and Phosphate Nutrient Levels of Gravel Terrace and Raft Aquaponic Systems Through Use of *Oreochromis aureus*, *Ocimum basilicum* and *Capsicum annum*, Year 3

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**Students Name(s):** Carson D Poltorack  
**School:** Pine Crest High School, **Region:** Broward  
**Title:** Phytotoxicity and Detection of 'Compound A' and 'Compound B' Application for Treatment of *Candidatus Liberibacter asiaticus* Infection in the Valencia Orange

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**Students Name(s):** Molly E O'Brien  
**School:** Palm Bay High School, **Region:** Brevard: South  
**Title:** Improving Plant Cloning Techniques Through Calcium Exposure

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### Third Place

**Students Name(s):** Angel Tseng  
**School:** Cypress Palm Middle School, **Region:** Collier  
**Title:** Neutralizing Free Radicals: Vitamins as Antioxidants

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**Students Name(s):** Tanna L Campbell  
**School:** Buchanan Middle School, **Region:** Hillsborough  
**Title:** Reduction of *Lepidoptera* (Butterfly and Moth Larvae) on *Solanum lycopersicum* (Tomato Plants) by Incorporating Companion Planting

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**Students Name(s):** Madelyn S White  
**School:** Indian Ridge Middle School, **Region:** Broward  
**Title:** Electrified: Is Varying Exposure Times of 9 Volt Electrical Stimulation Beneficial to Plant Growth?

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**Students Name(s):** Sophia T Castrillon  
**School:** St. Joseph School, **Region:** Polk  
**Title:** The Nematocidal Effects of Poultry Manure in the Growth of Lulo Plants (*Solanum quitoense*)

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**Students Name(s):** Ryan J Graham  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Cannibal Plants!

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**Students Name(s):** Kristy Kim  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** Exploring the Phylogenetic Affiliations and Trophic Mode of *Trappeindia himalayensis*

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**Students Name(s):** Geoffrey Zheng  
**School:** Lincoln Park Academy, **Region:** St. Lucie  
**Title:** The Search for Glucan Synthase-Like Gene in Grapefruit Responsible for Callose Accumulation During HLB Infection

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**Students Name(s):** Haniya Shareef  
**School:** Lincoln Park Academy, **Region:** St. Lucie  
**Title:** How can Efficacy of Potential Biological Controls Against *Mikana micrantha* be Enhanced?

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**Students Name(s):** Kimberly T Do  
**School:** Strawberry Crest High School, **Region:** Hillsborough  
**Title:** The Effect of pH on Duckweed Plants' (*Lemna minor*) Ability to Increase Dissolved Oxygen Content in Water

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#### Second Place

**Students Name(s):** Brindha P Rathinasabapathi  
**School:** Abraham Lincoln Middle School, **Region:** Alachua  
**Title:** Arsenic in Rice: Can Rinsing Rice in Water Reduce Iron as well as Arsenic?

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**Students Name(s):** Minaal Murshid  
**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland  
**Title:** A Comparison Between the Photosynthetic/Oxygen Production Rate of Variegated vs Non-variegated Plants

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**Students Name(s):** Rohan Jakhete  
**School:** Murray Middle School, **Region:** Martin  
**Title:** Testing the Viability of Injecting Air as an Alternative Fertilizer

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**Students Name(s):** Tarun Neelevanna  
**School:** Dr. David L. Anderson Middle School, **Region:** Martin  
**Title:** Nutty Herbicides

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**Students Name(s):** Peter D Jones  
**School:** Olivet Private School, **Region:** St. Lucie  
**Title:** Anti-microbials: The Cure of HLB (Greening Disease) in Citrus

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**Students Name(s):** Julia G Canady  
**School:** Lakeland Christian School, **Region:** Polk  
**Title:** Weed Warfare: Investigating Allelopathy Year 5

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**Students Name(s):** Gabriela F Sullivan  
**School:** Vanguard High School, **Region:** Big Springs  
**Title:** Spectrophotometric Analysis of the Effect of N-(4-hydroxyphenyl) Acetamide on the Photosynthetic Ability of *Iris virginica*

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#### First Place

**Students Name(s):** Dmitri R Morales  
**School:** Archimedean Middle School Conservatory, **Region:** South Florida  
**Title:** Save the Waste?

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**Students Name(s):** TJ Kaminsky  
**School:** Alice B. Landrum Middle School, **Region:** St. Johns  
**Title:** The Disruption of Circadian Rhythms in *Ocimum basilicum L*, Paralleling the Human Response

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**Students Name(s):** Kacey L Mewborn  
**School:** Lakeland Christian School, **Region:** Polk  
**Title:** Investigating Asian Citrus Psyllids

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**Students Name(s):** Howard A Royce  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** The Effects of UVA Radiation on the Production of Oxygen in *Chlamydomonas* and *Ankistrodesmus*

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**Grand Award Winner**

**Students Name(s):** Kacey L Mewborn  
**School:** Lakeland Christian School, **Region:** Polk  
**Title:** Investigating Asian Citrus Psyllids

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# Category Winners



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## Junior

## Chemistry

### Recognition

**Students Name(s):** Dylan W Davis

**School:** Hardee Junior High School, **Region:** Heartland

**Title:** Does *Phleum pratense* Mixed with Cow Excreta Affect the Production of Methane Gas? Year Two

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**Students Name(s):** Carson S Brown

**School:** Summit Christian School, **Region:** Thomas Alva Edison

**Title:** C It Again: A Second Year Study Concerning Ascorbic Acid Degradation in Orange Juice Samples Tested in Glass and High Density Polyethylene Bottles Using Titration

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**Students Name(s):** Karlei Kongsiri

**School:** Shorecrest Preparatory School, **Region:** Pinellas

**Title:** Temperature's Effect on Enzyme Efficiency

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**Students Name(s):** Liam P Warren

**School:** Resurrection Catholic School, **Region:** Polk

**Title:** Can You Pass the Chromium?

---

**Students Name(s):** Haley S Jezewski

**School:** Olivet Private School, **Region:** St. Lucie

**Title:** The Effects of Dyes on Natural vs Synthetic Fibers

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**Students Name(s):** Savannah L Woodall

**School:** Union County High School, **Region:** Suwannee Valley

**Title:** Milk: Which Color Does A Body Good?

### Honorable Mention

**Students Name(s):** Liam R Livingston

**School:** Storm Grove Middle School, **Region:** Indian River

**Title:** Reflection Collection

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**Students Name(s):** Joseph A Mendonca

**School:** Pioneer Middle School, **Region:** Broward

**Title:** Leaf Pigments

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**Students Name(s):** Alex C Homs

**School:** The Villages Charter Middle School, **Region:** Big Springs

**Title:** Can Ferrofluid Help Clean Up Oil Spills in the Ocean?

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**Students Name(s):** Abigail H Soliven

**School:** Cocoa High School, **Region:** Brevard: Mainland

**Title:** What Effect Does Water Type Have on the Oxidation of Cast Iron Spheres Pickled with a Hydrochloric Acid Bath?

**Students Name(s):** Carle Dugan  
**School:** Palm Beach Central High School, **Region:** Palm Beach  
**Title:** The Effect of Salinity Concentrations on the Ability to 3-D Print Hydrogels

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**Students Name(s):** Anmol Warman  
**School:** Academy at the Lakes, **Region:** Pasco  
**Title:** Tuning the Properties of Porous Covalent Porphyrin Frameworks (PCPF) by Using Various Metalloporphyrin Building Blocks

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**Students Name(s):** Diana P Ortiz  
**School:** Haines City High School, **Region:** Polk  
**Title:** The Determination of Percentage of Mass of Iron Content in Ferrous Sulfate Dietary Supplements

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**Students Name(s):** Kyle A Coady  
**School:** South Sumter High School, **Region:** Big Springs  
**Title:** Waste to Water: An Efficient Use of Orange Peels for the Adsorption of Textile Dyes

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#### Fourth Place

**Students Name(s):** Daniell Perez  
**School:** Alexander D. Henderson University School, **Region:** Palm Beach  
**Title:** Can the Alkaline Fuel Cell (AFC) Create Electricity with the Electrons of Hydrogen Produced by the Electrolysis of Water?

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**Students Name(s):** Roma B Parmar  
**School:** Mann Middle School, **Region:** Hillsborough  
**Title:** Diabetic? Don't Drink It!

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**Students Name(s):** Dhruv Manik  
**School:** Hill-Gustat Middle School, **Region:** Heartland  
**Title:** Flour Power

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**Students Name(s):** Luke R Butler  
**School:** St. Joseph's Catholic School, **Region:** Northeast Florida  
**Title:** Sugar Substitutes and the Growth of Yeast

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**Students Name(s):** Shannon M Nannozi  
**School:** Howard W. Bishop Middle School, **Region:** Alachua  
**Title:** Do Salts of Monovalent Cations of Equal Concentration Melt Ice and Also Flocculate Clay Particles in Suspense Equally?

---

**Students Name(s):** Lindsay A Baldwin  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** Crime Scene Cover-Up?

---

**Students Name(s):** Jacqueline Chen  
**School:** Suncoast Community High School, **Region:** Palm Beach  
**Title:** Evaluating Methods of Measuring Mercury in Skin Creams

---

**Students Name(s):** Emily E Schwartz  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** Can Pheromones Maintain Their Chemical Integrity Even Among Other Pheromones?

---

**Students Name(s):** Andrew Thomas  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** Spinning Cell Scaffolding: Year 2

---

**Students Name(s):** Jamie A Kustra  
**School:** Academy of Environmental Science, **Region:** Citrus  
**Title:** Plastic Not Included

---

**Students Name(s):** Blake A Gardner  
**School:** Orlando Science Schools, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Self-healing Polymers: What Factor Affects the Speed at Which Polymers Self-heal?

---

### Third Place

**Students Name(s):** Patrick Smith  
**School:** Saint Paul Catholic School, **Region:** West Panhandle  
**Title:** Does Being Green Really Clean?

---

**Students Name(s):** Helen Kemp  
**School:** Earnest Ward Middle School, **Region:** West Panhandle  
**Title:** Going Green As You Clean

---

**Students Name(s):** Joshua T Fernandez  
**School:** Alice B. Landrum Middle School, **Region:** St. Johns  
**Title:** Fireball!

---

**Students Name(s):** Andrew O Ashley  
**School:** South Sumter Middle School, **Region:** Big Springs  
**Title:** Recycled Roads

---

**Students Name(s):** Linash Thomas  
**School:** Lake City Middle School, **Region:** Suwannee Valley  
**Title:** Concentration of Dissolved Oxygen Content in Water

---

**Students Name(s):** Kishan Avaiya  
**School:** Strawberry Crest High School, **Region:** Hillsborough  
**Title:** The Effect of Combining *Moringa oleifera* Extract with Reduced Amounts of Alum to Facilitate Destabilization of Suspended Particle Charges in Particle Agglomeration of Turbid Water

---

**Students Name(s):** Zizhao S Wang  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** A Comparison of Graphene Production Methodologies

---



**Students Name(s):** Brandon M Wummer  
**School:** Saint Thomas Aquinas High School, **Region:** Broward  
**Title:** Creating a Hydrogen Fuel Cell with Salt Water

---

**Students Name(s):** Case H Emerson  
**School:** Union County High School, **Region:** Suwannee Valley  
**Title:** Meat! It's What's For Dinner!

