

## Alachua

### Junior *Animal Sciences*

Isaac J Long	Howard Bishop Middle School	Mr. Paul Jost
J0107	How Diet and Caterpillar Biology Affect the Longevity of the Adult Bella Moth <i>Utetheisa ornatrix</i>	

Second Place

Janani S Kumaran	Abraham Lincoln Middle School	Mrs. Kim Baxter
J0141	Can Snails Act as Biological Control Agents for the Aquatic Invasive Plant, <i>Hydrilla</i>	

First Place

### Junior *Biomedical & Health Sciences*

Ellie G Pfahler	Howard Bishop Middle School	Mr. Paul Jost
J0308	Hue Can See It?	

Fourth Place

Akash Verma	Abraham Lincoln Middle School	Mrs. Kim Baxter
J0309	RF Radiation: Can We Keep it Down?	

First Place

### Junior *Cellular/Molecular Biology & Biochemistry*

James S Cohan	Howard Bishop Middle School	Mr. Paul Jost
J0404	Determining the Optimal Cooking Method and Pan Material for Preserving Nutrients in White Cauliflower	

First Place

### Junior *Earth & Environmental Sciences*

Benjamin W Hahn	Fort Clarke Middle School	Mrs. Andrea Anderson
J0614	Air Potato Leaf Beetles: Annihilating the Perpe-tater	

Recognition

Minnie J Liang	Abraham Lincoln Middle School	Mrs. Kim Baxter
J0615	Ei Ni-no or La Ni-yes?	

Second Place

### Junior *Engineering*

Njeri A Carthy	Howard Bishop Middle School	Mr. Paul Jost
J0708	Failure Strength and Deflection of a Carbon Fiber/Wood Composite	

Recognition

Matthew J Hershfield	Howard Bishop Middle School	Mr. Paul Jost
J0709	General Purpose Button Pusher	

Third Place

Anthony D Madorsky	Howard Bishop Middle School	Mrs. Tonya Camaratta
J0710	iFLAG (Innovative Forgotten or Lost Automobile Guidance)	

Third Place

**Junior**      *Environmental Engineering*

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Delia K Savin	Westwood Middle School	Mr. John Pettit
J0809	How Do Polymers Affect Gel Formation for Oil Remediation?	

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Second Place

**Junior**      *Intelligent Machines, Robotics, & Systems Software*

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Jad Helmy	Abraham Lincoln Middle School	Mrs. Kim Baxter
J0905	Optimizing and Extending Alzimio to Help Dementia, Autism, and Alzheimer's Patients	

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Second Place

**Junior**      *Mathematics & Computational Sciences*

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August A Ewert-Harpold	Howard Bishop Middle School	Mr. Paul Jost
J1006	A Duodecimal Napier's Bones	

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Third Place

**Junior**      *Physics & Astronomy*

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Anya F AitSahlia	Oak Hall School	Mrs. Sandra Swindler
J1212	How Do the Angle of Attack and Wind Speed Affect the Lift Generated by a Butterfly's Wings	

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Recognition

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Anjana Balachandar	Abraham Lincoln Middle School	Mrs. Kim Baxter
J1213	High Fives for Wi-Fi	

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First Place

**Junior**      *Plant Sciences*

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Hannah M Palka	Oak View Middle School	Dr. Lisa Sauberan
J1308	How Does Glycerin Affect the Decomposition of Organic Materials?	

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Third Place

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Sophia K Shah	Oak View Middle School	Dr. Lisa Sauberan
J1308	How Does Glycerin Affect the Decomposition of Organic Materials?	

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Third Place

**Senior**      *Cellular/Molecular Biology & Biochemistry*

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Brindha P Rathinasabapathi	Eastside High School	Ms. Adrienne Thieke
S0404	Treating Hypertension: Using Natural Compounds to Inhibit Angiotensin Converting Enzyme	

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Honorable Mention

**Senior**      *Earth & Environmental Sciences*

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Sidhika Balachandar	Buchholz High School	Ms. Diane McDilda
S0607	Novel Graphen Oxide Based Technology for Ultra Efficient Filtration	

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Fourth Place

Arjun P Panicker	Buchholz High School	Ms. Diane McDilda
S0608	Biofuels from Algae	

Second Place

**Senior**      *Engineering*

Sohan G Subhash	F. W. Buchholz High School	Ms. Diane McDilda
S0705	Making Harder Materials Tougher	

Honorable Mention

**Senior**      *Environmental Engineering*

Talar Terzian	Oak Hall School	Mrs. Sandra Swindler
S0806	Spin Cycle: An Off-the-Grid Hydrodynamic Water Filtering Mobile Washing Machine	

Third Place

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

Amir A Helmy	Eastside High School	Ms. Adrienne Thieke
S0906	Using Smart Phones to Capture and Analyze Heart Data	

First Place

**Senior**      *Physics & Astronomy*

Esha M Patel	Oak Hall School	Mrs. Sandra Swindler
S1235	The Generation of Renewable Energy from Mechanical Stress Exerted through Pressure	

Honorable Mention

**24 awards for Alachua Region**

## Big Springs

### Junior *Biomedical & Health Sciences*

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Micaela E McGrath	The Villages Charter Middle School	Mrs. Shelbie Wiley
J0343	A Dementia Patients Memory Tested for 2 Months	

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Third Place

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Vrinda G Patel	South Sumter Middle School	Mrs. Shelly Paulinyce
J0344	What is the Effect of Curcumin on Human Blood Coagulation?	

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Fourth Place

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John R Whitaker	Homeschool	Mrs. Lori R Whitaker
J0345	To C or Not to C - The Effect of Ascorbic Acid (Vitamin C) on the Cardiac Muscle - Searching for a Cure for Anxiety Disorders	

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Honorable Mention

### Junior *Chemistry*

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Ebubechi Nwaubani	The Villages Charter Middle School	Mrs. Shelbie Wiley
J0518	What Combination of 3 Heat Resistant or Burn Healing Substances Protect Best against Burns on Chicken Skin?	

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Recognition

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Kareem A Jawad	The Cornerstone School	Mr. Daniel Peterson
J0520	Drought Busters	

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Fourth Place

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Ethan G Wasserfall	The Cornerstone School	Mr. Daniel Peterson
J0520	Drought Busters	

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Fourth Place

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Colton A Ward	South Sumter Middle School	Mrs. Shelly Paulinyce
J0537	GOT POWER	

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Honorable Mention

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Matthew T Yates	South Sumter Middle School	Mrs. Shelly Paulinyce
J0537	GOT POWER	

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Honorable Mention

### Junior *Earth & Environmental Sciences*

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Charles R Phillips	Redeemer Christian School	Mr. Robert Ayton
J0635	Where's My Water?	

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Honorable Mention

### Junior *Environmental Engineering*

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Makayla D Bedgood	South Sumter Middle School	Mrs. Shelly Paulinyce
J0823	Combating the Agriculture Crisis; Aquaponics vs Hydroponics	

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Third Place

Vivek S Sandrapaty	Howard Middle School	Mr. Bill Bondank
J0824	Solar Energy 3.0: Will a Slowly Rotating Solar Cell Produce More Electricity than a Stationary Solar Cell?	

Second Place

**Junior**      *Intelligent Machines, Robotics, & Systems Software*

Andy E Shar	The Villages Charter Middle School	Mr. Gary J Brodeur
J0913	What Are the Challenges of Creating a New Computer Programming Interpretive Language Using Three Different Existing Programming Languages, Such as Visual Basic, XAML, and Python?	

Division Grand Award Winner And First Place

**Junior**      *Mathematics & Computational Sciences*

Picabo B Lesh	The Cornerstone School	Mr. Daniel Peterson
J1013	Clean Machines	

Third Place

**Junior**      *Microbiology*

Rachael N Yacuzzo	South Sumter Middle School	Mrs. Shelly Paulinyce
J1122	Will Certain Household Spices Inhibit The Growth of <i>E.coli</i> K-12?	

Honorable Mention

**Senior**      *Animal Sciences*

Alyssa M Sanchez	South Sumter High School	Ms. Emily Keeler
S0118	Methane Reduction Using Cull Produce in Bos Taurus	

Fourth Place

Carlie M Taylor	The Villages Charter High School	Ms. Monica Vinas
S0119	The Effects of Spontaneous Mutations Upon Male Fitness in <i>Caenorhabditis elegans</i>	

Honorable Mention

**Senior**      *Behavioral & Social Sciences*

Carter W Draney	The Villages Charter High School	Ms. Monica Vinas
S0213	Does Modern Technology Exacerbate Teen Procrastination?	

Second Place

Abigail R Lifferth	The Villages Charter High School	Ms. Monica Vinas
S0213	Does Modern Technology Exacerbate Teen Procrastination?	

Second Place

Tiffany Liu	The Villages Charter High School	Ms. Monica Vinas
S0213	Does Modern Technology Exacerbate Teen Procrastination?	

Second Place

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Sai Aditya Sriram	Vanguard High School	Mrs. Candace Roy
S0417	A Novel Whole-Cell Bacterial Sensor Utilizing the Chemiluminescent Interactions between 3-aminophthalhydrazide and Metalloproteins	

Third Place

**Senior**      *Chemistry*

Kunal Upadya	Vanguard High School	Mrs. Candace Roy
S0519	Copper Oxide Nanoparticles for Adsorption of Phosphate in a Novel Gel-Loaded Delivery System	

Second Place

Colby D Pitts	South Sumter High School	Ms. Emily Keeler
S0536	The Absorption of Textile Dyes using Organic Waste Material	

Third Place

**Senior**      *Earth & Environmental Sciences*

Emily M Hough	South Sumter High School	Ms. Emily Keeler
S0644	Mass Transfer Theory vs Pan Evaporation Method	

Third Place

Casey J Ryan	South Sumter High School	Ms. Emily Keeler
S0644	Mass Transfer Theory vs Pan Evaporation Method	

Third Place

Jacob C Wells	South Sumter High School	Ms. Emily Keeler
S0644	Mass Transfer Theory vs Pan Evaporation Method	

Third Place

**Senior**      *Engineering*

Joseph E Cilenti	South Sumter High School	Ms. Emily Keeler
S0717	Reach Into the Future II	

Honorable Mention

**Senior**      *Environmental Engineering*

Kevin M Matos	The Villages Charter High School	Ms. Monica Vinas
S0818	Reinventing Photobioreactors: Eliminating Industrial Emissions While Producing Energy	

Third Place

Sabrina L Mead	The Villages Charter High School	Ms. Monica Vinas
S0819	Which Polymer Produces the Strongest Bioplastic, and Which Is the Best for the Environment?	

Recognition

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

Johnathan M Bressette	South Sumter High School	Ms. Emily Keeler
S0923	AARLink: The Future of Multi-GPUs?	