---

#### Second Place

**Students Name(s):** James W. Fesik  
**School:** Pine Ridge Middle School, **Region:** Collier  
**Title:** Amounts of Covalent Bonds vs Clarity of Fingerprint

---

**Students Name(s):** Liam A Ordner  
**School:** Okaloosa STEMM Academy, **Region:** East Panhandle  
**Title:** Determining Potentials of Reduction in an Electrochemical Cell with Different Cathodes

---

**Students Name(s):** Olivia A Reidy  
**School:** San Jose Catholic Grade School, **Region:** Northeast Florida  
**Title:** Safer Scrubs Fluro-Acrylic Emulsion and Healthcare Worker Safety

---

**Students Name(s):** Feng Ji; Wenduo Nie  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** Chemical-doping on Photoelectrochemical Cells

---

**Students Name(s):** Srimayi Tenali  
**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland  
**Title:** UV Assisted Photocatalytic Water Treatment Using Nanostructured Metal Oxide Semiconductors

---

**Students Name(s):** Ivanna L Rocha; Anisa A Khan  
**School:** Palm Bay High School, **Region:** Brevard: South  
**Title:** The Transformation of Crude Oil Produced by Pyrolysis of LDPE, HDPE and PP Plastic

---

#### First Place

**Students Name(s):** Caylee J Hill  
**School:** Murdock Middle School, **Region:** Thomas Alva Edison  
**Title:** A Comparison of Alkaloids from the Vinca Species Grown in Different Locations

---

**Students Name(s):** Tristen A Chang  
**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal  
**Title:** Is Your Baby Ingesting Bisphenol A?

---

**Students Name(s):** Elizabeth P Donoway  
**School:** Pine Crest High School, **Region:** Broward  
**Title:** Effects of Surface Morphology on Enhanced Photoelectrochemical Properties of Nanocrystals

---

**Students Name(s):** Bo You

**School:** Miami Palmetto Senior High School, **Region:** South Florida

**Title:** Effects of Morphology and Illumination on the Catalytic Properties of Gold Nanoparticles

---

**Grand Award Winner**

**Students Name(s):** Caylee J Hill

**School:** Murdock Middle School, **Region:** Thomas Alva Edison

**Title:** A Comparison of Alkaloids from the Vinca Species Grown in Different Locations

---

**Students Name(s):** Elizabeth P Donoway

**School:** Pine Crest High School, **Region:** Broward

**Title:** Effects of Surface Morphology on Enhanced Photoelectrochemical Properties of Nanocrystals

---

# Category Winners



60th Annual State Science and Engineering Fair of Florida

March 31st, April 1st & 2nd, 2015

Lakeland Center, Lakeland

## Junior

## Computer Science

### Recognition

**Students Name(s):** Makayla N Thompson; Heather Zdyb

**School:** Brown Barge Middle, **Region:** West Panhandle

**Title:** One Eyed Robot or Two Eyed Robot?

---

**Students Name(s):** Jackson A Cook

**School:** C. W. Ruckel Middle School, **Region:** East Panhandle

**Title:** Wi-Fi Obstruction: Which Material Interferes with Signal Strength the Most?

---

**Students Name(s):** Kathy Nguyen

**School:** The Villages Charter High School, **Region:** Big Springs

**Title:** Immersive Virtual Environment

---

**Students Name(s):** Amanda M Snyder

**School:** Union County High School, **Region:** Suwannee Valley

**Title:** Genetics Beyond The Sims: A Java Simulation of Mendelian Inheritance

---

### Honorable Mention

**Students Name(s):** Deegan G Tarrillo

**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal

**Title:** Communication Protocol: Self-Driving Vehicles at Intersections

---

**Students Name(s):** Michael J Compton

**School:** Indian Trails Middle School, **Region:** Seminole

**Title:** Netflix and Popcorn Don't Mix - The Impact of Microwaves on Wifi

---

**Students Name(s):** Will Bertrand

**School:** Suncoast Community High School, **Region:** Palm Beach

**Title:** An Instrument for the Live Manipulation of Specific Harmonics of an Acoustic Source

---

**Students Name(s):** Shareen Patel

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** 3T Magnetic Resonance Imaging and Post-processing of Subcutaneous Adipose Tissue Macrostructure

---

### Fourth Place

**Students Name(s):** Matthew T Eyron; Jacob M Graham

**School:** Celebration K-8 School, **Region:** Osceola

**Title:** Cyber Safe

---

**Students Name(s):** Lauren K Enten  
**School:** Saint Thomas Aquinas High School, **Region:** Broward  
**Title:** Epidemiology of Ebola A Monte Carlo Simulation

---

**Third Place**

**Students Name(s):** John B Caven  
**School:** Julia Landon College Preparatory Middle School, **Region:** Northeast Florida  
**Title:** The Effect of Different Algorithms on Lacrosse Simulation Difficulty

---

**Students Name(s):** Eiko Alzamora  
**School:** The Sagemont School, **Region:** Broward  
**Title:** Private Phone Calls

---

**Students Name(s):** Yashasvi C Bhat  
**School:** Orlando Science Schools, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Exploring RFID: Which Material Best Protects Your Information?

---

**Students Name(s):** Anthony Olive  
**School:** Palm Beach Central Community High School, **Region:** Palm Beach  
**Title:** Developing a Comprehensive, Efficient, and Multi-Layered Navigation Algorithm for Coordinating Driverless Vehicles

---

**Students Name(s):** George R Nelson  
**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal  
**Title:** SCADA Cyber Defense

---

**Students Name(s):** Courtney A Astore  
**School:** Cardinal Mooney Catholic High School, **Region:** Sarasota  
**Title:** MEDI-Profler: A Computational Classifier that Identifies Determinant Chemical Features and Their Influences on Pharmaceutical Drug Properties

---

**Second Place**

**Students Name(s):** Alexis Base  
**School:** Alexander D. Henderson University School, **Region:** Palm Beach  
**Title:** How Would AUV's Identify and Record Lionfish in Florida?

---

**Students Name(s):** Jad Helmy  
**School:** Lincoln Middle School, **Region:** Alachua  
**Title:** Alzimio: Using Smartphones' Sensors to Help Dementia and Autism Patients

---

**Students Name(s):** Amir Helmy  
**School:** Eastside High School, **Region:** Alachua  
**Title:** Detecting Falls Through Mobile Algorithms (Seizario App)

---

**Students Name(s):** Mitchell A Hammack  
**School:** Oviedo High School, **Region:** Seminole  
**Title:** Optimization of School Bus Disembarkment using Python Based Discrete Event Simulation

---

**First Place**

**Students Name(s):** Megan M Landin

**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South

**Title:** Step-by-Step

---

**Students Name(s):** Sapna K Patel

**School:** Oviedo High School, **Region:** Seminole

**Title:** Wubee - An Autism Destroying Avatar

---

**Grand Award Winner**

**Students Name(s):** Sapna K Patel

**School:** Oviedo High School, **Region:** Seminole

**Title:** Wubee - An Autism Destroying Avatar

---

# Category Winners



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## Junior

## Earth and Space Sciences

### Recognition

**Students Name(s):** Blair C Heckbert

**School:** St. John Vianney Catholic School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Ocean Erosion

---

**Students Name(s):** Julia M Pagan

**School:** Montford Middle School, **Region:** Capital

**Title:** The Effect of Ground Cover on Soil

---

**Students Name(s):** Ashlyn Merchant

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** The Difference Between Soil CO2 Decomposition in Flooded and Non-Flooded Pine Flatlands

---

**Students Name(s):** Caroline E Dixon

**School:** Crystal River High School, **Region:** Citrus

**Title:** Is the Use of Hydraulic Fracturing Causing an Increase in the Number of Seismic Events in the United States

---

### Honorable Mention

**Students Name(s):** William N Taylor

**School:** Varsity Middle School, **Region:** Thomas Alva Edison

**Title:** Does Soil Affect The pH and Conductivity Levels of Water?

---

**Students Name(s):** Emma K Butler

**School:** Saint John Paul II Catholic School, **Region:** Citrus

**Title:** Don't Fade Away

---

**Students Name(s):** Nirja N Shah

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Particle Sizes of Saturn's Rings

---

### Fourth Place

**Students Name(s):** Bhavani Sivakumaar

**School:** North Marion Middle School, **Region:** Big Springs

**Title:** Protection Against Tsunamis

---

**Students Name(s):** Cassandra M Ruiz

**School:** Space Coast Jr/Sr High School, **Region:** Brevard: Mainland

**Title:** Pollution Contribution

---

**Students Name(s):** Katie Lewis

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** Role of *Pogonomyrex barbatus* in the Creation of an Economical Route for the Sequestration of Atmospheric CO<sub>2</sub> in Basalt Sediment

---

**Students Name(s):** Carlie M Taylor

**School:** The Villages Charter High School, **Region:** Big Springs

**Title:** Impact of Climate Irregularities on *Pinus elliotii* Ring Chronologies

---

### Third Place

**Students Name(s):** Cassandra Messinger

**School:** St. Mark's Episcopal School, **Region:** Palm Beach

**Title:** Desalination Situation

---

**Students Name(s):** Elaine C Daffron

**School:** St. Mary's Catholic School, **Region:** Brevard: Intracoastal

**Title:** Tsunami Safe Structures

---

**Students Name(s):** Rachel C Nasby

**School:** Sanford Middle School, **Region:** Seminole

**Title:** Saving The World's Oceans With Ferrofluid

---

**Students Name(s):** Robert D Breininger

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** How Do Submerged Aquatic Vegetation (SAV) Dynamics Vary with Depth, Time and Urbanization in the Indian River Lagoon System (IRL)?

---

### Second Place

**Students Name(s):** Fiona E Bown

**School:** Okaloosa STEMM Academy, **Region:** East Panhandle

**Title:** Make It Rain

---

**Students Name(s):** Kenneth M West

**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South

**Title:** Improving Floating Foundations

---

**Students Name(s):** Daniella D Bernadel

**School:** Palm Bay High School, **Region:** Brevard: South

**Title:** The Influence of Increased Gibberellic Acid on the Cell Growth and CO<sub>2</sub> Sequestration by *Cyclotella*

---

### First Place

**Students Name(s):** MaryAlice D Young

**School:** San Jose Catholic Grade School, **Region:** Northeast Florida

**Title:** Sunscreen SPF Effectiveness in the Presence of UVB Rays from the Sun and Artificial Light

---

**Students Name(s):** Danielle N Farinella

**School:** Holy Trinity Episcopal Academy, **Region:** Brevard: Intracoastal

**Title:** Using Sugar Polymers For Plastic Alternatives

---



# Category Winners



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## Junior

## Engineering

### Recognition

**Students Name(s):** Ryan J Warner; Jacob T Hill

**School:** Woodrow Wilson Middle School, **Region:** Hillsborough

**Title:** Battery Consumption of Multi-Rotor Helicopters Based on the Number of Motors

---

**Students Name(s):** Arielle Benayoun

**School:** Plantation Middle School, **Region:** Broward

**Title:** Which Type Of Dampener Will Absorb The Most Vibration?

---

**Students Name(s):** Madeline M Murch

**School:** Bishop Larkin Catholic School, **Region:** Pasco

**Title:** Who's the Strongest of Them All?

---

**Students Name(s):** Claire R Levin

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** The Arduino Car

---

**Students Name(s):** Steven Vokoun

**School:** Murray Middle School, **Region:** Martin

**Title:** Wind Working for Us

---

**Students Name(s):** Brianna Garcia

**School:** Windy Hill Middle School, **Region:** Lake

**Title:** Efficient Insulation

---

### Honorable Mention

**Students Name(s):** Sai T Rachumalla

**School:** East Naples Middle School, **Region:** Collier

**Title:** Testing Light Bulb Efficiency: Choose Wisely

---

**Students Name(s):** Hector U Fernandez

**School:** Saint Ann School, **Region:** Collier

**Title:** The Aeronautical Principle of Forced Air Propulsion

---

**Students Name(s):** Michael Pertler

**School:** Southwestern Middle School, **Region:** Tomoka

**Title:** Top That: Which Insulating Material Works Most Efficiently?

---

**Students Name(s):** Grant F Reidy

**School:** San Jose Catholic Grade School, **Region:** Northeast Florida

**Title:** What Blocks Cell Phone Signals?

---

**Students Name(s):** Sebastian Barria  
**School:** Lawton Chiles Middle Academy, **Region:** Polk  
**Title:** The Accuracy of Laser Communication

---

**Students Name(s):** Brenden M Brubaker; Carson H Chavez  
**School:** Ascension Catholic School, **Region:** Brevard: Mainland  
**Title:** Soft Robot

---

**Students Name(s):** Alexis R Hopkins  
**School:** Fort Walton Beach High School, **Region:** East Panhandle  
**Title:** The Diagnosis: Disease Identification of Airborne Pathogens Using Mobile Non-Invasive Techniques

---

**Students Name(s):** Christian J Irving  
**School:** Home School, Lee, **Region:** Thomas Alva Edison  
**Title:** Step Charge: A Discrete Insole that Seamlessly Creates Energy with Everyday Movements

---

**Students Name(s):** Michael G Nee; Cole D Hewett; Anthony P Frecona  
**School:** Orange Park High School, **Region:** Clay Rotary  
**Title:** Can a Robot See Underwater?

---

**Students Name(s):** Pierre F Angibaud  
**School:** Eastside High School, **Region:** Alachua  
**Title:** To Roll or Not to Roll: Design Evaluation of Office Chair Concept

---

#### Fourth Place

**Students Name(s):** Michael J Dina  
**School:** Pine Ridge Middle School, **Region:** Collier  
**Title:** The Truss-ty Bridge

---

**Students Name(s):** Shane R Durepo  
**School:** Oasis Charter Middle School, **Region:** Thomas Alva Edison  
**Title:** Thin Film Amorphous vs Monocrystalline: A Carbon Footprint Analysis of Photovoltaic Cells

---

**Students Name(s):** Sephora G Affa  
**School:** San Jose Catholic Grade School, **Region:** Northeast Florida  
**Title:** Critical Connection Points of a Pratt Truss Bridge

---

**Students Name(s):** Zeynep Y Waheed  
**School:** Aventura Waterways K-8 Center, **Region:** South Florida  
**Title:** Tidal Energy Generators: Submerged Stationary Turbines vs Dynamic Turbines

---

**Students Name(s):** Stephen F Nazef  
**School:** Howard W. Bishop Middle School, **Region:** Alachua  
**Title:** Radiant Insulation - Keeping the World Cool and Clean

---

**Students Name(s):** Christian A Herman  
**School:** Lakeland Christian School, **Region:** Polk  
**Title:** Investigating the Effect of a 3D Printed Product Designed to Improve the Handwriting of Young Children

---

**Students Name(s):** Seshan Jayapregasham  
**School:** Lawton Chiles Middle School, **Region:** Seminole  
**Title:** Energy Harvesting to Track Marine Animals

---

**Students Name(s):** Trent C Walker  
**School:** Trinity Catholic School, **Region:** Capital  
**Title:** Lifeboat for Waterlogged Devices

---

**Students Name(s):** Colton C Lewis  
**School:** Bradenton Christian School, **Region:** Lockheed Martin Manatee  
**Title:** Electromagnetic Rail Launch System

---

**Students Name(s):** Nicholas J Fichera  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** Conducting Atomic Force Microscopy on Superhydrophobic Plants for the Development of Bio-inspired Self Cleaning Surfaces

---

**Students Name(s):** Meagan L Shivers  
**School:** Hardee High School, **Region:** Heartland  
**Title:** Raising the Output of a Photovoltaic Solar Panel Array Using a Solar Tracking System

---

**Students Name(s):** Allison Smuk  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** What A Drag: Winglets vs Extensions

---

**Students Name(s):** Kelly A Laplante  
**School:** Academy of Environmental Science, **Region:** Citrus  
**Title:** Magnetically Enhanced Savonious Wind Turbine

---

**Students Name(s):** Alexandra K Daley  
**School:** Vanguard High School, **Region:** Big Springs  
**Title:** Utilizing Peat and Humic Acid as Mediators in Low Cost Microbial Fuel Cells to Benefit Third World Countries

---

**Students Name(s):** Milton Zhang; Daniel A Siciliano; Muniba M Khan  
**School:** Crooms Academy of InformationTechnology, **Region:** Seminole  
**Title:** The Creation of a Carbon Nanotube Filter for Pathogens, Toxins, and the Filtration of Water

---

**Students Name(s):** Mamoon H Syed  
**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland  
**Title:** Design of an Increased Efficiency UAV by Integrating a VTOL Platform with Fixed Wing Capabilities

---

### Third Place

**Students Name(s):** Calvin S Boole  
**School:** Saint Mary Catholic School, **Region:** East Panhandle  
**Title:** Minimum Airway Width Requirement for Routine Wind Conditions Using the DJI Phantom 2 Quad Copter

---

**Students Name(s):** Frank R Daldine  
**School:** Saint Mary Catholic School, **Region:** East Panhandle  
**Title:** Opposites Attract

---

**Students Name(s):** Logan E Thursby  
**School:** Shoal River Middle School, **Region:** East Panhandle  
**Title:** Hands Free Driving: Developing an Autonomous Vehicle

---

**Students Name(s):** Katie Murphy  
**School:** Randall Middle School, **Region:** Hillsborough  
**Title:** Global Knitworks: The Strength is in the Stitch - Stronger Screens for a Safer Future

---

**Students Name(s):** Jenna L Burns  
**School:** American Heritage Middle School, **Region:** Broward  
**Title:** Underwater Turbines as a Renewable Energy Source

---

**Students Name(s):** Jordan M Mugmon; Jack I Owens  
**School:** Saint Margaret Mary Catholic Church, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** The Personal Air Conditioner-Using Thermoelectric Cooling to Cool the Body

---

**Students Name(s):** Sean Elia  
**School:** Spanish River Community High School, **Region:** Palm Beach  
**Title:** My Solar Garden

---

**Students Name(s):** Daniel C Bobbitt  
**School:** Niceville High School, **Region:** East Panhandle  
**Title:** Go with the Flow - Increasing the Performance of Boundary-Layer Turbines

---

**Students Name(s):** Suhani Jain  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Parameterization of 3D Printing of Biological Structures

---

**Students Name(s):** Matthew B Pekarek  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Sending Multiple Messages at the Same Time Using Faraday Rotation

---

**Students Name(s):** Megan R Erdozain  
**School:** Medical Academy for Science and Technology, **Region:** South Florida  
**Title:** A Novel Prosthetic Design Utilizing Unique Sensory Control System, Brushless Motor Drives, and Worm Gear Mechanisms through Rapid Prototyping Techniques

---

**Students Name(s):** Simon P Tsaoussis  
**School:** Christopher Columbus High School, **Region:** South Florida  
**Title:** The Basic Guide to the Optical Transistor - The Tsaoussis Optical Transistor (TOT)

---

**Students Name(s):** Andrew K Noonan  
**School:** International Baccalaureate School at Bartow High, **Region:** Polk  
**Title:** A Novel Approach to 3D Prototype Production

---

**Second Place**

**Students Name(s):** Timothy W Norman  
**School:** Duncan U. Fletcher Middle School, **Region:** Northeast Florida  
**Title:** Fueling Less Drag

---

**Students Name(s):** Tushar S Shenoy  
**School:** Forest Glen Middle School, **Region:** Broward  
**Title:** A System for Preventing Child Deaths in Cars

---

**Students Name(s):** Isabela V Perdomo  
**School:** Norman S. Edelcup Sunny Isles Beach K-8 Community School, **Region:** South Florida  
**Title:** Catching Waves Using the Power of the Ocean- The Sequel

---

**Students Name(s):** Randa D Shaw  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Sound Bytes

---

**Students Name(s):** Logan Bolick  
**School:** Stone Middle School, **Region:** Brevard: South  
**Title:** The Development and Testing of an Automatic Wildlife Detector

---

**Students Name(s):** Camille A Miles  
**School:** Niceville High School, **Region:** East Panhandle  
**Title:** Triple the Fun In the Sun

---

**Students Name(s):** Vignesh C Bhethanabotla  
**School:** C. Leon King High School, **Region:** Hillsborough  
**Title:** Rare Earth Metal Doped Photocatalysts for Energy and Environmental Applications

---

**Students Name(s):** Jude A Alawa  
**School:** American Heritage High School, **Region:** Broward  
**Title:** Cardiovascular Mechanics: Analyzing the Effects of Glycation and Hydration on the Biomechanical Properties of Aortic Elastin

---

**Students Name(s):** Adam B Snowden  
**School:** Ponte Vedra High School, **Region:** St. Johns  
**Title:** Using an Ultra-Thin High Performance Image Sensor with a Raspberry Pi for Transdermal Analysis of a Pulse Waveform

---

**Students Name(s):** Danielle D Liu  
**School:** Eastside High School, **Region:** Alachua  
**Title:** Bio-inspired Multifunctional Antireflection Coatings With Superior Mechanical Durability

---

**Students Name(s):** Connor D Bolick  
**School:** Bayside High School, **Region:** Brevard: South  
**Title:** Creating a Low Cost Autonomous Nautical Drone Used to Detect Algae Blooms Indicators in the Indian River Lagoon

---

**First Place**

**Students Name(s):** Hannah Herbst  
**School:** Alexander D. Henderson University School, **Region:** Palm Beach  
**Title:** Can Ocean Energy from the Intracoastal Waterway be Collected and Converted into an Environmentally Safe and Sustainable Energy Source?

---

**Students Name(s):** Abdul Hakim Zekri  
**School:** American Youth Academy, **Region:** Hillsborough  
**Title:** Clever Cane

---

**Students Name(s):** Talar V Terzian  
**School:** Howard W. Bishop Middle School, **Region:** Alachua  
**Title:** Treadle Power: An Off-the-Grid Filtered Washing Machine with Hydrodynamic Shear Force

---

**Students Name(s):** Gyro G DelosTrinos  
**School:** Lake City Middle School, **Region:** Suwannee Valley  
**Title:** The Effects of Active Bilge Keel on Ship's Stability

---

**Students Name(s):** Morgan E McAtee  
**School:** Charlotte High School, **Region:** Thomas Alva Edison  
**Title:** Carbon Filtering: Recycling the Carbon Emissions Released by Fossil Fueled Cars

---

**Students Name(s):** Beverly Ge  
**School:** F. W. Buchholz High School, **Region:** Alachua  
**Title:** Novel Chromogenic Vapor Sensors Enabled by Shape Memory Polymers

---

**Students Name(s):** Catherine J Li  
**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** In-Fiber Emulsification of Biodegradable Polymers for Drug Delivery: Year Two

---

**Students Name(s):** Akshay Prasad  
**School:** Seminole High School, **Region:** Seminole  
**Title:** Use of 3-D Scanning to Design Shoe Inserts for Athletes

---

**Grand Award Winner**

**Students Name(s):** Hannah Herbst  
**School:** Alexander D. Henderson University School, **Region:** Palm Beach  
**Title:** Can Ocean Energy from the Intracoastal Waterway be Collected and Converted into an Environmentally Safe and Sustainable Energy Source?