Third Place

**Senior**      *Microbiology*

Honorable Mention

***30 awards for Big Springs Region***

## Brevard: Intracoastal

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### Junior *Animal Sciences*

Jacob A Pelham J0112	Edgewood Jr/Sr High School Organic or Non-Organic	Mrs. Meredith Fredricks
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Recognition

### Junior *Behavioral & Social Sciences*

Auria K Rembert J0226	Ronald McNair Magnet Middle School How Does Music Affect Your Stress Levels?	Mrs. Megan Cooper
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Third Place

### Junior *Biomedical & Health Sciences*

Rylan S Andrews J0310	DeLaura Middle School Exposed:The Effect of UV Light on DNA	Ms. Deborah Austin
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Fourth Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Dylan Geiger J0406	DeLaura Middle School Meta Yeast vs Natural Supplements	Ms. Deborah Austin
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Second Place

### Junior *Chemistry*

Alyssa M Donall J0512	Edgewood Jr/Sr High School What's Stuck in the Muck?	Mrs. Meredith Fredricks
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Third Place

### Junior *Earth & Environmental Sciences*

Erin K Gaydar J0620	Edgewood Jr/Sr High School How Do Different Levels of Phosphorus Affect the Indian River Lagoon's Ecosystem?	Mrs. Meredith Fredricks
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Honorable Mention

### Junior *Engineering*

Isabella R Weiner J0716	Saint Mary's Catholic School In Situ Resource Utilization of Martian Regolith for Construction	Mrs. Dianne Alexis
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Second Place

### Junior *Environmental Engineering*

Eliana J Razzino J0811	DeLaura Middle School Clean Green Machine	Ms. Shandra Stewart
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Third Place

### Junior *Intelligent Machines, Robotics, & Systems Software*



Benjamin Batman J0908	DeLaura Middle School Signaling Motion Sensor	Ms. Deborah Austin
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Fourth Place

**Junior**      *Mathematics & Computational Sciences*

Evan Karcher J1009	DeLaura Middle School Space Travel: What A Drag?	Ms. Deborah Austin
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Fourth Place

**Junior**      *Microbiology*

Alexander M LaFortune J1104	Cocoa Beach Junior/Senior High School Contaminated vs Clean, Year 2: The Effects of Unfiltered and UV-Filtered Solar Radiation on the Viability of Gram-Positive <i>Micrococcus luteus</i> and Gram-Negative <i>E.coli</i> K12 Bacteria	Ms. Alberta Travers
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Second Place

**Junior**      *Plant Sciences*

Tabina Hossain J1311	DeLaura Middle School Does <i>Ceratophyllum demersum</i> Inhibit the Growth of <i>Anabaena</i> ?	Ms. Deborah Austin
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First Place

**Senior**      *Animal Sciences*

Sean M Kennedy S0108	Edgewood Jr/Sr High School Preventing Endocrine Disruption in <i>Danio</i> Embryos	Mr. Ryan Cilsick
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Recognition

**Senior**      *Behavioral & Social Sciences*

Alyssa Russell S0207	Satellite High School Sound of Music - Year III	Mr. Joe Scott
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Second Place

**Senior**      *Biomedical & Health Sciences*

Julia Hoffman S0309	Satellite High School Enhancing Breast Cancer Treatment Efficiency Using Circadian Rhythms	Mr. Joe Scott
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Third Place

**Senior**      *Chemistry*

Enjolie Vadella S0507	Satellite High School Just Enough Binder for Multi-Walled Carbon Nanotubes	Mr. Joe Scott
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Fourth Place

**Senior**      *Earth & Environmental Sciences*

Jieli A Wegerif S0611	Edgewood Jr/Sr High School The Effect of Wave Action on Muck Flux	Mr. Ryan Cilsick
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Second Place

**Senior**      *Environmental Engineering*

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Jules Volny	Satellite High School	Mr. Joe Scott
S0808	Photovoltaic Sandwich - Year III	

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Recognition

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

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Garrett A Ellington	Edgewood Jr/Sr High School	Mr. Ryan Cilsick
S0908	How Accurate is EEG - Year 3	

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Third Place

**Senior**      *Mathematics & Computational Sciences*

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Kelly Van Woesik	Satellite High School	Mr. Joe Scott
S1034	Home Ranges of Atlantic Great White Sharks - Phase II	

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Second Place

**Senior**      *Physics & Astronomy*

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Zane T Forrester	Edgewood Jr/Sr High School	Mr. Ryan Cilsick
S1208	The Influence of Perovskite Layer Thickness and the Efficiency of a BiFeO <sub>3</sub> Solar Cell	

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Second Place

**Senior**      *Plant Sciences*

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Lily M Tucciarone	Edgewood Jr/Sr High School	Mr. Ryan Cilsick
S1304	Effect of Hydroponic Application of Thuricide on the Protein of Glycine Max Pods	

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Second Place

***22 awards for Brevard: Intracoastal Region***

## Brevard: Mainland

### Junior *Animal Sciences*

Tehya A Bahsoun J0125	West Shore Jr. / Sr. High School How Toxic is UV Radiation to Marine Organisms?	Ms. Mary Anderson
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Honorable Mention

### Junior *Biomedical & Health Sciences*

Madeline E Huberman J0326	West Shore Jr. / Sr. High School Do <i>Saccharomyces cerevisiae</i> , Grown in the Presence of Vitamin D, Become More Resistant to UV Radiation Damage?	Mr. Robert Klaasen
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Second Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Kaylee C Krininger J0412	West Shore Jr. / Sr. High School Differential Decellularization	Mr. Robert Klaasen
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Second Place

### Junior *Earth & Environmental Sciences*

Brooke C Rentschler J0639	West Shore Jr. / Sr. High School Is It Possible to Create a More Natural Reef Using Local Vegetal Ingredients Year II: Movement and Decomposition?	Ms. Mary Anderson
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First Place

### Junior *Environmental Engineering*

Danielle Schroeder J0826	Staint Teresa Catholic School Does the Salinity of Water Affect the Amount of Energy Created by a Salt Water Battery?	Mrs. Patricia Taurasi
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Recognition

### Junior *Mathematics & Computational Sciences*

Nathan Foo J1015	West Shore Jr. / Sr. High School Deriving a Predator-Prey Model for Regulating the Growth of HABs with Different Species of Zooplankton inside of a Water Ecological System	Ms. Mary Anderson
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First Place

### Junior *Microbiology*

Om D Patel J1109	Lyndon B. Johnson Middle School Evaluation of Antibacterial Activity of the Piper Betel Leaf	Mr. Greg Stauffer
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Division Grand Award Winner And First Place

### Junior *Physics & Astronomy*

Malik Lewis J1237	Cocoa High School Will Adding a Rheopectic Non-Newtonian Fluid to the Inside of a Football Helmet Reduce Impact Force?	Mrs. Cynthia Hornby
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Fourth Place

### Junior *Plant Sciences*

Asher G Dorfman	West Shore Jr. / Sr. High School	Ms. Mary Anderson
J1324	Preventing Allelopathy	

Third Place

**Senior**      *Animal Sciences*

River C Grace	West Shore Jr. / Sr. High School	Ms. Mary Anderson
S0122	Shining a Light on the Blind: Evolutionary Regression and Adaptive Progression in the Micro-vertebrate <i>Ramphotyphlops braminus</i> - Year 3	

Second Place

**Senior**      *Behavioral & Social Sciences*

Andres A Cruz-Sanchez	West Shore Jr. / Sr. High School	Ms. Mary Anderson
S0214	"False Sense of Security!" Impact of Cell Phone Hands-Free Dual Tasking Function on Human Reaction Time Performance	

Fourth Place

**Senior**      *Biomedical & Health Sciences*

Juan E Torres	West Shore Jr. / Sr. High School	Ms. Mary Anderson
S0324	Rhythmic Training and its Effect on Rise-Time Perception	

Recognition

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Joanna LaTorre	West Shore Jr. / Sr. High School	Ms. Mary Anderson
S0421	Sugar vs Sugar Substitutes	

Recognition

**Senior**      *Earth & Environmental Sciences*

Alexandra K Gabrielski	Viera High School	Ms. Elizabeth Youngs
S0624	Increasing the Sustainability of a Heterotrophic Biomass Production System (A 6 Year Study of <i>Chlorella vulgaris</i> )	

Honorable Mention

**Senior**      *Environmental Engineering*

Kyle Bramblett	Titusville High School	Mr. Allan Sprayberry
S0828	Do Herbicides and Fertilizers Commonly Found in Surface Runoff that Flows into the River Water Affect the Oyster <i>Crassostrea virginica</i> and Clam <i>Mercenaria mercenaria</i> Ability to Naturally Filter and Improve the Overall Water Quality of the Indian River Lagoon?	

Fourth Place

**Senior**      *Mathematics & Computational Sciences*

Muhammad U Abdulla	West Shore Jr. / Sr. High School	Ms. Paula Ladd
S1015	A Stochastic Approach to the Identification of Heart Disease	

Second Place

**Senior**      *Microbiology*

Bryce N Clark	Viera High School	Ms. Elizabeth Youngs
S1134	Can <i>Halobacterium salinarium</i> Survive in Regolith Mars Simulants?	

Fourth Place

Steven J Meikle	Viera High School	Ms. Elizabeth Youngs
S1134	Can <i>Halobacterium salinarium</i> Survive in Regolith Mars Simulants?	

Fourth Place

Isha S Patel	Viera High School	Ms. Elizabeth Youngs
S1134	Can <i>Halobacterium salinarium</i> Survive in Regolith Mars Simulants?	

Fourth Place

**Senior**      *Physics & Astronomy*

Noah R Ogburn	West Shore Jr. / Sr. High School	Ms. Paula Ladd
S1223	Does Synthetic Sharkskin Affect the Properties of Lift on a b737d-il Airfoil?	

Third Place

**Senior**      *Plant Sciences*

Pooja S Shah	West Shore Jr. / Sr. High School	Ms. Paula Ladd
S1316	The Effects of Reactive Oxygen Associated Molecules (ROAMs) on ROS Production and Growth in <i>Arabidopsis thaliana</i>	

Second Place

*21 awards for Brevard: Mainland Region*

## Brevard: South

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### Junior *Behavioral & Social Sciences*

Violet T Sibol	Herbert Hoover Middle School	Ms. Michelle Zimmerman
J0227	Fixed on Gaming	

Fourth Place

### Junior *Biomedical & Health Sciences*

Kima S Sibayan	Herbert Hoover Middle School	Ms. Michelle Zimmerman
J0341	Oh No, Sucralose!	

Second Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Kellen J Maurus	Herbert Hoover Middle School	Ms. Michelle Zimmerman
J0419	The Effect of Extracellular Matrix on the Regeneration Rate of <i>Lumbricus terrestris</i>	

Third Place

### Junior *Chemistry*

Arianna Nicolas	Stone Magnet Middle School	Mr. Richard Regan
J0533	A Comparison of Natural Remedies and OTC Medicines on the pH of Simulated Gastric Fluid	

Recognition

### Junior *Earth & Environmental Sciences*

Dillon Elliott	Stone Magnet Middle School	Mr. Richard Regan
J0658	Developing and Testing a Bioassay to Detect Microplastics	

First Place

### Junior *Engineering*

William A Giniewski	Herbert Hoover Middle School	Ms. Michelle Zimmerman
J0745	Piston Powered Prosthesis	

Honorable Mention

Carl Critchfield	Stone Magnet Middle School	Mr. Richard Regan
J0746	Optimizing the Stall Angle and the Lift of a 3-D Printed Airfoil	

Honorable Mention

### Junior *Mathematics & Computational Sciences*

Hannah Chester	Stone Magnet Middle School	Mr. Richard Regan
J1020	Simulating a Residue Number System in the Python Programming Application	

Recognition

### Junior *Microbiology*

Riaaz Khan	Stone Magnet Middle School	Mr. Richard Regan
J1120	A Comparison of the Antimicrobial Properties of Oil from the Tea Tree, <i>Melaleuca alternifolia</i> and the Oil from Lemongrass, <i>Cymbopogon</i> on Gram Positive Bacteria	

Second Place

**Junior**      *Physics & Astronomy*

Ankitha Nath	Stone Magnet Middle School	Mr. Richard Regan
J1248	Investigating the Affects of Liquid Density on the Refraction of Laser Light	

Honorable Mention

**Junior**      *Plant Sciences*

James Coffey	Stone Magnet Middle School	Mr. Richard Regan
J1337	The Effects of Soil Nutrients on the Percentage of Trap Closures and the Amplitude of Electric Spikes Produced by the Trap of a Venus Flytrap	

Recognition

**Senior**      *Behavioral & Social Sciences*

Aiden M Calenda	Melbourne High School	Ms. Robin Floyd
S0225	How Do Hurricanes Affect the Movement Patterns of Species of Sharks?	