---

**Students Name(s):** Beverly Ge  
**School:** F. W. Buchholz High School, **Region:** Alachua  
**Title:** Novel Chromogenic Vapor Sensors Enabled by Shape Memory Polymers

---

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## Junior

## Environmental Science

### Recognition

**Students Name(s):** Nathan L Barroso

**School:** Horace O' Bryant School, **Region:** Monroe

**Title:** Swimming in Acid: The Effects of Ocean Acidification on Marine Life

---

**Students Name(s):** George F Caulfield

**School:** Liza Jackson Preparatory School, **Region:** East Panhandle

**Title:** That Dirty Dog

---

**Students Name(s):** Emma R Towler

**School:** Lavilla School of the Arts, **Region:** Northeast Florida

**Title:** Which Environmentally-friendly Kitchen Ingredient Reduces Ammonia the Most in River Water?

---

**Students Name(s):** Alvaro J Lopez

**School:** Silver Trail Middle School, **Region:** Broward

**Title:** The Effect of Increased Carbon Dioxide in a Greenhouse Effect Simulation on the Growth of Plants

---

**Students Name(s):** Michelle Beno

**School:** Citrus Springs Middle School, **Region:** Citrus

**Title:** Different Level of Copper Sulfate Effects on Fresh Water

---

**Students Name(s):** Kagen Long

**School:** Dundee Ridge Academy, **Region:** Polk

**Title:** Busting Clays

---

**Students Name(s):** David T Truilo

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** Can Magnetism Be Used to Clean Up Oil Spills?

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**Students Name(s):** Emma G Heise; Arushi Chandok

**School:** Fort Myers High School, **Region:** Thomas Alva Edison

**Title:** *Chlorella vulgaris* as a Bioremediator of Fracking Wastewater

---

**Students Name(s):** Michael J White

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** How Does the Different Shape and Size of a Parabolic Mirror, Directed Toward a Thermoelectric Generator, Change the Amount of Voltage Created?

---

**Students Name(s):** Jonathan F Mirchandani

**School:** American Heritage High School, **Region:** Broward

**Title:** Innovation on the Windmill Revolution

---

**Students Name(s):** Emily M Carr

**School:** Frank W Springstead High School, **Region:** Hernando

**Title:** The Effect of Anthropogenic Factors on Water Quality on Four Riverine Estuaries in the Spring Coast Watershed

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**Honorable Mention**

**Students Name(s):** Andrew D. Foley

**School:** Gulf View Middle School, **Region:** Collier

**Title:** Non-Stick Mowing

---

**Students Name(s):** Rania Chehaitli

**School:** David C. Hinson Middle School, **Region:** Tomoka

**Title:** Which Material Absorbs the Most Oil in Water?

---

**Students Name(s):** Rosemary M Gregg; Aidan J Hailey

**School:** Westwood Middle School, **Region:** Alachua

**Title:** Do Microspheres Pose a Significant Threat to the Environment

---

**Students Name(s):** Natalie M Allen

**School:** Howard Bishop Middle School, **Region:** Alachua

**Title:** Salinity Effects on a Freshwater Plant: Potential Impacts of Climate Change

---

**Students Name(s):** Kevin M Matos

**School:** The Villages Charter Middle School, **Region:** Big Springs

**Title:** Which Pollutant Has the Fastest Solubility in Stagnant Water? -Year 2

---

**Students Name(s):** Kyler B Larsen

**School:** Ft. White High School, **Region:** Suwannee Valley

**Title:** Ultrasonic Algae Control

---

**Students Name(s):** Quinn C Zacharias

**School:** Deland High School, **Region:** Tomoka

**Title:** Rose Bay: A Disaster to a Legacy

---

**Students Name(s):** Azanta K Thakur

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** Remediating Copper Contaminated Water through Rhizofiltration Using *Helianthus annuus*

---

**Students Name(s):** Mayrine F Silva

**School:** Northeast High School, **Region:** Broward

**Title:** Diversity of Nematodes in Bark Beetles and the Threat of the Invaders

---

**Students Name(s):** Maxwell A Fine; Aaron Gimmel

**School:** Allen D. Nease High School, **Region:** St. Johns

**Title:** "Duckweed" vs Beef

---



**Students Name(s):** Anjeli V Nandwani

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** The Effects of *Azadirachta indica* on Whiteflies

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**Fourth Place**

**Students Name(s):** Orion Conolly

**School:** Holley Navarre Middle School, **Region:** West Panhandle

**Title:** Do You Want Some Fresh Salt Water? Designing and Testing A Water Desalinator

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**Students Name(s):** Gavin J Arnold

**School:** River Springs Middle School, **Region:** Tomoka

**Title:** Salinity Levels in Our Waters

---

**Students Name(s):** Thomas A Keller

**School:** Davidsen Middle School, **Region:** Hillsborough

**Title:** Drainage Dilemma: A Study of Various Types of Storm Drain Inlet Covers and Their Effect on Preventing Pollutants From Entering the Storm Drain System

---

**Students Name(s):** Nalin Mehra

**School:** Dr. John Long Middle School, **Region:** Pasco

**Title:** Does Salinity Affect the Amount of Hydroelectricity Produced?

---

**Students Name(s):** Emma N Baumer

**School:** Inverness Middle School, **Region:** Citrus

**Title:** Fertile or Acidic?

---

**Students Name(s):** Michael D Conti

**School:** Maitland Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** The Effects of Plants on Climate Change and Ocean Acidification

---

**Students Name(s):** Anna C Mitchell

**School:** Osceola Middle School, **Region:** Big Springs

**Title:** Frogs Gone Wrong

---

**Students Name(s):** Isabella J Guinta

**School:** Umatilla High School, **Region:** Lake

**Title:** Protection Through Detection

---

**Students Name(s):** Keri A. Mulhern

**School:** Palmetto Ridge High School, **Region:** Collier

**Title:** Algae Analogy: A Catalyst Solution for Ocean Acidification

---

**Students Name(s):** Cheyenne L Dong; Alexi K Dong

**School:** Indian River Charter High School, **Region:** Indian River

**Title:** Increasing Biofuel Production: The Effect of Varied Light Spectrums on the Growth of *Nannochloropsis oculata*

---

**Students Name(s):** Graham P Ungrady  
**School:** The Bolles School, **Region:** Northeast Florida  
**Title:** The Effect of Oxytocin on Plant and Invertebrate Development

---

**Students Name(s):** Samantha Renfroe  
**School:** J.W. Mitchell High School, **Region:** Pasco  
**Title:** The Human Impact on Plant Life: How Acidic and Basic Water Sources Affect Plant Cell Membrane Integrity

---

**Students Name(s):** Taylor N Rejsek  
**School:** Nature Coast Technical High School, **Region:** Hernando  
**Title:** Third Year Study- The Effect of Ocean Acidification of *Aurelia aurita*

---

**Students Name(s):** Peter A Ashley  
**School:** South Sumter High School, **Region:** Big Springs  
**Title:** Prawn Shop Phase 2: An Ecological and Economical Method to Become a Sustainable Population

---

**Students Name(s):** Alexandra K Gabrielski  
**School:** Viera High School, **Region:** Brevard: Mainland  
**Title:** Algae ... The Greener Fuel, Year Four

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#### Third Place

**Students Name(s):** Atlantis Hofstetter  
**School:** Treasure Village Montessori School, **Region:** Monroe  
**Title:** Plastic Tides

---

**Students Name(s):** Rohin P Patel  
**School:** Hill-Gustat Middle School, **Region:** Heartland  
**Title:** Trash to Treasure : Making Cellulosic Ethanol from Waste - A 2nd Year Study

---

**Students Name(s):** Gauri Kasarla  
**School:** American Heritage Middle School, **Region:** Broward  
**Title:** The Effects of Apple Peels, Banana Peels, Tomato Peels, Rice Husks and Turmeric-Root Powder on the Purification of Water

---

**Students Name(s):** Jessica G Boudreau  
**School:** Dayspring Academy Middle School, **Region:** Pasco  
**Title:** Reclaimed Water: Are We Putting Fertilizer to "Waste"?

---

**Students Name(s):** Gavin A Baker  
**School:** Thunderbolt Elementary School, **Region:** Clay Rotary  
**Title:** Slick Out!

---

**Students Name(s):** Walker A Willis  
**School:** Shorecrest Preparatory School, **Region:** Pinellas  
**Title:** Eradication of the Fittest

---

**Students Name(s):** Varun A Lakshmanan  
**School:** Murray Middle School, **Region:** Martin  
**Title:** Lead vs Lemon: A Study on the Phyto-Extraction Properties of *Brassica juncea*

---

**Students Name(s):** Michelle Moore  
**School:** Suncoast Community High School, **Region:** Palm Beach  
**Title:** One Man's Trash Is the World's Treasure

---

**Students Name(s):** Kelly L Wu  
**School:** Pensacola High School, **Region:** West Panhandle  
**Title:** Water Purification by Solar Energy

---

**Students Name(s):** Yebin Choi  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** Usefulness in Daily Life Sometimes Contains Danger: The Impact of Methylparaben on Ghost Shrimp

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**Students Name(s):** Zachary C Zeller  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** The Effect of Nutrients on the Biodegradation of Polyethylene

---

**Students Name(s):** Greeshma Venigalla  
**School:** International Baccalaureate School at Bartow High, **Region:** Polk  
**Title:** Bacterial Bioremediation

---

**Students Name(s):** Nicole A O'Donnell  
**School:** Palm Bay High School, **Region:** Brevard: South  
**Title:** The Effect of Changing Salinities on the Rate of Phytoremediation of Methyl Orange Pollution by *Rhizophora mangle* (Red Mangrove) Propagules

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## Second Place

**Students Name(s):** Marina N Lombardo  
**School:** St. Francis Xavier Catholic School, **Region:** Thomas Alva Edison  
**Title:** Toxic Treat - The Effects of Erythritol, a Non-Nutritive Sugar Alcohol Sweetener, on *Acheta domesticus*

---

**Students Name(s):** Alexander D Harris  
**School:** Ronald McNair Magnet School, **Region:** Brevard: Intracoastal  
**Title:** Could an Activated Carbon Based Hybrid Filter be More Efficient than Floating Vegetative Islands in Filtering Polluted Indian River Lagoon Water?

---

**Students Name(s):** Madison A Toonder  
**School:** Home School- St Johns, **Region:** St. Johns  
**Title:** The Effect of Sunblock Nanoparticles of Zinc Oxide and Micronized Sunscreen Chemicals on the Ability of the Bivalve Mollusk to Filter Bay Water

---

**Students Name(s):** Madeleine B Roberts  
**School:** Christ Classical Academy, **Region:** Capital  
**Title:** Blue Skies & Sunshine: What Weather Conditions Produce the Most Solar Power and Can Power Intake Be Predicted?