Honorable Mention

**Senior**      *Biomedical & Health Sciences*

Marissa A Jordan	Palm Bay Magnet High School	Mr. Robert Cooper
S0334	The Fabrication and Evaluation of a Prosthetic Macula to Restore Vision in Patients Affected by Geographic Atrophy	

Honorable Mention

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Ritika Jeloka	Melbourne High School	Ms. Robin Floyd
S0433	The Effects of Microplastics on the Neurotransmission rate of an Earthworm, <i>Lumbricus terrestris</i>	

Fourth Place

**Senior**      *Earth & Environmental Sciences*

Kenneth M West	Melbourne High School	Ms. Robin Floyd
S0641	Improving Shade Balls	

Third Place

**Senior**      *Engineering*

Benjamin R Beale	Bayside High School	Mr. Aaron Mitchell
S0729	A New Spin on the Flywheel	

Recognition

**Senior**      *Environmental Engineering*

Elliot P Whitney	Palm Bay Magnet High School	Mr. Robert Cooper
S0834	The Design and Construction of a Digital Water Quality Monitor for Use in the Indian River Lagoon	

Second Place

**Senior**      *Mathematics & Computational Sciences*

Angela K Sutton	Bayside High School	Ms. Ellen Muse
S1029	An Application and Analyzation of Orbifold Based Chord Geometries	

Fourth Place

**Senior**      *Physics & Astronomy*

Devon J Madden	Bayside High School	Mr. Aaron Mitchell
S1232	Year Two: The Absorption of Space Radiation with Development in Shielding Materials	

Third Place

**Senior**      *Plant Sciences*

Ryan J Dunwoody	Palm Bay Magnet High School	Mr. Robert Cooper
S1329	The Use of <i>Mycorrhizae</i> (fungi) to Increase the Health of <i>Zea mays</i> (corn) in the Brazilian Amazon, and Decrease Soil Deterioration	

Fourth Place

***20 awards for Brevard: South Region***



## Broward

### Junior *Biomedical & Health Sciences*

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Gauri Kasarla J0329	American Heritage School Testing the Efficiency of Avastin in Zebrafish Embryos to Design a Control Mechanism for Possible Implications in the Treatment of Hypoxia in Premature Infants	Mrs. Leya Mathew Joykuttu
Fourth Place		
Rochelle A Rowe J0332	Lauderdale Lakes Middle School Turn Down Fur Watt? An Investigative Study into the Negative Effects of Loud Music on the Structure of the Stereocilia	Mr. Alexis Castillo
Honorable Mention		

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### Junior *Cellular/Molecular Biology & Biochemistry*

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Alejandra S Abramson J0413	American Heritage School Effect of Crude Oil on the Degeneration of <i>Planaria</i>	Mrs. Leya Mathew Joykuttu
Honorable Mention		
Rolando A Coto J0414	Tequesta Trace Middle School Heartbeats that Will Make You Think Twice	Mrs. Gayle Swinerton
Third Place		

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### Junior *Chemistry*

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Ariel Arias J0524	NSU University School Using pH Indicator to Find the Acidity of Soil Determines if Gas Stations Cause Soil Pollution	Ms. Jessica Lanzetta
Recognition		

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### Junior *Earth & Environmental Sciences*

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Megan Wessinger J0644	New River Middle School Turtle Hurdles	Ms. Ashley Trimble
Fourth Place		
Sumaiya Rahman J0645	Alazhar School Combating Oil Spills Naturally	Mrs. Raghida Zamzam
Second Place		

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### Junior *Intelligent Machines, Robotics, & Systems Software*

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Manuel Nouel-Mato J0916	The Sagemont School How Secure is Your Password?	Ms. Erin McCormick
Recognition		
Brady P Garrison J0917	Pembroke Pines Charter Middle School Herbie the Photovore: Designing an Efficient Light- following Robot	Mrs. Caroline Echeverri
Fourth Place		

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### Junior *Mathematics & Computational Sciences*

Logan L Saenz	Pembroke Pines Charter Middle School	Mrs. Piper Spencer
J1016	An Analysis of the Properties of Pascal's Triangle	

Recognition

**Junior**      *Physics & Astronomy*

Benjamin C Abi-Rafeh	American Heritage School	Mrs. Leya Mathew Joykutty
J1239	Materials that Best Block Sound Waves	

Fourth Place

Gabriel M Diaz	Pembroke Pines Charter Middle School	Mrs. Piper Spencer
J1240	Bluetooth Tracking	

Fourth Place

Natalie M Gonzalez	Pembroke Pines Charter Middle School	Ms. Melissa Maestu
J1241	Can Water be Used to Bend Light onto Solar Panels?	

Recognition

**Junior**      *Plant Sciences*

Andrew H Simon	American Heritage School	Mrs. Leya Mathew Joykutty
J1327	Determination of a Correlation between the Capsaicinoid Concentration of the Fruit of the Genus Capsicum and Organic Growth Conditions	

First Place

**Senior**      *Behavioral & Social Sciences*

Paige E Pokryfke	Saint Thomas Aquinas High School	Mrs. Laura Shearer
S0218	Stimulating Neurotransmission to Improve Standard Test Scores	

Recognition

Maxence C Sutton	Cypress Bay High School	Mr. Jay Rosenberg
S0219	Using Grit to Determine Student Success	

Honorable Mention

**Senior**      *Biomedical & Health Sciences*

Gabriel M Frydman	NSU University School	Mr. Arnold Miller
S0327	Selected Laboratory Methods for Confirmation of RNA Silencing	

Recognition

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Saagar Jain	Pine Crest School	Ms. Jennifer Gordinier
S0423	Alternative Splice Variant Expression of MCIDAS Does not Induce Ciliated Cell Differentiation	

Second Place

**Senior**      *Chemistry*

Suganth Kannan	American Heritage School	Mrs. Leya Mathew Joykutty
S0524	Development of an Algorithm to Filter and Assign Signals in Protein NMR Spectroscopy to Accelerate Drug Discovery	

Second Place

Padmavathi Reddy	American Heritage School	Mrs. Leya Mathew Joykutty
S0527	Improving Nitration Activity of Fused TxtE-Cyp102A1 Reductase Domain by Optimizing the Linker Length	

Division Grand Award Winner And First Place

**Senior** *Earth & Environmental Sciences*

Emily L Pallack	American Heritage School	Mrs. Leya Mathew Joykutty
S0631	A Comparative Analysis of Fluensulfone as a Nematicide on <i>Caenorhabditis Elegans</i> SKN-1 Pathway Mutants and in Vivo RNA Interference Study as a Solution of Nematicidal Resistance	

Third Place

Lauren A Waldman	American Heritage School	Mrs. Leya Mathew Joykutty
S0632	Aerobic Cometabolism of cis-DCE by <i>Rhodococcus rhodochrous</i> ATCC® 21198 with Isobutane Growth Substrate	

First Place

Lourdes M Lopez	Archbishop Edward A. McCarthy High School	Mrs. Diane Enten
S0633	Manipulating Expression of the Flowering Locus T Gene in <i>Pinus taeda</i> and <i>Populus trichocarpa</i>	

Fourth Place

**Senior** *Engineering*

Stefan Abi-Karam	American Heritage School	Mrs. Leya Mathew Joykutty
S0722	Creating a System for Cheap Distributed Landmine Sensing Using GPS and GSM Technologies Coupled with Low cost Electrical Design, Engineering and Manufacturing Techniques	

Third Place

**Senior** *Environmental Engineering*

Nithya Kasarla	American Heritage School	Mrs. Leya Mathew Joykutty
S0825	Using Various Compounds to Increase the Efficiency of Cadmium Chelation Processes in <i>S. lycopersicum</i> , <i>L. minor</i> and <i>C. elegans</i> : Improving Phytoremediation Processes and Cadmium Poisoning Treatments	

Fourth Place

**Senior** *Intelligent Machines, Robotics, & Systems Software*

Rachel Auslander	Pine Crest School	Ms. Jennifer Gordinier
S0916	Taking Steps to Ensure Safety: A Novel, Wearable, Accelerometric Device	

Third Place

Antares Tobelem	American Heritage School	Mrs. Leya Mathew Joykutty
S0917	Patient Paperwork Portal	

Recognition

**Senior** *Mathematics & Computational Sciences*

Lauren K Enten	Saint Thomas Aquinas High School	Mrs. Laura Shearer
S1017	Improving Predictive Capabilities of Metastatic Breast Cancer Models Using a GRG Method	

Third Place

**Senior**      *Microbiology*

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Trishala Kumar	American Heritage School	Mrs. Leya Mathew Joykuty
S1121	Inhibition of Bone Metastasis in MDA-MD-231 and PC-3 Cells by the Extracellular Adherence Protein of <i>Staphylococcus aureus</i>	

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First Place

**Senior**      *Physics & Astronomy*

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Giancarlo D Cabeza	Western High School	Ms. Magda Murphy-Bozkurt
S1225	Stability Statistics	

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Third Place

**Senior**      *Plant Sciences*

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Rajat Ramesh	American Heritage School	Mrs. Leya Mathew Joykuty
S1319	Screening of Samples of Citrus Sinensis for Proteobacteria <i>Candidatus Liberibacter asiaticus</i> in Association with Citrus Greening	

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Recognition

***31 awards for Broward Region***

## Capital

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### Junior *Animal Sciences*

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Isabella Augustine J0117	Trinity Catholic School	Dr. Claudia Arakelian
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Which Natural Extract Is Most Effective in Repelling Mosquitos?

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Fourth Place

### Junior *Behavioral & Social Sciences*

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Ethan J Stewart J0208	Community Leadership Academy	Mrs. Tina Hinton
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Male vs Female: Who Exhibits More Unsafe Driving Behaviors?

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Fourth Place

### Junior *Biomedical & Health Sciences*

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Bryan S Park J0320	Deerlake Middle School	Mrs. Marla Blair
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Does Microwave Cooking Affect Vitamin C?

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Recognition

### Junior *Chemistry*

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Surabhi Kumar J0517	Deerlake Middle School	Mrs. Marla Blair
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Precise Measurement of Surface Tension in Liquids and the Effect of Temperature

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Second Place

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Sandhya Kumar J0517	Deerlake Middle School	Mrs. Marla Blair
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Precise Measurement of Surface Tension in Liquids and the Effect of Temperature

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Second Place

### Junior *Earth & Environmental Sciences*

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Brock H Womble J0642	Deerlake Middle School	Mrs. Marla Blair
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Fish Friendly Lakes: Conducting Water Quality Tests to Determine the Impact of the Surrounding Environment of Lentic Water Systems on Nonpoint Source Pollution Levels - Year 2

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Third Place

### Senior *Biomedical & Health Sciences*

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Odessa X Deng S0318	Lawton Chiles High School	Mrs. Angela Breza-Pierce
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Yeast Cells as a Model for Misfolded Protein Disposal in Huntington's Disease

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Fourth Place

### Senior *Cellular/Molecular Biology & Biochemistry*

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Joanna Q Wang S0416	Lawton Chiles High School	Mrs. Angela Breza-Pierce
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Identify Cdc48 Cofactors Required for Autophagy

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Fourth Place

### Senior *Chemistry*

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Akhil K Shiju	Lawton Chiles High School	Mrs. Angela Breza-Pierce
S0517	A Study on Organic Photovoltaic Cells: Powering the Future with a More Ecofriendly Solution	

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Recognition

**Senior**      *Physics & Astronomy*

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Desiree' Robinson	James S. Rickards High School	Dr. Paula Hall
S1217	A Progressive Airfoil Study on the Convexity and Concavity of Wind Turbine Blades and Their Wind Resistance Efficiencies	

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Recognition

*10 awards for Capital Region*

## Citrus

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### Junior *Animal Sciences*

Elise Leturno J0130	Lecanto Middle School Chickens + CaCO <sub>3</sub> = Quality Eggshells?	Ms. Rebecca Clymer
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Recognition

### Junior *Earth & Environmental Sciences*

Raine Leonard J0632	Citrus Springs Middle School The Effects of Ocean Acidification on Shellfish	Ms. Lauren Gonzales
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Honorable Mention

### Junior *Environmental Engineering*

Joshua Brunk J0822	Inverness Middle School Thermoelectric Generators and Solar Cells - Watts Up!	Mr. Stephen Crandall
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Fourth Place

### Senior *Engineering*

Kelly Laplante S0716	Academy of Environmental Science Harvesting Energy From VAWTs Installed in Water Pipes	Mr. Ward Cooper
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Fourth Place

### Senior *Environmental Engineering*

Alisa Luthra S0817	Academy of Environmental Science Measuring Flow Rate	Mr. Ward Cooper
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Recognition

### Senior *Microbiology*

Truman Roland S1113	Citrus High School Monitoring the Varying Sensitivity, Initial Resistance, and Partial Acclimation of <i>Escherichia coli</i> to Fluoroquinolone, Aminoglycoside, and Aminopenicillin Antibiotic Agents	Ms. Gene Trescott
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Fourth Place

**6 awards for Citrus Region**

## Clay Rotary

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### Junior *Animal Sciences*

Joseph L Brooks J0124	Green Cove Springs Junior High School The superhero of the sky: The Dragonfly	Ms. Erica Vanderverter
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Honorable Mention

### Junior *Engineering*

Gavin A Baker J0731	Green Cove Springs Junior High School It's Getting Hot In Here!	Ms. Erica Vanderverter
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First Place

### Junior *Physics & Astronomy*

Nathan T Baxter J1235	Keystone Heights Junior/Senior High School Sound Has the Power	Mrs. Teresa Whitfield
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Third Place

Ellie Wilhelm J1236	Oakleaf Junior High School Catch the Wave	Mrs. Stephany Wilson
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Recognition

### Senior *Animal Sciences*

Sierra D Langford S0133	Clay High School Here's the Grind: Can Papaya Seed Be Used as an Effective Dewormer in Goats?	Mrs. Tracey Kumm
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Recognition

### Senior *Engineering*

Michael B Mancil S0718	Orange Park High School Natural Insulation	Mrs. Kathryn Ruelas
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Recognition

***6 awards for Clay Rotary Region***



## Collier

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### Junior *Biomedical & Health Sciences*

Johnathan D Konopik	Oakridge Middle School	Mrs. Amy Diemert
J0307	Effect of Sugar and Acidity on Tooth Decay	

Recognition

### Junior *Chemistry*

Madeline Mair	Pine Ridge Middle School	Mr. Greg Anthony
J0507	Laundry Detergents vs Stains, Cost and the Environment	

Fourth Place

### Junior *Earth & Environmental Sciences*

Alex R D'Arco	Pine Ridge Middle School	Mr. Gregory Anthony
J0613	Can <i>Daphnia</i> Consume Different Populations of Chlamydomonas Algae?	