---

**Students Name(s):** Charles C DePlato  
**School:** Lake City Middle School, **Region:** Suwannee Valley  
**Title:** Exploring Solar Desalination

---

**Students Name(s):** Arianna I Krinos  
**School:** T. R. Robinson High School, **Region:** Hillsborough  
**Title:** Modeling and Implications of Pollutant Entry Into a Local Canal

---

**Students Name(s):** Johnathan F Fox  
**School:** Okeechobee High School, **Region:** Heartland  
**Title:** The Use of FeCl<sub>2</sub> and CMC Treated Brazilian Pepper Fibers to Remove Phosphate from Real-world Contaminated Water: The Analysis of Used Fibers as a Potential Fertilizer, and a Cost Analysis of the Fibers as Both a Phosphate Filtration Medium and Fertilizer. A Second Year Study

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**Students Name(s):** Vaidya Govindarajan  
**School:** Archimedean Upper Conservatory, **Region:** South Florida  
**Title:** Auxin Induced Cell Modification, Nutrient Absorption, and Biomass Production in *Botryococcus braunii* and *Chlamydomonas reinhardtii*

---

**Students Name(s):** Jacob A Mosley; Cassandra S Mosley  
**School:** Vanguard High School, **Region:** Big Springs  
**Title:** Environmentally-Friendly Synthesis of Uncoated Silver Nanoparticles: Reduction of Negative Photosynthetic Effects of Commercial Nanoparticle Coatings

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**Students Name(s):** Kunal Upadya  
**School:** Vanguard High School, **Region:** Big Springs  
**Title:** Copper Nanoparticles in a Reverse Osmosis Water Filtration System for Inhibition of Microbial Growth

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#### First Place

**Students Name(s):** Kyler T Klimek  
**School:** North Naples Middle School, **Region:** Collier  
**Title:** The Efficiencies and Environmental Benefits of Biodiesel Fuel

---

**Students Name(s):** Nidhi Ohri  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Clean Renewable Energy Source of the Future: Splitting Water (into H<sub>2</sub> and O<sub>2</sub>) Year 2

---

**Students Name(s):** Kyle W Bramblett  
**School:** Sculptor Charter School, **Region:** Brevard: Mainland  
**Title:** Do Ribbed Mussels & Eastern Oysters Naturally Improve Indian River Water Quality?

---

**Students Name(s):** Kristen Livasy  
**School:** Stone Middle School, **Region:** Brevard: South  
**Title:** Developing and Testing a Method of Extending the Viability of Stored Zooxanthellae

---

**Students Name(s):** Maria Elena Grimmatt  
**School:** Oxbridge Academy of the Palm Beaches, **Region:** Palm Beach  
**Title:** H<sub>2</sub>O<sub>h</sub> No: Pharmaceuticals Contaminate Groundwater! Sulfamethazine Adsorption Isotherms and Kinetics with Hypercrosslinked Polymer MN250 at Varying Ionic Strengths

---

**Students Name(s):** Margaret K Parrish

**School:** Chamberlain High School, **Region:** Hillsborough

**Title:** Design, Construction and Optimization of a Low-Cost Portable Enterococci Test (PET) Kit

---

**Students Name(s):** Rebecca Elsishans

**School:** Sarasota High School, **Region:** Sarasota

**Title:** Mitigation of the Cytotoxicity of Single-walled Carbon Nanotubes Utilizing Surface Functionalization and Non-toxic Surfactants

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# Category Winners



60th Annual State Science and Engineering Fair of Florida

March 31st, April 1st & 2nd, 2015

Lakeland Center, Lakeland

## Junior

## Mathematics

### Recognition

**Students Name(s):** Heather Nevins; Zoe Nevins

**School:** Storm Grove Middle School, **Region:** Indian River

**Title:** Predicting Russia's Next Move: Using Quantitative Analysis to Forecast the Geopolitical Crisis in Eastern Europe

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**Students Name(s):** August A Ewert-Harpold

**School:** Howard Bishop Middle School, **Region:** Alachua

**Title:** Quarters vs Dimes: An Experiment in Optimal Packing

---

**Students Name(s):** Katelyn A Chau

**School:** Espirito Santo Catholic School, **Region:** Pinellas

**Title:** A Mathematical Equation for Estimating Elliptical Objects

---

**Students Name(s):** Sarah Rotenberger

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** Differences in the Correlation Between SRI Scores and Standardized Testing Scores Throughout the Years

---

**Students Name(s):** Niharika G Maity

**School:** Hagerty High School, **Region:** Seminole

**Title:** Can Alzheimer's Be Effectively Diagnosed from Risk Factors and Symptoms Using Data Analysis?

### Honorable Mention

**Students Name(s):** Tesla Radulovic

**School:** Loggers' Run Middle School, **Region:** Palm Beach

**Title:** Goldbach Conjecture

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**Students Name(s):** Jenna M Blanchard

**School:** Sanford Middle School, **Region:** Seminole

**Title:** Math, Music Connections

---

**Students Name(s):** Muhammad U Abdulla

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** Deterministic and Stochastic Analysis in Biomedical Engineering: Chaotic Dynamics vs Brownian Motion

---

**Students Name(s):** Christopher G Graves

**School:** Palm Bay High School, **Region:** Brevard: South

**Title:** A Mathematical Analysis of the Effects of Sub-Zero Temperatures on the Structural Integrity of Synthetic Materials

### Fourth Place

**Students Name(s):** Marc A Jacobson  
**School:** Orange Park Junior High School, **Region:** Clay Rotary  
**Title:** Does Size Matter?

---

**Students Name(s):** Lauren M Parrow  
**School:** Saint John Paul II Catholic School, **Region:** Citrus  
**Title:** Can a Sixth Grade Student Use Ancient Math to Find the Circumference of the Earth?

---

**Students Name(s):** Natalie L Longtin  
**School:** Avalon Middle School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** The Monty Hall Problem: A Statistical Analysis

---

**Students Name(s):** Vasu Malhotra  
**School:** Frank W Springstead High School, **Region:** Hernando  
**Title:** A Statistical Analysis on the Incidence of 14-specific Gene Mutations in 92 MCS Patients and Correlation to MDS Stage

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**Students Name(s):** Sadhana S Ponnaluri  
**School:** Maclay School, **Region:** Capital  
**Title:** Renal Disease, Dialysis and Transplantation

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### Third Place

**Students Name(s):** Grace Liu  
**School:** David C. Hinson Middle School, **Region:** Tomoka  
**Title:** An Intuitive Demonstration of the Isoperimetric Problem Using the Concept of Symmetry

---

**Students Name(s):** Michael C Heissenbittel  
**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal  
**Title:** Is There a Pattern Here?

---

**Students Name(s):** Lukas C Porter  
**School:** St. Joseph School, **Region:** Polk  
**Title:** Trajectories

---

**Students Name(s):** Sarah E Eisenstadt; Emily M Naranjo  
**School:** Eastside High School, **Region:** Alachua  
**Title:** Ebola 2014. What Makes this Outbreak Different?

---

**Students Name(s):** Risham Sidhu  
**School:** Eastside High School, **Region:** Alachua  
**Title:** Uncertainty in Wind Energy Production

---

**Students Name(s):** Jonathan P Sepulveda  
**School:** Seminole High School, **Region:** Seminole  
**Title:** Using Artificial Neural Networks to Predict Life Expectancy

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### Second Place

**Students Name(s):** Mathew Maggio  
**School:** South Sumter Middle School, **Region:** Big Springs  
**Title:** The Effect in Bridge Design on Weight Bearing Capacity

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**Students Name(s):** Kaitlyn P Duron  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** Correlations between Environmental Factors and Autism

---

**Students Name(s):** Cathleen T Mestre  
**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Statistical Analysis of the Effects of Temperature on Incubation Lengths of *Caretta caretta*

---

**Students Name(s):** Xuanhao B Shi  
**School:** International Baccalaureate School at Bartow High, **Region:** Polk  
**Title:** X Degree

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#### **First Place**

**Students Name(s):** Bettina B Huang  
**School:** James Weldon Johnson College Preparatory MS, **Region:** Northeast Florida  
**Title:** The Math Behind Bottled Water: Cost, Carbon Footprint, Waste and Water Quantity

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**Students Name(s):** Pranav I Warman  
**School:** Academy at the Lakes, **Region:** Pasco  
**Title:** A Study on the Topological Properties of Large Erdos-Renyi Graphs and Their Applications

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# Category Winners



60th Annual State Science and Engineering Fair of Florida

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Lakeland Center, Lakeland

## Junior

## Medicine and Health

### Recognition

**Students Name(s):** Nathaniel Davis-Picart

**School:** Jefferson Middle School, **Region:** Brevard: Intracoastal

**Title:** Effects of Artificial Turf Ingredients on the Lifespan and Mutation Rate of *Drosophila melanogaster*

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**Students Name(s):** Joshua K Brown

**School:** Clay Virtual Academy, **Region:** Clay Rotary

**Title:** Accuracy Matters

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**Students Name(s):** Matthew D Klapprott

**School:** Resurrection Catholic School, **Region:** Polk

**Title:** ACNE OUT!

---

**Students Name(s):** Tristen Wise

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** The Effect of TCE and PERC on Parkinson Rate in *Drosophila melanogaster*

---

**Students Name(s):** Charis E Wang; Cassia B Wang

**School:** Ponte Vedra High School, **Region:** St. Johns

**Title:** Prevalence of Beta-Lactamase Genes in Oral Streptococcus Species in a Healthy Population: Molecular Analysis by Polymerase-Chain Reaction

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**Students Name(s):** Noelle B Taylor

**School:** Polk Pre-Collegiate Academy, **Region:** Polk

**Title:** Dynamic vs Static Force

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**Students Name(s):** August A DeBickes; Bryce N Clark

**School:** Viera High School, **Region:** Brevard: Mainland

**Title:** Electric Cigarettes vs Real Cigarettes, Which Chemicals are More Harmful?

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**Students Name(s):** Katarina V Gomez

**School:** Westminster Christian School, **Region:** South Florida

**Title:** The Effect of Varying Duration of Ultraviolet Light Exposure Upon the Mutagenesis Frequency of *Drosophila melanogaster*

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### Honorable Mention

**Students Name(s):** Olivia R Guerin

**School:** Challenger K8, **Region:** Hernando

**Title:** The Effect of the pH of Dry Mouth on Tooth Enamel

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**Students Name(s):** Anna M Davis

**School:** St. Cecelia Interparochial School, **Region:** Pinellas

**Title:** Cone Cell Stimulation and Fatigue Rate on Colorblind and Non-Colorblind Subjects

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**Students Name(s):** Kayle N Cunningham  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Do Natural Essential Oils Work More Efficiently than Hand Sanitizer?

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**Students Name(s):** Natalie A Trio  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** Is Your Sunscreen Causing Cancer?

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**Students Name(s):** Emily A Decocker  
**School:** Choctawhatchee High School, **Region:** East Panhandle  
**Title:** Runner's Knee: Using a Mechanical Leg to Evaluate Knee Stress During the Running Motion

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**Students Name(s):** Shari Kumar  
**School:** University School of Nova Southeastern University, **Region:** Broward  
**Title:** Out of Hospital Cardiac Arrest: Does Timing in Induced Hypothermia Treatment Affect Neurologic Outcome?