Second Place

### Junior *Engineering*

Alice M Fowle	Pine Ridge Middle School	Mr. Gregory Anthony
J0704	Harnessing Wave Energy on Shorelines	

Fourth Place

Karl Reiter	Corkscrew Middle School	Mrs. Rachel Carter
J0748	Materials as Sound Barriers in Space	

Honorable Mention

### Junior *Physics & Astronomy*

James T Clublely	Gulf View Middle School	Mrs. Lori Frontz
J1210	Voltage Insultage	

Third Place

Micah Evans	North Naples Middle School	Ms. Natalie Moritz
J1211	Test Your Strength: Effect of Different Material Conductivity on Magnetic Fields' Strength	

Second Place

### Senior *Biomedical & Health Sciences*

Cameron W Hochman	Home School	Mr. Eric Hochman
S0307	The Effects of Cell Phone Radiation on Reproduction and Wing Phenotype Mutation in <i>Drosophila melanogaster</i>	

Third Place

### Senior *Physics & Astronomy*

Anabella Maria D Galang	HomeSchool	Dr. Kenneth Galang
S1224	Sun's Shades: What Color Best Protects Against UV Radiation	

Recognition

***9 awards for Collier Region***

## Dr. Nelson Ying Expo - Orange

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### Junior *Animal Sciences*

Luke J Arango J0139	Saint John Vianney Catholic School Does Time Matter When You are Frozen?	Mrs. Robin DeVito
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Fourth Place

### Junior *Biomedical & Health Sciences*

Hannah L Nair J0342	International Community School Depth Perception Challenge	Mrs. Terry Davis
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Third Place

### Junior *Chemistry*

Addie G Weeks J0534	International Community School Is Pricey Paint Worth It?	Mrs. Terry Davis
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Fourth Place

### Junior *Earth & Environmental Sciences*

Julia C Jamieson J0659	Lake Eola Charter School Solar Purification	Mr. Robert Madewell
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Third Place

### Junior *Intelligent Machines, Robotics, & Systems Software*

Nathan J Cheng J0922	Avalon Middle School Creating Visualizations of Intensity and Pitch Using Computer Software to Control Linear Actuators	Ms. Fadia Ahmed Hussien
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Honorable Mention

### Junior *Microbiology*

Salma Benbrahim J1121	Orlando Science Middle School At What Concentration is <i>Allium sativum</i> an Effective Antibacterial	Mr. Jason Stampas
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Fourth Place

### Junior *Physics & Astronomy*

Luke J Hawxwell J1249	Conway Middle School Radar Invisibility	Ms. Amy Kramer
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Fourth Place

### Junior *Plant Sciences*

Michael D Conti J1338	Maitland Middle School Evaluating Agriculture in a Martian Atmosphere	Dr. Anne Albright
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Second Place

### Senior *Animal Sciences*

Anjeli V Nandwani	Lake Highland Preparatory School	Mrs. Nicole A. Justice
S0134	The Effects of <i>Azadirachta indica</i> (Neem) and <i>Dysphania ambrosoides</i> (Epazote) on <i>Diaphorina citri</i> (Asian Citrus Psyllid)	

Third Place

**Senior**      *Biomedical & Health Sciences*

Meghana Ganjam	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S0335	Diffusion of Anti-Inflammatory Components of Sesame Seed Oil through Biological and Cellular Membrane Barriers	

Honorable Mention

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Rithvik Seela	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S0434	Use of Intestinal Scaffolding as a Pumping Assist Solution to Heart Failure	

Second Place

Noopur Ranganathan	Trinity Preparatory School	Mr. Michael Arney
S0435	An Alternatively-Spliced Form of S6K-1 Lacking the Catalytic Domain Function that Serves as a Dominant-Negative Inhibitor of mTORC1 Signalling-a Novel Drug Target to Combat Obesity, Cancer, and Cardiovascular Diseases	

Fourth Place

**Senior**      *Earth & Environmental Sciences*

Nirja N Shah	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S0642	Studying the Effects of Air Pressure on Asteroid Regolith	

Third Place

**Senior**      *Engineering*

Amber Z Yang	Trinity Preparatory School	Mr. Michael Arney
S0730	Multi-Orbit Space Debris Cloud Tracking Using Iterative Closest Points Registration with Machine Learning	

Second Place

**Senior**      *Environmental Engineering*

Hamzah F Jhaveri	Lake Highland Preparatory School	Mrs. Nicole A. Justice
S0835	Novel Agarose Processing Techniques: Development and Impregnation of Hyper-porous Agarose Emission Foam and Micro-cylindrical Agarose Particles	

Division Grand Award Winner And First Place

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

Alexander J Carnes	Lake Highland Preparatory School	Mrs. Nicole A. Justice
S0921	Fight Cyberbullying Using Key Phrase Identification Software	

Honorable Mention

**Senior**      *Mathematics & Computational Sciences*

Sumer S Sao	Trinity Preparatory School	Mr. Michael Arney
S1032	An Analysis of Optimal Balance in a Dynamic System	

Recognition

**Senior**      *Physics & Astronomy*

Parker J Coye	Lake Highland Preparatory School	Mrs. Nicole A. Justice
S1233	Fabrication of Graphene Based Single Electron Transistor with Chemically Transferred Graphene	

Honorable Mention

**Senior**      *Plant Sciences*

Radhika U Desai	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S1327	Using DNA Barcoding to Measure the Biodiversity of Moss Species in Wekiwa Springs State Park	

Honorable Mention

*19 awards for Dr. Nelson Ying Expo - Orange Region*

## East Panhandle

### Junior *Animal Sciences*

Kadi Casey J0108	Saint Mary Catholic School Quit Horsin' Around	Mrs. Laura Mcneill
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Third Place

Alexa F Drab J0109	Okaloosa STEMM Academy Neonictinoids Role In Colony Collapse Disorder: Infliction or Fiction?	Mrs. Sarah Wilson
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Second Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Maura C Liles J0405	Saint Mary Catholic School Regeneration Station: The Immune Analysis of Cell Regeneration of Proven Healing Liquids	Mrs. Laura Mcneill
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Honorable Mention

### Junior *Chemistry*

Benjamin D Homan J0509	Okaloosa STEMM Academy Does Humidity Affect Carbon Dioxide Absorption by Polyethyleneimine ?	Mrs. Sarah Wilson
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Honorable Mention

Gabriel P Lerner-Sperow J0510	Okaloosa STEMM Academy Hydrogen Production through Ratio Variance of Sodium Carbonate and Calcium Hydroxide	Mrs. Sarah Wilson
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Second Place

### Junior *Engineering*

James Baird J0711	C. W. Ruckel Middle School G-Whiz!: Which Foam Will Be the Most Effective at Decreasing the Number of G's In a Football Helmet Collision to Minimize the Impact on the Brain?	Mrs. Scarlett Brock
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Recognition

Makenzie J Marez J0712	Liza Jackson Preparatory School Stifle the Cost of Anterior Cruciate Ligament Kneed in <i>Canis lupus familiaris</i>	Dr. Tavia Marez
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Second Place

Charles B Sherwin, III J0714	Okaloosa STEMM Academy For Your Ears Only	Mrs. Sarah Wilson
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First Place

### Junior *Environmental Engineering*

Nicole M Terry J0810	Okaloosa STEMM Academy Solidification and its Effects on Landfill Airspace	Mrs. Sarah Wilson
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Fourth Place

Naomi E Barr J0814	Okaloosa STEMM Academy The Silent Tsunami	Mrs. Sarah Wilson
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Recognition

**Junior**      *Microbiology*

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Alexandra M Manion	Saint Mary Catholic School	Mrs. Laura Mcneill
J1103	Got Algae? Can Environmental Conditions Alter Our Global Gases, and if so, Are There Conditions in Which a Primary Producer Can Minimize Potential Negative Effects, therefore Aid in the Alteration of these Effects?	

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Third Place

**Junior**      *Physics & Astronomy*

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Emily S Daldine	Saint Mary Catholic School	Mrs. Laura Mcneill
J1217	Bubbles Continue to Implode	

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First Place

**Senior**      *Chemistry*

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Ian J Zegouros	Niceville High School	Mrs. Gina Emery
S0506	The Durability of Guitar Strings	

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Honorable Mention

**Senior**      *Engineering*

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Daniel C Bobbitt	Niceville High School	Mrs. Gina Emery
S0707	Go with the Flow - Increasing the Efficiency of the Tesla Turbine to Reduce the Cost of Cleaner Energy Generation from Natural Gas	

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Fourth Place

**Senior**      *Physics & Astronomy*

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Camille A Miles	Niceville High School	Mrs. Gina Emery
S1206	Thermoelectric Generator Powered Tracking Concentrated Photovoltaic System	

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Division Grand Award Winner And First Place

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Jackson A Cook	Niceville High School	Mrs. Gina Emery
S1207	Real-Life Levitation: A study of the Correlation Between a Standing Wave's Number of Nodes and Wave Strength	

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Fourth Place

***16 awards for East Panhandle Region***

## Heartland

### Junior *Animal Sciences*

Emma R McGuckin	Hardee Junior High School	Mrs. Kimberly R McGuckin
J0122	Does the type of Fertilizer, Citrus 20-5-20, or Farming 9-12-12 Affect the Survival Rate of <i>Daphnia magna</i> ? Year 3	

Fourth Place

Abigail Penfield	Avon Park Middle School	Mr. Steven Manley
J0123	A Comprehensive Look into Capturing Methods for Aethina Murray in <i>Apis mellifera</i> Hives	

Third Place

### Junior *Behavioral & Social Sciences*

Devam P Patel	Hill-Gustat Middle School	Mrs. Tari Hornick
J0211	Energy Drink Consumption : More Than Meets the Heart; Public Education to Modify This Behavior Causing Cardiac Arrhythmia	

Third Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Kartik Ananthan	Hill-Gustat Middle School	Mrs. Tari Hornick
J0411	Don't Cry Over Expired Milk	

Fourth Place

### Junior *Earth & Environmental Sciences*

Abigail L Holcomb	Yearling Middle School	Mrs. MeLinda Gray
J0636	Algae Invasion! Investigating the Effect of Fertilizer on the Growth of <i>Chlorophyta chlorella</i>	

Third Place

Zander R Yeomans	Hardee Junior High School	Mrs. Kim W Davis
J0637	Does Climate Change Affect the Movement of Salinity Through the Lower Areas of the Peace River?	

Fourth Place

### Junior *Engineering*

Camila Rimoldi Ibanez	Sebring Middle School	Mrs. Donna Tomlinson
J0741	Is Your Smart Phone Leaking? Year 2	

Fourth Place

### Junior *Microbiology*

Emma G Hays	Hardee Junior High School	Mr. Larry McCandless
J1114	Does the OTC NSAID Naproxen Affect the Growth of Bacteria More than Various Antibiotics? Year 2	

Third Place

### Junior *Physics & Astronomy*



Brin M Conerly	Hardee Junior High School	Mr. Larry McCandless
J1234	Does the Varian from Gray to Black Affect the Ability of an Object's Converting Solar to Heat Energy?	

Recognition

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Siddharth S Ananthan	Sebring High School	Mrs. Vanessa Sinness
S0418	Starbucks : The New BP	

Recognition

Dylan W Davis	Hardee Senior High School	Ms. Tabita Grosu
S0419	Does Type of Soil Mixed with Cow Excreta Affect the Time it Takes for Potential Methane Production to be Converted into Electrical Power? Year Four	

Third Place

**Senior**      *Chemistry*

Cristian Rios	Okeechobee High School	Mrs. Wendy Reister
S0520	Identifying a Correlation between Water Quality and Socioeconomic Status	

Fourth Place

**Senior**      *Microbiology*

Delaenam A Akahoho	Okeechobee High School	Mrs. Wendy Reister
S1115	To Resist or Not to Resist	

Recognition

Jackson R Driskell	Hardee Senior High School	Ms. Tabita Grosu
S1116	Does the Frequency of Ultrasonic Waves Affect the Growth of <i>Prorocentrum</i> ?	

Honorable Mention

Cady C McGehee	Okeechobee High School	Mrs. Wendy Reister
S1117	The Performance of Lime, Chlorhexidine Gluconate Solution, Bleach Solution, and Aeration of the Soil Against <i>Mycoplasma bovis</i> in Recycled Sand Bedding - A Four Year Study	

Third Place

**Senior**      *Plant Sciences*

Rohin Patel	Sebring High School	Mrs. Angela Mann
S1315	DNA Barcoding of Unique and Rare Plants in the Lake Wales Ridge	

Honorable Mention

**16 awards for Heartland Region**

## Hernando

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### Junior *Animal Sciences*

Maia Truog	Challenger K8 School of Science and Mathematics	Mrs. Jennifer Andress
J0132	Wi-Fly: The Effect of Wi-Fi and Laptop Computer Radiation on the Lifespan of a House Fly	

Recognition

Emma N Rodriguez-Pajerski	Challenger K8 School of Science and Mathematics	Mrs. Jennifer Andress
J0134	Death of <i>Daphnia</i>	

Fourth Place

### Junior *Behavioral & Social Sciences*

Annelise G Youngblood	Challenger K8 School of Science and Mathematics	Mrs. Shone Jung
J0222	The Effect of Age on Lung Capacity	

Honorable Mention

### Junior *Earth & Environmental Sciences*

David P Marquis	Challenger K8 School of Science and Mathematics	Mrs. Colleen Doulk
J0653	Insight in Continental Convergent Plate Boundaries: The Effect of Different Materials on the Height of Mounds Created by Lateral Compression	

Recognition

### Junior *Environmental Engineering*

Patrick W Sykora	Challenger K8 School of Science and Mathematics	Mr. Greg Shaw
J0835	Microbial Fuel Cells: Better Living Through Science	

Second Place

### Senior *Earth & Environmental Sciences*

Emily M Carr	Springstead High School	Mr. Chris Auricchio
S0638	The Effect of Fluorescent Emission Levels on the Coral Polyp Percent Mortality of <i>Briareum violacea</i> , <i>Zoanthid sp.</i> , and <i>Sympodium caeruleum</i> in a Heat Stress Environment	

Honorable Mention

### Senior *Environmental Engineering*

Raleigh G Forbell	Springstead High School	Mr. Chris Auricchio
S0831	Second Year Study: Deployment Method for New Artificial Reef Design to Effectively Enhance and Conserve Marine Life	

Recognition

***7 awards for Hernando Region***

## Hillsborough

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### Junior *Earth & Environmental Sciences*

Christopher T Cantor	Corbett Preparatory School of IDS	Mr. Jeff Keene
J0646	The Effect of a Hurricane on the Biodiversity of Microorganisms in the Tampa Bay Estuary	

Fourth Place

### Junior *Environmental Engineering*

Samuel L Glow	Williams Middle Magnet School	Mrs. Judy Grieco
J0828	Pollution Reduction Analysis Utilizing Phytoremediation for Stormwater Outfalls in the Hillsborough River Watershed, 2nd Year Study	

Honorable Mention

### Junior *Intelligent Machines, Robotics, & Systems Software*

Arko A Ghosh	Williams Middle Magnet School	Mrs. Judy Grieco
J0918	i-Cane 2.0: Smart Navigation for the Visually Impaired	

Third Place

### Senior *Biomedical & Health Sciences*

Sayyada Kazim	Tampa Bay Technical High School	Mr. Bryan Kelly
S0328	Vitamin E Delta-tacotrienol Targets Cancer Stem Cell Transcription Factors and Inhibits Human Pancreatic Cancer Metastasis	

Division Grand Award Winner And First Place

### Senior *Chemistry*

Clarice Su	C. Leon King High School	Mrs. Nicole Richards-Works
S0528	Tuning Carbon Dioxide Capture Behavior Via Ion Exchange in Porous Organic Polymers	

Third Place

### Senior *Engineering*

Sruthika Baviriseaty	C. Leon King High School	Mrs. Nicole Richards-Works
S0724	Rare Earth Metal Doped Titanium Dioxide Upconversion Photocatalysis for Historical Building Preservation Applications	

Fourth Place

### Senior *Mathematics & Computational Sciences*

Autumn S Thompson	Strawberry Crest High School	Mrs. Dianne Schroeder
S1020	The Fourier Series Applied to Florida Beach Waves	

Fourth Place

### Senior *Microbiology*

Aksheta S Kanugnati	Carrollwood Day School	Mrs. Carrie Prieto
S1123	DNA Damage Repair in <i>Saccharomyces cerevisiae</i> Model System Using Beta Carotene or Chitosan Nanoparticles	

Fourth Place

**Senior**      *Physics & Astronomy*

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Jack Morrison	Strawberry Crest High School	Mr. Jonathan Ferrer
S1228	Fluid Dynamics and Hurricane Katrina	

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Fourth Place

**Senior**      *Plant Sciences*

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Miranda Bihler	Durant High School	Dr. Megan Faliero
S1320	How Does Artificial Light Color Affect the Amount of Oxygen Produced in the Photosynthesis Process by Elodea Plants?	

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Honorable Mention

***10 awards for Hillsborough Region***

## Indian River

### Junior *Animal Sciences*

Kiran S Arain	Saint Edwards School	Mr. Karl Leonhardt
J0118	The Effect of <i>Encarsia protransvena</i> on <i>Singhiella simplex</i> Populations Infesting <i>Ficus benjamina</i>	

Second Place

Lucy E Long	Storm Grove Middle School	Mrs. Joan Martinelli
J0119	Can Glucono Delta Lactone Improve the Efficacy of <i>Metarhizium anisopliae</i> by Inhibiting the Immune System of Termites?	

Fourth Place

Abby O Stenn	Gifford Middle School	Mrs. Melissa Sleeper
J0120	The Efficiency of Neem oil Against the Vectors of Zika, Chikungunya, and Dengue Virus	

Fourth Place

### Junior *Behavioral & Social Sciences*

Sarah A Bickel	Storm Grove Middle School	Mrs. Joan Martinelli
J0209	A Stroop Effect Test: Will Experienced Teachers Perform Better When Pressed?	

Second Place

### Junior *Earth & Environmental Sciences*

Ellie M Schrock	Saint Edwards School	Mr. Karl Leonhardt
J0661	Stop the Leach	

Third Place

### Junior *Engineering*

James R Elford, IV	Sebastian Charter Junior High School	Mrs. Christina Brako
J0725	Cool Supercharged Sunlight	

Third Place

Andy J Henriquez	Storm Grove Middle School	Mrs. Carlean Browning
J0726	The Golf Airfoil	

Fourth Place

### Junior *Physics & Astronomy*

Zachary C Hessler	Gifford Middle School	Mrs. Melissa Sleeper
J1229	Save Our Silence: A Digital Approach to Reducing Noise Pollution	

First Place

### Senior *Animal Sciences*

William L Johnson	Saint Edwards School	Dr. Kerryanne Monahan
S0115	Migratory Passerines' Usage of Australian Pine	

Third Place

Sana Shareef	Saint Edwards School	Dr. Kerryanne Monahan
S0132	Using Response Surface Methods to Optimize a Repellant for the Invasive Sri Lankan Weevil <i>Mylocherus undecimpustulatus undatus</i> Marshall (Coleoptera: Curculionidae: Entiminae)	

Fourth Place

**Senior** *Biomedical & Health Sciences*

Olivia J Lazorik	Saint Edwards School	Dr. Kerryanne Monahan
S0336	A Model for Treating Neurodegenerative Diseases: The Effect of Caffeine on the Learning Behavior and Regeneration of <i>Dugesia tigrina</i> (Brown Planaria)	

Fourth Place

**Senior** *Earth & Environmental Sciences*

Spencer J Toll	Vero Beach High School	Mrs. Heather Holden
S0648	Indium Prospecting Using Neural Nets	

First Place

Joshua L Tucker	Vero Beach High School	Mrs. Heather Holden
S0648	Indium Prospecting Using Neural Nets	

First Place

**Senior** *Environmental Engineering*

Omar Shareef	Saint Edwards School	Dr. Kerryanne Monahan
S0838	The Creation of an Autonomous, All-Electric Aquatic Vehicle, Powered by a Novel Power Regeneration System	

Second Place

**Senior** *Microbiology*

Griffin M Wagner	Vero Beach High School	Mrs. Heather L. Holden
S1112	Investigating Synergistic Relationships of Environmental Salinity and Nitrate Levels on the Proliferation of <i>Anabaena variabilis</i>	

Second Place

**Senior** *Physics & Astronomy*

Sarah M Weyand	Vero Beach High School	Mrs. Heather L. Holden
S1219	Aliens and Explosions: How Supernovae Affect the Habitable Zones of Exoplanets	

Second Place

**Senior** *Plant Sciences*

Alexi K Dong	Indian River Charter High School	Mrs. Heather L. Holden
S1312	Exploring Electro-culture: The Effect of Varying Electrical Voltage, Duration, and Periodicity on the Growth of <i>Lactuca sativa</i>	

Recognition

*17 awards for Indian River Region*

## Lake

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### Junior *Plant Sciences*

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Marissa Golem	Imagine South Lake Charter School	Mrs. Korrin Dykhouse
J1321	The Effects of Cryo-Freezing on Seeds	

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Second Place

### Senior *Mathematics & Computational Sciences*

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Evan J Kirby	East Ridge High School	Mr. Alec Lockhart
S1013	A Novel Solution for Integer Factorization with Cryptographic Applications	

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Recognition

*2 awards for Lake Region*

## Lockheed Martin Manatee

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### Junior *Engineering*

Maxwell C Fletcher J0737	Braden River Middle School Strongest of the Strong: A Study of Structural Efficiency of Two Truss Bridges	Mrs. Jennifer Hall
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Honorable Mention

### Junior *Microbiology*

Stephanie A Bobrek J1112	Martha B. King Middle School The Major Glow Up: Bioluminescent Algae	Mr. Shane Edelkind
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Honorable Mention

### Senior *Environmental Engineering*

Anna M Zimmerman S0826	Braden River High School A Solar Powered Method of Extracting Drinking Water from the Air	Ms. Marybeth Witham
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Honorable Mention

### Senior *Mathematics & Computational Sciences*

Emma A Johnston S1021	Manatee High School Hardy-Weinberg Principle: What Population Size Is Large Enough?	Ms. Patricia L. Zalo
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Recognition

***4 awards for Lockheed Martin Manatee Region***



## Martin

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### Junior *Biomedical & Health Sciences*

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Kyle T Ramos J0336	Saint Joseph Catholic School The Effect of Energy Drinks on the Cardiovascular System	Mrs. Norma Kuehn
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Honorable Mention

### Junior *Engineering*

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Viraj Singh J0739	Dr. David L. Anderson Middle School Cellphone Radiation-Shields Up!	Mrs. Linda J. Stitely
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Third Place

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Steven C Vokoun J0740	Murray Middle School Cones are No Longer Just for Ice Cream	Mrs. Michele Jerrells
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Second Place

### Junior *Physics & Astronomy*

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Gisele C Crary J1243	Saint Joseph Catholic School Does the Sun Rotate?	Mrs. Norma Kuehn
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Honorable Mention

### Senior *Animal Sciences*

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Shantanu S Jakhete S0126	South Fork High School Sustainable Mosquito Control: A Chemical-free, Low-Cost Approach for Controlling <i>Aedes aegypti</i> , A Vector of Zika	Mr. Marc Turull
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Division Grand Award Winner And First Place

### Senior *Engineering*

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Caroline G Nolan S0726	Clark Learning Center ESPERER (Economic System Producing Energy Resources and Environmental Results)	Ms. Jennifer Bartow
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Fourth Place

### Senior *Intelligent Machines, Robotics, & Systems Software*

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Varun A Lakshmanan S0919	South Fork High School A Novel iOS Application : Measuring Blood Speed of the Radialis Indicis Artery	Mr. George Fountoulakis
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Fourth Place

***7 awards for Martin Region***

## Monroe

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### Junior *Environmental Engineering*

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Emma K Kost	Treasure Village Montessori School	Mrs. Bobbi Burson
J0819	Organic Growth in the Underwater Region on Construction Materials	

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Honorable Mention

### Junior *Plant Sciences*

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Bodie C Robbins	Treasure Village Montessori School	Mrs. Bobbi Burson
J1318	Withering Weeds	

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Recognition

*2 awards for Monroe Region*

## Northeast Florida

### Junior *Animal Sciences*

Liam H Hughes	Kirby Smith Middle School	Ms. Melanie Boyer
J0114	Effects of Noise Pollution on Hatching Rate of Brine Shrimp	

Honorable Mention

Joel Valan	Darnell Cookman Middle/High School of Medical Arts	Ms. Madge Nanney
J0115	Preventing Zika: The Effect of the pH of Water on the Growth and Survivability of Mosquito Larvae <i>Culex pipiens</i>	

Third Place

### Junior *Biomedical & Health Sciences*

Izabelle J Young	San Jose Catholic School	Mr. Patrick Madigan
J0315	Solving the Bioload of Xerostomia	

Second Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Grace M Frazier	San Jose Catholic School	Mr. Patrick Madigan
J0407	Do Different Types of Kitchen Knives Affect the Amount of Cross-Contamination of Gluten?	