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**Students Name(s):** Sophia I Gonzalez  
**School:** Westminster Christian School, **Region:** South Florida  
**Title:** The Effects of *Brassica oleracea* on the TNF Levels of Patients with Rheumatoid Arthritis and Osteoarthritis

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**Students Name(s):** Regan L McCormick  
**School:** Academy at the Lakes, **Region:** Pasco  
**Title:** The Effects of Artificial Sweeteners on the Crawl Rate of Larval and Adult *Drosophila melanogaster*

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**Students Name(s):** Thor S Stead  
**School:** F. W. Buchholz High School, **Region:** Alachua  
**Title:** Prognostic Determinants of Pediatric Concussion

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#### Fourth Place

**Students Name(s):** Haileigh E Norris  
**School:** Braden River Middle School, **Region:** Lockheed Martin Manatee  
**Title:** In Neutralizing Stomach Acids, Which Works Faster - Synthetic Antacids or Natural Remedies?

---

**Students Name(s):** Morgan L Cox  
**School:** Bay Haven Charter Academy, **Region:** Three Rivers  
**Title:** Spray Out UV

---

**Students Name(s):** Michael Gorbach  
**School:** Northport Middle School, **Region:** St. Lucie  
**Title:** FIR=Life

---

**Students Name(s):** Carson R Maschmeier  
**School:** St. Michael's Lutheran School, **Region:** Thomas Alva Edison  
**Title:** Mapping the Genetic Traits and Similarities of Fingerprints from Generation to Generation (A Study of Third and Fourth Generation Families)

---

**Students Name(s):** Eric J Su  
**School:** Julia Landon College Preparatory Middle School, **Region:** Northeast Florida  
**Title:** The Effect of Tumor Motion Magnitude on Radiation Dose Distribution

---

**Students Name(s):** Alex M Christodoulou  
**School:** Bay Area Homeschools, **Region:** Three Rivers  
**Title:** Do You Know How Safe Your Bleach Is?

---

**Students Name(s):** Kristine Wong  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** Adeno-associated Virus Serotype 6 and Antibody Interaction for Use in Gene Therapy

---

**Students Name(s):** Hailey Binggeli  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** Light Bright Bacteria: Year II

---

**Students Name(s):** Yiyun Pan  
**School:** American Heritage High School, **Region:** Broward  
**Title:** Antibacterial and Healing Properties of Mammals' Saliva

---

**Students Name(s):** Alexa-Rae Wheeler; Stephany A Bustamante  
**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Platelet Estimation: A Semi-quantitative Method Using the Miller Disc

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**Students Name(s):** Kendall R Clark  
**School:** South Sumter High School, **Region:** Big Springs  
**Title:** The Effects of the Citrus Flavonoid Naringin on Raji Burkitt Lymphoma Cells

---

**Students Name(s):** Ugwumsinachi D Nwaubani  
**School:** The Villages Charter High School, **Region:** Big Springs  
**Title:** Is There a Mathematical Correlation Between the Posterior Dominant Rhythm and Heart Rate

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### Third Place

**Students Name(s):** Lacey M Taylor  
**School:** Christ the King Catholic School, **Region:** Northeast Florida  
**Title:** Which Type of Sugar Raises Blood Glucose Levels the Fastest?

---

**Students Name(s):** Kylie Fernandez  
**School:** Pembroke Pines Charter Middle School, **Region:** Broward  
**Title:** Outer Edges

---

**Students Name(s):** Rebekah C Nair  
**School:** International Community School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Comparison of Balance in Grades K-12

---

**Students Name(s):** Reagan E Pomp  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Sunscreen: Examination of Degradation in Water

---

**Students Name(s):** Ryan A Loomis  
**School:** Braulio Alonso High School, **Region:** Hillsborough  
**Title:** Using IR Imaging to Assist in the Diagnosis and Treatment of Cellulitis and Abscess

---

**Students Name(s):** Navya Baranwal  
**School:** Miramar High School, **Region:** Broward  
**Title:** Obesity and Breast Cancer: The Leptin Connection

---

**Students Name(s):** Natalie Olson  
**School:** Sarasota High School, **Region:** Sarasota  
**Title:** Increasing NO Production of Aromatase Inhibitor-Treated Endothelial Cells via the Addition of Resveratrol

---

**Students Name(s):** Maya M Levy  
**School:** Dr. Michael M. Krop High School, **Region:** South Florida  
**Title:** Clinical Accuracy of Non-Invasive Glucose Monitoring for Ex-Vivo Artificial Pancreas

---

**Students Name(s):** Sarah E Eysoldt  
**School:** Medical Academy for Science and Technology, **Region:** South Florida  
**Title:** Phosphorylated Oximes Increase Organophosphate Toxicity

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**Students Name(s):** Matthew J Norton; Matthew Hart  
**School:** Ponte Vedra High School, **Region:** St. Johns  
**Title:** The Effects of Bisphenol-A on the Expression of Insulin-like Peptides in *Drosophila melanogaster*

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## Second Place

**Students Name(s):** Ethan Z Levy  
**School:** Aventura Waterways K-8 Center, **Region:** South Florida  
**Title:** Comparing Stent Geometry in Blood Flow Rate of Curved Coronary Artery Stenosis

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**Students Name(s):** Kishen Mitra  
**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland  
**Title:** Does Spectrum of LEDs Affect Glare and Visual Performance?

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**Students Name(s):** Nathaniel T Quirion  
**School:** Olivet Private School, **Region:** St. Lucie  
**Title:** Determining the Functions of a Protein Using Computational Methods

---

**Students Name(s):** Jay S Chandar  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** Moving Towards the Cure: The Effects of LPS-Induced Inflammation Response on the Regulation of the MAPT Gene and the Hyperphosphorylation of TAU Protein in Alzheimer's Disease (A Novel Second Year in vitro Study)

---

**Students Name(s):** Niharika Malviya  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Emergent Enteroinvasive *E. coli* Clinical Isolates Form Biofilms over Biological and Inert Surfaces

---

**Students Name(s):** Nithya Kasarla  
**School:** American Heritage High School, **Region:** Broward  
**Title:** Inhibition of Mutation in *S. typhimurium* and Cell division in *Allium cepa* by Zyflamend, *C. longa*, *Z. officinale*, *A. indica* and *M. citrifolia* and Possible Implications in Cancer Prevention

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**First Place**

**Students Name(s):** Maya Oli  
**School:** Howard W. Bishop Middle School, **Region:** Alachua  
**Title:** Do Painkillers Kill?

---

**Students Name(s):** Koushal Rao  
**School:** Lincoln Park Academy, **Region:** St. Lucie  
**Title:** Effectiveness of Influenza VLP and SAR9 Vaccination

---

**Students Name(s):** Sayyada Kazim  
**School:** Tampa Bay Technical High School, **Region:** Hillsborough  
**Title:** Natural Vitamin E Delta-tocotrienol Inhibits Metastasis and Induces Death of Pancreatic Cancer Cells

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**Students Name(s):** Maxwell D Norleans  
**School:** Fort Myers High School, **Region:** Thomas Alva Edison  
**Title:** The Effect of Ultrasound on Osmolysis of Metastatic Carcinomas

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**Grand Award Winner**

**Students Name(s):** Maxwell D Norleans  
**School:** Fort Myers High School, **Region:** Thomas Alva Edison  
**Title:** The Effect of Ultrasound on Osmolysis of Metastatic Carcinomas

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# Category Winners



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## Junior

## Microbiology

### Recognition

**Students Name(s):** Mason Pallatto

**School:** Jupiter Middle School of Technology, **Region:** Palm Beach

**Title:** Caffeine Crisis

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**Students Name(s):** Drake Adkins

**School:** Holley Navarre Middle School, **Region:** West Panhandle

**Title:** Micro Medicine: Are the Bacteriophages T4 and T4R Effective Ways of Killing *E. coli*?

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**Students Name(s):** Reign B Gemza-Puentes

**School:** Dayspring Academy Middle School, **Region:** Pasco

**Title:** Electro Worms

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**Students Name(s):** Nina Ramchander

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** Thermal Death Time and Decimal Reduction Value of *Bacillus subtilis* and *Eschevichia coli*

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**Students Name(s):** Shivani Mehta

**School:** Frank W Springstead High School, **Region:** Hernando

**Title:** The Effect of Spices on *E.Coli* Growth

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**Students Name(s):** Vrinda Madan

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Selectivity Determination and Bioinformatics Analysis of Newly Identified Anti-malarials

### Honorable Mention

**Students Name(s):** Rachel E Kelsey

**School:** Davidson Middle School, **Region:** East Panhandle

**Title:** Counting Colonies: Bacterial Contamination on Television Remote Controls

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**Students Name(s):** Jake R Mosher

**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal

**Title:** Getting to the Gut of Weight Loss

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**Students Name(s):** Shelbi A Winslow

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** Does Gum Containing Cinnamaldehyde Decrease the Number of Bacteria in the Mouth?

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**Students Name(s):** Jada Campbell

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effectiveness of the Seeds of the Moringa Tree (*Moringa oleifera*) as a Water Purifier

**Students Name(s):** Amelia Stephens  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** The War Against the Warburg Effect

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**Students Name(s):** Nicole Odzer  
**School:** Pine Crest High School, **Region:** Broward  
**Title:** Characterization of H-1 Parvovirus Receptor Binding Interactions: Mapping Viral Receptor Proteins as Potential Vectors for Target-specific Cancer Therapy

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**Students Name(s):** Tiffany Liu  
**School:** The Villages Charter High School, **Region:** Big Springs  
**Title:** Can Magnetic Resonance Imaging (MRI) Differentiate Between Gram-Positive and Gram-Negative Bacteria Species in Human Blood?

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#### Fourth Place

**Students Name(s):** Payden Mouritsen  
**School:** Brown Barge Middle, **Region:** West Panhandle  
**Title:** How Can You Get A Rise Out of Yeast?

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**Students Name(s):** Jaxson A Worsham  
**School:** David C. Hinson Middle School, **Region:** Tomoka  
**Title:** How Well Do Disinfectants Work on *Staphylococcus aureus* and *Escherichia coli*?

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**Students Name(s):** Ruchi Korde  
**School:** Terrace Community Middle School, **Region:** Hillsborough  
**Title:** The Effect of Oil Spills on Aquatic Life and Microbially Mediated Remediation of Hydrocarbons

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**Students Name(s):** Zachary S Reister  
**School:** Osceola Middle School, **Region:** Heartland  
**Title:** Yeastie Beasties

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**Students Name(s):** Ethan Grand  
**School:** Howard Bishop Middle School, **Region:** Alachua  
**Title:** Natural Remedies for Your Canine's Ear Enemies

---

**Students Name(s):** Dalton L Price  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** Investigating DNA of the Arsenic Tolerant Bacterium, *Halomonas sp.* Strain GFAJ-1

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**Students Name(s):** Nishanth Chalasani  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** The Effect of Dominus and Chitin Treatments on Actinomycete Soil Populations

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**Students Name(s):** Cady C McGehee  
**School:** Okeechobee High School, **Region:** Heartland  
**Title:** Florfenicol as a Treatment for *Mycoplasma bovis* in Dairy Calves - A Two Year Study

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**Students Name(s):** Abigail E Raffalski  
**School:** Westminster Christian School, **Region:** South Florida  
**Title:** The Effects of Chuan Xin Lian on the Inhibition of *E. Coli* K12, Coliphage T4, and Cronobacter

---

**Students Name(s):** Lindsay E Martin  
**School:** Seminole High School, **Region:** Seminole  
**Title:** The Effects of Kojic Acid and PTU on the Synergistic Antimicrobial Properties of *S. bullata* & *S. frugiperda* Hemolymph with Gentamycin on *E. coli*

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### Third Place

**Students Name(s):** Kylie G Oakes  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** Living Light; Bioluminescence in *Pyrocystis fusiformis*

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**Students Name(s):** Callie W Zheng; Yanan Lin  
**School:** Lincoln Park Academy, **Region:** St. Lucie  
**Title:** Will Yeast Positively Affect Chlorophyll Rates in HLB Infected Grapefruit Plants?

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**Students Name(s):** Aishva J Kothari  
**School:** Gamble Rogers Middle School, **Region:** St. Johns  
**Title:** Which Contact Solution Best Sterilizes Bacteria?

---

**Students Name(s):** Monet T Jowers  
**School:** Avalon Middle School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Phototropism in *Physarum Polycephalum*

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**Students Name(s):** Sanim Choudhury  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** The Use of Concentrated Oxygen as a Microbial Inhibitor for Environmental Antibiotic Resistant Bacterial Infections (A Third Year Study)

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**Students Name(s):** Mayuri Viswanathan  
**School:** American Heritage High School, **Region:** Broward  
**Title:** The Role of Neurotrophin-3 in Cell Cycle Renewal of Neurons

---

**Students Name(s):** Dylan J Burgin  
**School:** Sarasota High School, **Region:** Sarasota  
**Title:** The Effect of Temperature on Staphylococcus Epidermidis Biofilm Formation in the Presence of the Human Cathelicidin Peptide LL-37

---

**Students Name(s):** Colleen M Kane  
**School:** Palm Bay High School, **Region:** Brevard: South  
**Title:** A Method of Detecting Contaminants Deriving from Ballistics through CO2 Emissions Produced by *Geobacter metallireducens*

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### Second Place

**Students Name(s):** Aksheta S Kanugnati  
**School:** Carrolwood Day School, **Region:** Hillsborough  
**Title:** The Effect of Different Solutions to Decrease the Amount of Bacteria in P-Traps

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**Students Name(s):** Kimberly Ciarcia  
**School:** Stone Middle School, **Region:** Brevard: South  
**Title:** A Study of the Chemotaxic Response of *Vibrio fischeri* to Coral

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**Students Name(s):** Samantha W Williams  
**School:** Anclote High School, **Region:** Pasco  
**Title:** Alternative Antimicrobials

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**Students Name(s):** Divya Ravinder  
**School:** International Baccalaureate School at Bartow High, **Region:** Polk  
**Title:** The Battle Against Cystic Fibrosis Complication Continues

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#### **First Place**

**Students Name(s):** Luke M Long  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** WATTS IN THE MUD? The Effects of Certain Substrates on a Microbial Fuel Cell for Optimizing Electrical Output from Anaerobic Bacteria

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**Students Name(s):** Carly E Crump  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** Proteomic Characterization of Mosquito Host Cell Glycoproteins During Dengue Virus Egress

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#### **Grand Award Winner**

**Students Name(s):** Luke M Long  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** WATTS IN THE MUD? The Effects of Certain Substrates on a Microbial Fuel Cell for Optimizing Electrical Output from Anaerobic Bacteria

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**Students Name(s):** Carly E Crump  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** Proteomic Characterization of Mosquito Host Cell Glycoproteins During Dengue Virus Egress

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# Category Winners



60th Annual State Science and Engineering Fair of Florida

March 31st, April 1st & 2nd, 2015

Lakeland Center, Lakeland

## Junior

## Physics

### Recognition

**Students Name(s):** Cassandra L Atzrodt

**School:** R Dan Nolan Middle School, **Region:** Lockheed Martin Manatee

**Title:** Hearing the Harmonies

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**Students Name(s):** Joseph Alexander

**School:** Holley Navarre Middle School, **Region:** West Panhandle

**Title:** Mindstorm Robotic Experiment

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**Students Name(s):** Julia L Siren

**School:** Saint Mary Catholic School, **Region:** East Panhandle

**Title:** Aimed to Protect

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**Students Name(s):** Pranav Ananthan

**School:** Hill-Gustat Middle School, **Region:** Heartland

**Title:** Insulation Sensation

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**Students Name(s):** Soria Elhassan; Dena A Berhan

**School:** Alazhar School, **Region:** Broward

**Title:** Magnets vs Crashes

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**Students Name(s):** Sabrina L Almodovar

**School:** Bradford Middle School, **Region:** Suwannee Valley

**Title:** I'm Shocked

---

**Students Name(s):** Isabella M Horning; Emily C Hudson

**School:** Bishop Kenny High School, **Region:** Northeast Florida

**Title:** How the Color Affects the Drag of an Airfoil

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**Students Name(s):** Henry Tingle; Liam Rouse; Peter J Florian

**School:** Pine View High School, **Region:** Sarasota

**Title:** Full Body High Stress Protection Suit

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**Students Name(s):** Sherry L Dourm

**School:** Crystal River High School, **Region:** Citrus

**Title:** Blood Splatter Analysis

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### Honorable Mention

**Students Name(s):** Ryan D Bloch

**School:** Pine Ridge Middle School, **Region:** Collier

**Title:** Magnet Power

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**Students Name(s):** Kira E Crage  
**School:** New Smyrna Beach Middle School, **Region:** Tomoka  
**Title:** Evolution of the Surfboard: Measuring Speed

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**Students Name(s):** Griffin M Wagner  
**School:** Storm Grove Middle School, **Region:** Indian River  
**Title:** Can a Laser Measure Sweetness?

---

**Students Name(s):** Olivia K Haworth  
**School:** Osceola Middle School, **Region:** Big Springs  
**Title:** Does the Weight of an Arrowhead Affect the Arrow's Kinetic Energy?

---

**Students Name(s):** Connor A Rodriguez  
**School:** Lawton Chiles Middle School, **Region:** Seminole  
**Title:** The Chills and Thrills of Rollercoaster Hills

---

**Students Name(s):** Christian Coury  
**School:** Suncoast Community High School, **Region:** Palm Beach  
**Title:** Electrical Design with Operational Amplifiers: Detecting Modulation Signals

---

**Students Name(s):** Shixuan Justin Li  
**School:** Rutherford High School, **Region:** Three Rivers  
**Title:** Critical Point Energy Storage

---

**Students Name(s):** Donny N Stiner  
**School:** DeSoto County High School, **Region:** Heartland  
**Title:** Magnetic Attraction II

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#### Fourth Place

**Students Name(s):** Anastaisa H Nobles  
**School:** Hardee Junior High School, **Region:** Heartland  
**Title:** Does Submerging a Solar Cell in Mineral Oil Affect Its Energy Production?

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**Students Name(s):** Conor M Cranfield  
**School:** St. Francis Xavier Catholic School, **Region:** Thomas Alva Edison  
**Title:** Drag Racing

---

**Students Name(s):** James D Humpel  
**School:** Saint Charles Borromeo School, **Region:** Thomas Alva Edison  
**Title:** What Affect Does Mass Have on the Trajectory of an Object Thrown Using a Trebuchet Cataplul?

---

**Students Name(s):** Drew T Adams  
**School:** Landrum Middle School, **Region:** St. Johns  
**Title:** The Relationship Between Environmental Temperature and Latent Fingerprint Recovery on Plastic Surfaces

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**Students Name(s):** Zoe K Lammers  
**School:** Westwood Middle School, **Region:** Alachua  
**Title:** How Does the Amount of Air Pressure in a Soccer Ball Affect How Far it Travels?

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**Students Name(s):** Elise M Beltran  
**School:** Resurrection Catholic School, **Region:** Polk  
**Title:** The Perfect Pirouette Pair

---

**Students Name(s):** Christopher K Bradshaw  
**School:** Osceola Middle School, **Region:** Big Springs  
**Title:** Need for Speed? Cold Air Induction

---

**Students Name(s):** Paulina Scarlata  
**School:** A. W. Dreyfoos Jr. School of the Arts, **Region:** Palm Beach  
**Title:** Wolf Tone Analyzer and Elimination System

---

**Students Name(s):** Victoria L Su  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** The Radioactivity of Proton Irradiated Material

---

**Students Name(s):** Ricardo A Rosa  
**School:** Cypress Bay High School, **Region:** Broward  
**Title:** Optimizing Lift and Drag of an Airplane by Using Plasma Actuators

---

**Students Name(s):** Joshua S Geller  
**School:** Western High School, **Region:** Broward  
**Title:** The Effect of the Distance Between the Center of Gravity and Center of Pressure on Rocket Altitude

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**Students Name(s):** Andrew K Haskell  
**School:** Titusville High School, **Region:** Brevard: Mainland  
**Title:** Is the Nano-material Graphene an Efficient Electrical Semiconductor?

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### Third Place

**Students Name(s):** Karen Copeland  
**School:** Bak Middle School of the Arts, **Region:** Palm Beach  
**Title:** Could Longer Calls Lead to Long Term Damage?

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**Students Name(s):** Micah H Evans  
**School:** North Naples Middle School, **Region:** Collier  
**Title:** The Pinhole Problem

---

**Students Name(s):** Robert Junkins  
**School:** Southwestern Middle School, **Region:** Tomoka  
**Title:** Theoretical Fusion

---

**Students Name(s):** Keenan J Walker  
**School:** Varsity Middle School, **Region:** Thomas Alva Edison  
**Title:** May the Magnetic Force Be with You

---

**Students Name(s):** Harrison A Tinker  
**School:** Jefferson Middle School, **Region:** Brevard: Intracoastal  
**Title:** Ion Propulsion: The Power to Get to Mars...and Beyond

---

**Students Name(s):** Shreya P Pathak  
**School:** Abraham Lincoln Middle School, **Region:** Alachua  
**Title:** Noteworthy Differences

---

**Students Name(s):** Tomas A. Justiz  
**School:** Barron Collier High School, **Region:** Collier  
**Title:** The Effect of Increased Surface Area on the Efficiency of Wind Turbine Blades

---

**Students Name(s):** Morgan Havel  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** 4-D Printing: Creating Tessellated Foldable Structures Year III

---

**Students Name(s):** Logan J Armagost  
**School:** Haines City High School, **Region:** Polk  
**Title:** Leiden Frost and Water that Rolls Uphill

---

**Students Name(s):** Barbara Shreve  
**School:** Bayside High School, **Region:** Brevard: South  
**Title:** Got Drag?

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## Second Place

**Students Name(s):** Jack H Krasulak; Joshua J Navarro  
**School:** Saint Andrew's Episcopal Academy, **Region:** St. Lucie  
**Title:** Rack Attack: Pool Ball Distribution Impacted by Experimental Rack Designs

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**Students Name(s):** Mikayla A Lindsay  
**School:** Okaloosa STEMM Academy, **Region:** East Panhandle  
**Title:** Force Field Fact or Fiction?