Recognition

### Junior *Chemistry*

Megan S Erne	San Jose Catholic School	Mr. Patrick Madigan
J0514	The UV and Sunscreen Battle	

Fourth Place

### Junior *Earth & Environmental Sciences*

Andrew J Horkan	San Jose Catholic School	Mr. Patrick Madigan
J0625	Converting Yard Waste and Paper into Clean Energy	

First Place

Juliana R Namen	San Jose Catholic School	Mr. Patrick Madigan
J0626	The Effect of Bioadsorbent Materials on the Concentration of Heavy Metals in River Water	

Second Place

Jasmine Roncevic	Julia Landon College Preparatory Middle School	Mr. Daniel Geary
J0627	Biodegradation of Polystyrene by <i>Tenebrio molitor larvae</i>	

Second Place

### Junior *Engineering*

Liam X Leahy	Holy Family Catholic School	Mrs. Yanny Salom
J0720	Designing a Buoyant Wind Turbine Platform	

Recognition

**Junior**      *Intelligent Machines, Robotics, & Systems Software*

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John Blake Caven	Julia Landon College Preparatory Middle School	Mrs. Pamela Smith
J0910	Athletic Drones? The Effect of Autonomous Algorithms on Robotic Intelligence	

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Third Place

**Junior**      *Physics & Astronomy*

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Jack W Brophy	San Jose Catholic School	Mr. Patrick Madigan
J1224	Using Body Heat to Create Electricity	

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Second Place

**Junior**      *Plant Sciences*

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Mailene G Miranda	Saint Joseph Catholic School	Mrs. Lizette Woodward
J1317	What Makes Science A-Peel-ing: Tensile Strength of Banana Fibers	

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Third Place

**Senior**      *Animal Sciences*

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William G Canty	Bishop John J. Snyder High School	Mr. Joseph Waas
S0111	The Effects of Genetic Mutation and Aspartame Exposure on <i>Drosophila melanogaster</i> Olfactory Response	

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Fourth Place

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Katelyn S Nicholson	Episcopal School of Jacksonville	Mrs. Marion Zeiner
S0112	Analyzing the Correlations Between Genetically Modified Soybean Oil and the Development of <i>Gallus domesticus</i> Embryos	

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Fourth Place

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James A Staman	The Bolles School	Dr. Kathryn Halloran
S0135	Blue Light Effect Study-Impact on <i>Drosophila's</i> Cognitive Ability and Changes in Gender Ratios	

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Honorable Mention

**Senior**      *Biomedical & Health Sciences*

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Lindsay S Poulos	Episcopal School of Jacksonville	Mrs. Marion Zeiner
S0316	The Effects of Secondhand E-Cigarette Vapor on <i>Drosophila melanogaster</i>	

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Second Place

**Senior**      *Cellular/Molecular Biology & Biochemistry*

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Caroline E Anderson	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0412	The Effects of pH on Antigen-Antibody Interactions in Saline Agar	

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Fourth Place

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Grant B Szymanski	The Bolles School	Dr. Kathryn Halloran
S0413	The Effect of Cell Phone EMR on Bioluminescence	

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Honorable Mention

Honghao Zhu	Episcopal School of Jacksonville	Mrs. Marion Zeiner
S0414	Exploration of Serum-based Biomarkers of Benign versus Malignant Renal Masses	

Honorable Mention

**Senior**      *Chemistry*

Zhaoxian Zhang	Episcopal School of Jacksonville	Mrs. Marion Zeiner
S0514	Aluminum Recovery in Al-Air Primary Batteries for Innovative Fuel Cell Design	

Fourth Place

**Senior**      *Earth & Environmental Sciences*

Graham P Ungrady	The Bolles School	Dr. Kathryn Halloran
S0647	Comparing Viability and Photosynthetic Capability of Algae Cultures Versus Algae Beads	

Second Place

**Senior**      *Engineering*

Tara M Martin	Episcopal School of Jacksonville	Mrs. Marion Zeiner
S0712	Piezoelectric Biomechanical Energy Harvesting Using Direct Impact and Contactless Magnetic Plucking to Power Wearable Biometric Devices	

Recognition

Devanik Biswas	Stanton College Preparatory School	Ms. Tamla Simmons
S0735	Fabrication of a Novel Nanoporous Hybrid and Multi-layer Membrane for a Drug Delivery System	

Third Place

**Senior**      *Environmental Engineering*

Sneha Reddy	The Bolles School	Dr. Kathryn Halloran
S0812	Introduction of Mycorrhizae into Non-Mycorrhizal Plants: A Model to Reduce Phosphorous Fertilizer	

Third Place

Ann M Walton	The Bolles School	Dr. Kathryn Halloran
S0812	Introduction of Mycorrhizae into Non-Mycorrhizal Plants: A Model to Reduce Phosphorous Fertilizer	

Third Place

**Senior**      *Microbiology*

Shreyas K Chetan	The Bolles School	Dr. Kathryn Halloran
S1107	Finding Optimal Concentrations and Solvents for Turmeric- A Fight against <i>Streptococcus pyogenes</i>	

Fourth Place

Kathleen M McClellan	Bishop Kenny High School	Mrs. Victoria Schmitt
S1108	Sterilization of Bacteria on Restaurant Menus to Reduce Cross Contamination	

Fourth Place

**Senior**      *Physics & Astronomy*

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Kavitha Vudatha	Stanton College Preparatory School	Ms. Tamla Simmons
S1214	Low Cost Patient-Nurse Communication System	

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Fourth Place

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MaryAlice D Young	Bishop Kenny High School	Mrs. Victoria Schmitt
S1215	Using a System of Electromagnetic Fields to Create a Cumulative Force that Simulates the Effects of Earth's Gravity in Outer Space	

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Second Place

**Senior**      *Plant Sciences*

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Hannah N Lee	The Bolles School	Dr. Kathryn Halloran
S1307	Effectiveness of Water Hyacinth as a Fertilizer on Basil Growth	

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Fourth Place

*30 awards for Northeast Florida Region*

## Osceola

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### Junior *Earth & Environmental Sciences*

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Donovan R Bohanan	Neptune Middle School	Mr. John Prow
J0612	Water Works: How Does Water Treatment Affect Water Quality?	

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Recognition

### Junior *Engineering*

---

Madeline J Perry	Neptune Middle School	Mrs. Patricia Stacy
J0703	Lift vs Drag: Which Airfoil is the Most Efficient and Has the Greatest Lift?	

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Recognition

### Junior *Mathematics & Computational Sciences*

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Noah B Jenkins	Neptune Middle School	Mrs. Allyn Short
J1004	Windows for Thought!	

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Fourth Place

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Arseny E Kuzmin	Celebration K-8 School	Mrs. Denise Kanner
J1005	Foams and Sponges: Surface Density Study	

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Honorable Mention

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Sophia M Zavada	Celebration K-8 School	Mrs. Denise Kanner
J1005	Foams and Sponges: Surface Density Study	

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Honorable Mention

### Junior *Physics & Astronomy*

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Samuel R Lewis	Celebration K-8 School	Mrs. Denise Kanner
J1208	Reach for the Sky! The Impact of Length vs Weight on Rocket Launch Altitude	

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Fourth Place

***6 awards for Osceola Region***

## Palm Beach

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### Junior *Animal Sciences*

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Zoe R Krishtul	The Weiss School	Mr. Kevin Simmons
J0101	The Effect of Desiccation on Cold Tolerance in Tardigrades	

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Honorable Mention

### Junior *Behavioral & Social Sciences*

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Helen F. Peluso	Alexander D. Henderson University School	Ms. Suzette Milu
J0201	Can a Person's Decision to Take a Risk That Benefits a Team be Influenced by Limiting Knowledge of Purported Teammates Performance?	

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First Place

### Junior *Biomedical & Health Sciences*

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Nikita R Tanguturi	Bak Middle School of the Arts	Mrs. Rhonda Steinmetz
J0303	Jump and Shoot: Measuring the Amount of Stress on the Patellar Tendon	

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Third Place

### Junior *Chemistry*

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Austin D Stein	Eagles Landing Middle School	Ms. Kim Mercurio
J0501	Electrolyte Dispute	

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Honorable Mention

### Junior *Earth & Environmental Sciences*

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Ryan F Hoffman	Arthur I. Meyer Jewish Academy	Mrs. Judith Edelman
J0601	Is E85 More Efficient and More Eco-Friendly than Regular Gasoline?	

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Third Place

### Junior *Engineering*

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Marts A Purins	The Weiss School	Mr. Kevin Simmons
J0701	The Effects of Attack Angle and Windspeed on Lift for Different Airfoils	

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Recognition

### Junior *Intelligent Machines, Robotics, & Systems Software*

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Ward C Genoway	IDEAL School of Advanced Learning	Ms. Rebecca Clark
J0901	Using Drone Technology to Detect Improvised Explosive Devices in Emergency Combat Zone Navigation	

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Fourth Place

### Junior *Mathematics & Computational Sciences*

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Victoria K Cross	The Weiss School	Mr. Kevin Simmons
J1001	Impacts of Algae Feedstuff Substitutions on a Simulated Holstein Milking Herd	

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Fourth Place

### Junior *Physics & Astronomy*



Hannah S Feingold J1201	Loggers' Run Middle School Studying Chirality with a Homemade Polarimeter	Mr. James Byrd
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Fourth Place

**Junior** *Plant Sciences*

Sam A Hazamy J1344	Alexander D. Henderson University School Does Water Hyacinth Limb Removal Percentage Effect the Plant's Growth Rate?	Ms. Suzette Milu
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Second Place

**Senior** *Animal Sciences*

Ayse S Demircan S0102	Florida Atlantic University High School Elasmobranch Olfactory Organ Morphology	Dr. Tricia Meredith
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Second Place

Jessica Young S0103	Palm Beach Central High School Synthesis of a Soy Protein Hydrogel for Invasive Snail Control in Agricultural Settings	Mr. William Bartenslager
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Third Place

Daniel A Clein S0136	Wellington Community High School Comparative Mosquito Larval Bioassays	Mr. Jay Labossiere
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Fourth Place

**Senior** *Biomedical & Health Sciences*

Ray Jia S0301	Alexander W. Dreyfoos School of the Arts Smells Like a Solution Autophagy in Chemosensory Neurons is Essential for Lipid Metabolism Regulated by Insulin-like Signaling in <i>Caenorhabditis elegans</i>	Mr. Stephen Anand
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Second Place

Deandra Williams S0303	Palm Beach Central High School The Role of Crumb Rubber as a Mutagen and Neurological Disruptor in <i>Drosophila melanogaster</i>	Mr. William Bartenslager
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Fourth Place