---

**Students Name(s):** Roshan Warman  
**School:** Academy at the Lakes, **Region:** Pasco  
**Title:** Maximizing the Efficiency of Windmills Using the Golden Angle

---

**Students Name(s):** Erin J Fox  
**School:** Blankner School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Opposites Attract-Magler Superconductor

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**Students Name(s):** Jules J Volny  
**School:** Herbert C. Hoover Junior High School, **Region:** Brevard: South  
**Title:** Photovoltaic Sandwich

---

**Students Name(s):** Martha A Grudens  
**School:** Sebastian River High School, **Region:** Indian River  
**Title:** The Effects of Camber on the Pressure Distribution of an Airfoil

---

**Students Name(s):** Ana S Olano  
**School:** Ronald W. Reagan/Doral Senior High School, **Region:** South Florida  
**Title:** Magnetic Muon Funnel

---

**Students Name(s):** Sandeep Baskar  
**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Developing an ASE Source for Atmospheric Propagation

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#### **First Place**

**Students Name(s):** Jacques Coury  
**School:** Bak Middle School of the Arts, **Region:** Palm Beach  
**Title:** Aircraft Fuselage Modification: Application of Physics to Aerodynamics

---

**Students Name(s):** Alexander Pope  
**School:** Brown Barge Middle, **Region:** West Panhandle  
**Title:** Can You Get Your Transistors in Line?

---

**Students Name(s):** Kavitha Vudatha  
**School:** Julia Landon College Preparatory Middle School, **Region:** Northeast Florida  
**Title:** The Effect of Resistor and Capacitor (RC) Values on the Cutoff Frequencies of Filters

---

**Students Name(s):** Michael Pyle  
**School:** Green Cove Springs Junior High School, **Region:** Clay Rotary  
**Title:** Solar Solutions

---

**Students Name(s):** Jasmine A Sumpter  
**School:** Seacoast Collegiate High School, **Region:** East Panhandle  
**Title:** 2015: A Photon Odyssey

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**Students Name(s):** John R Royero  
**School:** Hagerty High School, **Region:** Seminole  
**Title:** Developing an Accurate Model of Microwave Propulsion

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#### **Grand Award Winner**

**Students Name(s):** John R Royero  
**School:** Hagerty High School, **Region:** Seminole  
**Title:** Developing an Accurate Model of Microwave Propulsion

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# Category Winners



60th Annual State Science and Engineering Fair of Florida

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Lakeland Center, Lakeland

## Junior

## Zoology

### Recognition

**Students Name(s):** Kyla N Huelle

**School:** Charles S. Rushe Middle School, **Region:** Pasco

**Title:** Does Ten Hours of Supplemental Oxygen a Night Lengthen the Life of a Cricket?

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**Students Name(s):** Ryan J Psik

**School:** International Community School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Reducing Plaque in Dogs Using Essential Oils

---

**Students Name(s):** Osiris Ramos

**School:** St. Joseph Catholic School, **Region:** Martin

**Title:** The Effects of Tourism on the Allen's Cay Iguanas

---

**Students Name(s):** Emily A Acevedo

**School:** Bradford Middle School, **Region:** Suwannee Valley

**Title:** Feed Management Practices Effect on High Risk Pregnancies

---

**Students Name(s):** Kellie Reed

**School:** Matanzas High School, **Region:** Tomoka

**Title:** The Effects of Electromagnetic Magnetic Radiation on the Acetylcholine Esterase (AChE) Activity in *Planorbis rebrumv*

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**Students Name(s):** Ryan T Murphey

**School:** Niceville High School, **Region:** East Panhandle

**Title:** A Model of Force Transduction for Magnetoreception in Honeybees

---

**Students Name(s):** Amm M Walton; Sneha Reddy

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** The Effects of Sugar, Alcohol, and Fertilizer on *Lumbriculus variegatus*

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**Students Name(s):** Ashley D Harris

**School:** Union County High School, **Region:** Suwannee Valley

**Title:**

The Effects of Supplemental Feeding on Egg Mass and Weight of Rhode Island Red Hens

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### Honorable Mention

**Students Name(s):** Shreya K Reddy

**School:** Lincoln Park Academy, **Region:** St. Lucie

**Title:** RNA Interference (RNAi) as Pest management for Citrus Greening Disease (Huanglongbing)

---

**Students Name(s):** Nick M Zeh

**School:** Saint Mary Catholic School, **Region:** East Panhandle

**Title:** Cellular Regeneration: Studying the Growth Patterns of *Polycelis feline* When Placed Under Stress as a Comparative Study of Human Cellular Regeneration

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**Students Name(s):** Josue G Jorge-Silva

**School:** Shadowlawn Elementary School, **Region:** Clay Rotary

**Title:** How Do Specific Diets Affect Earthworms?

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**Students Name(s):** William Albee

**School:** The Canterbury School of Florida, **Region:** Pinellas

**Title:** The Effect of Oil Pollution on the Number of Brine Shrimp that Hatch

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**Students Name(s):** Jennifer Sublett

**School:** West Florida High School of Advanced Technology, **Region:** West Panhandle

**Title:** Uneasy Species: Analyzing Shark Teeth

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**Students Name(s):** Madeline E Dale

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** *Drosophila melanogaster* Alcohol Dehydrogenase

---

**Students Name(s):** Samantha N Rubin; Kristi L Bears

**School:** Clearwater Central Catholic High School, **Region:** Pinellas

**Title:** The Effect of UVB Light on the Hatching Rate of Brine Shrimp (*Artemia salina*)

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#### Fourth Place

**Students Name(s):** Glenn Grimmatt

**School:** The Weiss School, **Region:** Palm Beach

**Title:** Got Milk? Prevalence of Aflatoxin M1,  $\beta$ -Lactams, Sulfamethazine, and Tetracycline in South Florida Consumer Milk

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**Students Name(s):** Abby O.S. Stenn

**School:** Gifford Middle School, **Region:** Indian River

**Title:** The Natural Alternative Larvici De to Control Dengue and Chikungunya Disease

---

**Students Name(s):** Trishala Kumar

**School:** American Heritage Middle School, **Region:** Broward

**Title:** Pavlovian Response of *C. elegans* in the Presence of an Environmental Toxin

---

**Students Name(s):** Brent R Schneider

**School:** Oak View Middle School, **Region:** Alachua

**Title:** Beetle Defoliation Rates

---

**Students Name(s):** Jozef H Heijkoop; Gabriel A Strickland

**School:** South Sumter Middle School, **Region:** Big Springs

**Title:** They Poop We Scoop

---



**Students Name(s):** Jason L Edelkind

**School:** Manatee High School, **Region:** Lockheed Martin Manatee

**Title:** The Effect of Electromagnetic Radiation Similar to That Released by Power Lines on the Time to Hatch of Silkworm Eggs

---

**Students Name(s):** Connor N Cleveland

**School:** Fort Walton Beach High School, **Region:** East Panhandle

**Title:** Mosquito Borne Illness Prevention- A 3rd Year Study: The Inhibition of Larval Growth as Affected by Essential Amino Acids Added to Standing Water

---

**Students Name(s):** Tanvi S Madkaiker

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** The Ability of Calcium Ions to Competitively Inhibit Zinc Toxicity in Terrestrial and Aquatic Environments

---

**Students Name(s):** Madison K Precht

**School:** Westminster Christian School, **Region:** South Florida

**Title:** Lethal and Sub-lethal Effects of Sediment on the Threatened Staghorn Coral, *Acropora cervicornis*

---

**Students Name(s):** Harrell H Phillips

**School:** Vanguard High School, **Region:** Big Springs

**Title:** A Study of Effective Administration of Macrocylic Lactone Dewormers in Weaning -Age Heifers

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### Third Place

**Students Name(s):** Christopher D Wolf

**School:** Hill-Gustat Middle School, **Region:** Heartland

**Title:** Does the Polarity of Neodymium Magnets Affect the Regeneration Rate of Planaria?

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**Students Name(s):** Cassidy R McKinnon

**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal

**Title:** Swim AWHEY Zygoptera

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**Students Name(s):** Sophie N Sepehri

**School:** George Washington Carver Middle School, **Region:** South Florida

**Title:** Gone Batty

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**Students Name(s):** Connor W Cruise

**School:** Shorecrest Preparatory School, **Region:** Pinellas

**Title:** Light-n-Bug

---

**Students Name(s):** Alexander Naum

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** The Effect of Parasitic Fungus *Beauveria bassiana* Treated with Chitinase on Adult and Larval Mosquitoes

---

**Students Name(s):** Shantanu Jakhete

**School:** South Fork High School, **Region:** Martin

**Title:** Novel Mosquito Control: Variable-Frequency Sound Sweep to Disrupt *Aedes aegypti* Mating

---

**Students Name(s):** Kyle D Fox; Hayden F Siverson  
**School:** The Villages Charter High School, **Region:** Big Springs  
**Title:** The Future of Agriculture

---

**Students Name(s):** Hunter R Dalton  
**School:** Melbourne High School, **Region:** Brevard: South  
**Title:** The Effects of Hyperoxia on Drosophila Development

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## Second Place

**Students Name(s):** Nathaniel W Toler  
**School:** Challenger K8, **Region:** Hernando  
**Title:** The Effect of the Infusion of Spirulina into the Diets of *Oreochromis aureus* on Their Weight Gain Percentage, Specific Growth Rate Percentage, and Feed Conversion Ratio

---

**Students Name(s):** Heather E Hartz  
**School:** Lyndon B. Johnson Middle School, **Region:** Brevard: Mainland  
**Title:** How Much Pollution Can Oysters Remove From Our Rivers?

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**Students Name(s):** Alexandra Vernich  
**School:** Stone Middle School, **Region:** Brevard: South  
**Title:** The Effects of Simulated Nutrient Pollution on the Cell Count of Endosymbiotic Algae and the Rate of Tissue Regeneration in Green Hydra, *Chlorohydra viridissima*

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**Students Name(s):** Amy Polen  
**School:** Palm Beach Central High School, **Region:** Palm Beach  
**Title:** The Effect of Water Temperature on the Mussel's Byssal Thread Protein Composition

---

**Students Name(s):** Priya Gurjar  
**School:** Spruce Creek High School, **Region:** Tomoka  
**Title:** Neurobiology of the Gustatory System: Researching the Effect of Electrical Stimulation on the Number of Activated FOS-1R Neurons

---

**Students Name(s):** Elizabeth R Feldman  
**School:** Pine Crest High School, **Region:** Broward  
**Title:** An Evaluation of the Nuclear Locus ITS2 and the Mitochondrial Locus COI in *Notorynchus cepedianus* from 7 Different Geographic Locations Confirms the Presence of a Single Species

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## First Place

**Students Name(s):** Omar Shareef  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** The Effect of Ultrasound Frequencies on the Feeding Patterns of Sri Lankan Weevils

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**Students Name(s):** Olivia J Lazarik  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** The Effect of a Diet Infused with *Bacillus subtilis* and Garlic Extract in the Growth and Health of *Hippocampus erectus*

---

**Students Name(s):** Sana Shareef  
**School:** St. Edward's School, **Region:** Indian River  
**Title:** The Food Preference of the Sri Lankan Weevil, *Mylokerus undecimpustulatus undatus* Marshall (Coleoptera: Curculionida: Entiminae)

---

**Students Name(s):** River C Grace

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** Evolution of Nervous System Function and Behavior in a Micro-Vertebrate, The Brahminy Blindsnake  
(*Ramphotyphlops brahminus*)

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**Grand Award Winner**

**Students Name(s):** River C Grace

**School:** West Shore Jr. / Sr. High School, **Region:** Brevard: Mainland

**Title:** Evolution of Nervous System Function and Behavior in a Micro-Vertebrate, The Brahminy Blindsnake  
(*Ramphotyphlops brahminus*)

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