Srijith K Nair S0304	American Heritage School of Boca/Delray Antibiotic Properties of <i>Moringa oleifera</i> to Combat Superbugs!	Mrs. Iris Thompson
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Third Place

**Senior** *Cellular/Molecular Biology & Biochemistry*

Chevara Joseph S0437	Florida Atlantic University High School Loss of Neurofibromin During Development Increases Grooming in <i>Drosophila</i>	Dr. Tricia Meredith
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Recognition

**Senior** *Chemistry*

Jorgi Mandelbaum S0501	Spanish River Community High School Fruits Fight Free Radicals: Antioxidant Ability in Fruits: Holding Off Free Radicals Through Oscillating Reactions	Ms. Mary Fish
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Recognition

**Senior** *Earth & Environmental Sciences*

Jonathan C Chin Cheong	Florida Atlantic University High School	Mrs. Robin Barkes
S0601	Evaluating the Ecotoxicity of Impermeable Surfaces to Improve Urban Water Quality: Quantification of Low Impact Developmental Design Efficiencies and Synthesis of an Eco-Efficient Asphalt Substrate with Functionalized Pollutant Adsorption Capabilities	

Fourth Place

William Z Gao	Suncoast Community High School	Mr. Jeffrey Laufer
S0602	Stormwater Treatment Area Performance Prediction Using Artificial Neural Network	

Third Place

Celinie M Nguyen	Palm Beach Central High School	Mr. William Bartenslager
S0646	Soil Remediation, Water Pollution Prevention, and Soil Stabilization Through the Combination of Soluble and Insoluble Nanocomposite Hydrogels - A Two-Year Study	

Honorable Mention

**Senior**      *Engineering*

Hannah D Herbst	Florida Atlantic University High School	Mrs. Robin Barkes
S0701	Protecting Civilians and Public Service Personnel through an Early Identification System for Airborne Chemicals: SEIAC	

Third Place

Richard G Leonard	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0702	Busting Barnacles	

Fourth Place

**Senior**      *Environmental Engineering*

Vithulan Suthakaran	Florida Atlantic University High School	Mrs. Robin Barkes
S0801	SEA Skimmer: The Development of a Sustainable Environmental Accumulation Skimmer in Order to Extract Marine Pollution from a Variety of Geographical Locations	

Fourth Place

Stefan Wan	Alexander W. Dreyfoos School of the Arts	Mr. Michael Rathe
S0802	Functionalizing Biochar with Layered Double Hydroxides for Removal of Phosphate and Nitrate from Aqueous Solutions	

Second Place

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

Alexis M Base	Florida Atlantic University High School	Mrs. Robin Barkes
S0901	C.O.D.E for Invasive Species; Developing an Inexpensive Computer Operated Detection Environment for Identification and Eradication of Species Such as <i>Pterois volitans</i>	

Fourth Place

Rishu Mohanka	Suncoast Community High School	Mr. Jeffrey Laufer
S0902	A Novel Computational Method for Early Detection of Coronary Artery Disease and Heart Attacks	

Honorable Mention

**Senior**      *Microbiology*

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Jason A Kristol	Spanish River Community High School	Ms. Mary Fish
S1101	Placing the Misplaced <i>Purpurea</i>	

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Recognition

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Elena Lopez-Belio	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S1102	Plastic Drinking Bottles: A Haven for Microbial Growth	

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Recognition

**Senior**      *Plant Sciences*

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Andrew Phillips	Seminole Ridge High School	Mrs. Lyn Slygh
S1302	Cultivation of <i>Lolium multiflorum</i> in Martian Soil	

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Fourth Place

***30 awards for Palm Beach Region***

## Pasco

### Junior *Engineering*

Victoria N Perez J0718	Centennial Middle School Wonderful Wind Turbines	Mrs. Jennifer Kaylor
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Fourth Place

### Junior *Environmental Engineering*

Charles E Reedy J0812	Crews Lake Middle School Clean Energy Sources	Ms. Laura Hull
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Third Place

Madeline M Murch J0813	Charles S. Rushe Middle School Blankets for the Minimization of Heat Loss and Evaporation	Mrs. Jennifer Yasurek-Dingman
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Fourth Place

### Junior *Physics & Astronomy*

Sarah A Menard J1221	Charles S. Rushe Middle School How Particle Size or Surface Terrain Affects the Amplitude of Seismic Waves Produced by a Meteor Impact	Ms. Joyce Naar
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Second Place

### Junior *Plant Sciences*

Lucien L Brunelle J1312	Bishop Larkin Catholic School The Effect of Allelopathy on Bean Seed Germination	Sr. Ogechi Offurum
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Fourth Place

### Senior *Biomedical & Health Sciences*

Chase A Olivanti S0310	Wiregrass Ranch High School How does N-Acetyl-5-Methoxytryptamine affect Cellular Respiration in <i>Saccharomyces cerevisiae</i> ?	Mr. Branden L. Anglin
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Recognition

### Senior *Chemistry*

Sreten Dedic S0508	J.W. Mitchell High School Investigating New Methods of Noninvasive Glucose Monitoring	Mr. Ed Braddy
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Recognition

### Senior *Mathematics & Computational Sciences*

Anmol Warman S1005	Academy at the Lakes Developing Novel Gene Candidates (MEF2A, LTA, LGALS2, ALOX5AP, and PDE4D), Through an Adaptive Genetic Algorithm, Support Vector Cluster, and Dynamic Bayesian Networks, to Analyze in a Learning Classifier System for a Highly Propitious CRISPR Therapy for Ischemic Heart Disease	Mrs. Colleen McCormick
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Third Place

### Senior *Physics & Astronomy*

Honorable Mention

***9 awards for Pasco Region***

## Pinellas

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### Junior *Behavioral & Social Sciences*

Ria M Patel	Plato Academy Tarpon Springs	Mrs. Jill Keller
J0214	How Does the Type of Music Playing in the Background Affect Short Term Memory in Students?	

Third Place

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### Junior *Biomedical & Health Sciences*

Kaitlynn A Varga	Cathedral School of Saint Jude	Mrs. Joanne Bujak-Dominiak
J0328	Iron Content in Conventional Cereals	

Recognition

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### Junior *Earth & Environmental Sciences*

Tori E Epperson	Saint Cecelia Interparochial School	Ms. Heather Manter
J0622	Does Garbage Affect the Process of Echo Transmission?	

Honorable Mention

Gabrielle Grant	Saint Cecelia Interparochial School	Ms. Heather Manter
J0643	Putting the Brakes on Stormwater! What Is the Best Method to Prevent Sand Buildup in Front of the Stormwater Drain?	

Recognition

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### Junior *Intelligent Machines, Robotics, & Systems Software*

Justin Ming	Saint Cecelia Interparochial School	Ms. Heather Manter
J0915	The Arduino, GPS, Iridium Transmitting and Location Device (AGITLD)	

Honorable Mention

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### Senior *Biomedical & Health Sciences*

Matthew Dickens	CAT/ Lakewood High School	Mr. Paul H. Dickman
S0337	Analysis of Football Helmet Safety	

Recognition

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### Senior *Chemistry*

Tiffani Byun	Indian Rocks Christian School	Mrs. Tracy Springman
S0509	Using a Microbial Fuel Cell to Create Electricity from Mud	

Honorable Mention

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### Senior *Physics & Astronomy*

Hannah T Anderson	Indian Rocks Christian School	Mr. Ben Futoran
S1210	The Photonic Effect of an Optic Lens on a Photovoltaic Cell	

Recognition

***8 awards for Pinellas Region***

## Polk

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### Junior *Biomedical & Health Sciences*

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Matthew Werd J0338	Resurrection Catholic School Brain Pain!	Mrs. Lisa Schaal
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Division Grand Award Winner And First Place

### Junior *Chemistry*

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Zoe A Parker J0535	Lakeland Highlands Middle School Water and Electricity DO Mix	Ms. Judy Thomas
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Second Place

### Junior *Engineering*

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Matthew G Graham J0742	Berkley Accelerated Middle School Generating Electricity from the Pressure of Natural Falling Water	Mrs. Leslie Widner
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Fourth Place

### Junior *Intelligent Machines, Robotics, & Systems Software*

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Breanna K Newberg J0921	Lakeland Christian School Push it: Designing and Programming a Robot to Push A Button - Year II	Mrs. Jennifer Canady
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Recognition

### Senior *Chemistry*

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Jasper L Montgomery S0531	Bartow High School - IB An In Silico and In Vitro Study of Gold Nanoparticle Aggregates for Photothermal Ablation of Cancer Cells	Ms. Debbie Kennon
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Second Place

### Senior *Engineering*

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Grayson L Huntsinger S0731	Lakeland Grace Academy Mission To Mars: Designing a Spacecraft Impact Protection and Leak Detection System with Radiation Shielding	Mr. Blake Donaldsoon Monroe
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Division Grand Award Winner And First Place

### Senior *Environmental Engineering*

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Jacob S Butcher S0830	Polk Pre-Collegiate Academy The Energy Source of the Future: Research on the Efficiency of Photovoltaic Panels	Mr. Auburn Thompson
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Honorable Mention

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James Puentes S0830	Polk Pre-Collegiate Academy The Energy Source of the Future: Research on the Efficiency of Photovoltaic Panels	Mr. Auburn Thompson
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Honorable Mention

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Jose G Quintanilla S0830	Polk Pre-Collegiate Academy The Energy Source of the Future: Research on the Efficiency of Photovoltaic Panels	Mr. Auburn Thompson
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Honorable Mention

**Senior**                    *Mathematics & Computational Sciences*

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Manning Chuor S1024	X Degree	Bartow High School - IB	Ms. Debbie Kennon
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Honorable Mention

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Xuanhao Shi S1024	X Degree	Bartow High School - IB	Ms. Debbie Kennon
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Honorable Mention

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Grady G Daniels S1025	An Exploration in	Bartow High School - IB Textual Analysis	Ms. Debbie Kennon
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Fourth Place

**Senior**                    *Microbiology*

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Prerna Ravinder S1127	Prevention is Better than a Cure	Bartow High School - IB	Ms. Ashley McCabe
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Third Place

**Senior**                    *Physics & Astronomy*

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Austin R Banttari S1229	Linear Aspects- Exploring the Relationship between Aircraft Wing Aspect Ratio and Lift Generation	Central Florida Aerospace Academy of Kathleen High School	Mr. Justin Talley
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Third Place

**Senior**                    *Plant Sciences*

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Julia G Canady S1323	Weed Warfare: Investigating Allelopathy - Year 7	Lakeland Christian School	Mrs. Jennifer Canady
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Third Place

*15 awards for Polk Region*



## Sarasota

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### Junior *Biomedical & Health Sciences*

Sonica Prakash	Pine View High School	Mr. Edwin Stumpf
J0304	Developing a Medical Algorithm for Pharmacogenomics and Personalized Medicine	

Fourth Place

### Junior *Chemistry*

Gavin E Putnal	McIntosh Middle School	Ms. Dorothy Rieger
J0502	The Best Offense is a Diaper Defense	

Third Place

### Junior *Earth & Environmental Sciences*

Kassandra L Greenan	McIntosh Middle School	Ms. Dorothy Rieger
J0604	Plant Filtration	

Fourth Place

### Senior *Behavioral & Social Sciences*

Savannah M Jordan	Sarasota High School	Mr. Andrew Harshman
S0202	Testing the Effects of Traumatic Brain Injury on <i>Drosophila melanogaster</i>	

Third Place

### Senior *Biomedical & Health Sciences*

Teerth P Patel	Sarasota High School	Mr. Andrew Harshman
S0305	The Effects of Temperature on Synovial Fluid Viscosity via Magnetic Particle Translation	

Third Place

### Senior *Cellular/Molecular Biology & Biochemistry*

Codi J Elliott	Sarasota High School	Mr. Andrew Harshman
S0403	Modifying Substrate Mechanics to Engineer an <i>in vitro</i> Tumor Microenvironment	

First Place

### Senior *Engineering*

Kathryn E Savage	Sarasota High School	Mr. Andrew Harshman
S0703	Alzheimer's Treatment: Solubilized-Curcumin via Buccal Patch	

Second Place

### Senior *Microbiology*

Kathryn L Richards	Sarasota High School	Mr. Andrew Harshman
S1103	The Effect of Retinol, Thiamine, Ascorbic Acid, and Cholecalciferol on the Regeneration of Planarian and Neuron Corotic Mouse Stem Cells	

Third Place

***8 awards for Sarasota Region***

## Seminole

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### Junior *Behavioral & Social Sciences*

Jay D Nibhanupudy	Sanford Middle School	Mr. Brandon Van Nuys
J0216	Do You See What I Smell?	

Fourth Place

Laura E Darty	Saint Luke's Lutheran School	Mrs. Kelly Weeks
J0217	Change Your Font, Change Your Future: The Effects of Font on Memorization	

Second Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Deepika Kannan	Sanford Middle School	Ms. Cody Dulaney
J0417	Antioxidants in Food: A Second Year Study	

Third Place

### Junior *Chemistry*

Emily M Grossenbaugh	Saint Luke's Lutheran School	Mrs. Kelly Weeks
J0526	Print vs Nature	

Fourth Place

### Junior *Earth & Environmental Sciences*

Justin W Richburg	Saint Luke's Lutheran School	Mrs. Kelly Weeks
J0648	Mosquito Lagoon Water Quality	

Fourth Place

### Junior *Environmental Engineering*

Krithika Subramanian	Sanford Middle School	Mrs. Jacqueline Hepp
J0839	The Light that Drives You	

Third Place

### Junior *Microbiology*

Elise R Corley	Indian Trails Middle School	Ms. Nicole Gonzalez
J1113	Which Destroys More Bacteria: Synthetic or Natural Antibiotics?	

Recognition

### Junior *Physics & Astronomy*

Annika M L Vaidyanathan	Sanford Middle School	Ms. Cody Dulaney
J1242	Can We Have Some Quiet Please? The Effects of Shape and Profile on Noise!	

Third Place

### Junior *Plant Sciences*

Laboni Santra	Jackson Heights Middle School	Ms. Natalie Keene-Krops
J1330	FITC and Glucosamine Tracing Therapeutics in Leaf Using Florescent Dye	

Honorable Mention

**Senior**      *Animal Sciences*

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Benjamin G Shirey	Oviedo High School	Mr. William Furiosi
S0125	Predatory Chromatophore Response of Octopus <i>Filosus</i> on Unfamiliar Prey Items	

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Recognition

**Senior**      *Behavioral & Social Sciences*

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Samuel D Naranjo	Paul J. Hagerty High School	Mrs. Sarah Evans
S0222	Effects of Anxiety and Identity Development on Moral Consistency	

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Third Place

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Sapna K Patel	Oviedo High School	Mr. William Furiosi
S0228	Kemotions - Keys to Emotional Cues	

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First Place

**Senior**      *Earth & Environmental Sciences*

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Nidhi Ohri	Seminole High School	Ms. Ramsey Robinson
S0645	Synthetic Photosynthesis: Investigating the Potential of Single- and Double- Chamber Hydrogen Fuel Cells with the Use of a Catalyst Mixture as a Novel Approach to Hydrogen Production - Year 4	

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Fourth Place

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

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Aidan F Ryan	Paul J. Hagerty High School	Mrs. Sarah Evans
S0918	Computer Vision as a Flight Stabilization System for Autonomous UAVs	

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Second Place

**Senior**      *Mathematics & Computational Sciences*

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Jonathan P Sepulveda	Paul J. Hagerty High School	Mrs. Sarah Evans
S1022	Using Artificial Neural Networks to Predict Minimum Inhibitory Concentration of Candidate Antibiotics Against <i>E. coli</i> and <i>X. alfaiae</i>	

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Fourth Place

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Mitchell A Hammack	Oviedo High School	Mr. William Furiosi
S1023	Early Skin Cancer Detection Using Convolutional Neural Networks - Year Two	

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First Place

**Senior**      *Microbiology*

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Samantha L Bates	Paul J. Hagerty High School	Mrs. Sarah Evans
S1125	The Effects of Multi-Walled Carbon Nanotubes (CNT) on the Viability of <i>Euglena gracilis</i>	

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Honorable Mention

***17 awards for Seminole Region***

## South Florida

### Junior *Biomedical & Health Sciences*

Cecilia T Suarez J0314	George Washington Carver Middle School Honey Bee Good	Mrs. Bertha Vazquez
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Third Place

### Junior *Earth & Environmental Sciences*

Michael N Odzer J0624	Highland Oaks Middle School Abundance and Habitat use of <i>Chelonia mydas</i> using Drone Video Surveillance: Does Distance from Refuge Build on Ideal Free Distribution Theory for Green Sea Turtles?	Mr. Julio Miguez
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Recognition

### Junior *Environmental Engineering*

Jakob L Gundersen J0815	George Washington Carver Middle School A Green Light to Free Power	Mrs. Bertha Vazquez
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Fourth Place

Isabela V Perdomo J0816	Norman S. Edelcup Sunny Isles Beach K-8 Community School Cleaner Bottoms: Part 2 An Environmentally Friendly Method of Reducing Barnacle Growth and Improving the Quality of Our Waterways Using Ultrasonic Waves!	Mr. Daniel Goodfriend
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First Place

Dana Sapir J0817	Aventura City of Excellence School The Solar Secret of Fibonacci's Tree	Ms. Lindsey B. Cohen
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Fourth Place

Jordan M Umlas J0827	Nautilus Middle School The Creation of a novel Carbon Dioxide Scrubber Using Chlorella	Dr. Gwendolyn Foote
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Recognition

### Junior *Mathematics & Computational Sciences*

Alexander S Chinae J1011	George Washington Carver Middle School Math vs Bias	Ms. Mary Martinez
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Second Place

### Junior *Plant Sciences*

Sophia G Carbajal J1315	Winston Park K-8 Center The Effect of Nickel Sulfate on Amount of Magnesium in Plants	Mr. Richard Dominguez
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Fourth Place

Sara I Toledo J1316	Winston Park K-8 Center Does the Nitrogen-Fixing Bacteria (Rhizobium) and Nitrogen Fertilizer Affect the Biomass of the Clover (Trifolium)	Mr. Joseph Callaway
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Recognition

### Senior *Animal Sciences*

Madison Precht	Westminster Christian School	Mrs. Lisa Garrido
S0110	Lethal and Sub-lethal Effects of Sunscreen Compounds on the Threatened Staghorn Coral, <i>Acropora cervicornis</i>	

Third Place

**Senior**      *Biomedical & Health Sciences*

Andy Armand	North Miami Beach Senior High School	Mrs. Vania Boeva
S0312	Studies of the Interactions between Analogues of Heparin Disaccharide and Alzheimer Amyloid $\beta$ (A $\beta$ )	

Fourth Place

Ethan Z Levy	Dr. Michael M. Krop High School	Dr. David Buncher
S0313	A Novel Method for Auto-Suturing in Laparoscopic Robotic Coronary Artery Bypass Graft Anastomosis	

Second Place

Abigail E Raffalski	Westminster Christian School	Mrs. Lisa Garrido
S0315	Cell Cycle Dysregulation in Ovarian Cancer	

Honorable Mention

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Michael Goncalves	TERRA Environmental Research Institute	Mrs. Melissa Fernandez
S0410	The Impact of Arg 33 and Arg 84 on Human Cytoglobin Stability	

Third Place

Amanda R Maytin	Medical Academy for Science and Technology	Mr. Brian Ruhman
S0411	Role of Autophagy on HIV Tat-Induced Intracellular Calcium Release in Murine Astrocytes	

Third Place

**Senior**      *Chemistry*

Sara V Fernandez	Westminster Christian School	Mrs. Lisa Garrido
S0510	The Effect of Increasing the Level of Magnetic Field Applied on the Flow Rate of Simulated Blood	

Third Place

Olivia L Gottlieb	Dr. Michael M. Krop High School	Dr. David Buncher
S0511	Cohesiveness of the Oscillating BZ Reaction	

Third Place

**Senior**      *Earth & Environmental Sciences*

Andres E Leon	Felix Varela Senior High School	Mrs. Teresa Casal
S0629	Tracking Phosphate Inputs as a Result of Saltwater Intrusion in the Florida Everglades Using Benthic Algal Mats	

Recognition

**Senior**      *Environmental Engineering*

Jesus R Capo	Christopher Columbus High School	Ms. Christine Taylor
S0811	RecycloTrash: Barcodes vs CV	

Third Place

David A Perez	Christopher Columbus High School	Ms. Christine Taylor
S0811	RecycloTrash: Barcodes vs CV	

Third Place

**Senior**      *Mathematics & Computational Sciences*

Elizabeth J Stone	Miami Country Day School	Mr. Dan Bronish
S1007	Relative Entropy of Paintings	

Honorable Mention

**Senior**      *Plant Sciences*

Megan M Zou	Ransom Everglades School	Dr. Claudia Ochatt
S1306	Supercharged Plants to Fight Global Warming: Data Mining for Key Genes of Photosynthetic Acclimation to Climate Change	

Fourth Place

*22 awards for South Florida Region*

## St. Johns

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### Junior *Chemistry*

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Natalie A Byron J0511	Alice B. Landrum Middle School Mighty Microgreens: Don't Judge Your Greens By Their Size	Mr. Joseph Anzelmo
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Third Place

### Junior *Engineering*

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Aditya Singh J0715	Valley Ridge Academy Developing Distance Based Edge Detection	Mrs. Kathy Shirley
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Second Place

### Junior *Intelligent Machines, Robotics, & Systems Software*

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Sofia E Klostermeyer J0907	Alice B. Landrum Middle School Creating Cryptographically Secure Passwords Using Hash Functions	Mr. Joseph Anzelmo
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Third Place

### Junior *Physics & Astronomy*

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Zachary M Headings J1218	Fruit Cove Middle School Detecting Sound with Light	Mrs. Jill Kiefer
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Third Place

### Junior *Plant Sciences*

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Johnathan Schoenborn J1341	Fruit Cove Middle School From Rubbish to Radishes: Does Compost Produce Increased Plant Growth Over Manufactured Fertilizer?	Mrs. Jill Kiefer
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Fourth Place

### Senior *Cellular/Molecular Biology & Biochemistry*

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Madison R Barshick S0405	Ponte Vedra High School Cloning of AMP-activated Protein Kinase Gene into a <i>Saccharomyces cerevisiae</i> Specific Plasmid to Induce RNA Interference in <i>Musca domestica</i>	Dr. Kathryn Kehoe
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Fourth Place

**6 awards for St. Johns Region**

## St. Lucie

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### Junior *Behavioral & Social Sciences*

Asha J Budhai	Oak Hammock K-8 School	Ms. Alison Seaton
J0219	Drop the Pressure	

Honorable Mention

### Junior *Earth & Environmental Sciences*

Connor O'Sullivan	Forest Grove Middle School	Mr. Jon Breedlove
J0650	Recharge, Repower, and Restore Energy	

Fourth Place

### Junior *Engineering*

Jack H Krasulak	Saint Andrew's Episcopal Academy	Mr. Zane Barrus
J0743	Mitigating the Effects of IED Explosion through Novel Hull Design	

Division Grand Award Winner And First Place

### Junior *Physics & Astronomy*

Riley N Hamilton	Olivet Private School	Mrs. Deanna Pick
J1245	Testing Fluids for Geothermal Heating and Air Conditioning	

Third Place

### Junior *Plant Sciences*

Mason A Kozac	Lincoln Park Academy	Ms. Sally Vandereedt
J1333	Savanna Mint	

Recognition

### Senior *Cellular/Molecular Biology & Biochemistry*

Catherine Horger	Lincoln Park Academy	Ms. Lisa Hevner
S0430	The Effect of Indole-3-Acetic Acid and Kinetin on the Fresh Weight Accumulations & Morphology of a Tobacco Cell Line	

Second Place

Callie W Zheng	Lincoln Park Academy	Ms. Stephanie Reid
S0431	Can Human Fecal Specific Primers be Used to Detect Fecal Contamination in Sediment and Muck Samples?	

Recognition

### Senior *Earth & Environmental Sciences*

Jillian C Markle	Lincoln Park Academy	Mr. Brady Sullivan
S0637	Ugh! Another Invasive Weevil in Florida	

Recognition

### Senior *Mathematics & Computational Sciences*



Sreya Banik	Lincoln Park Academy	Ms. Lisa Hevner
S1026	Application of Chaos Game Representation of Genes to Measure the Predictability Using Random DNA Sequences to Determine if the Sequence is of Kinase of Phosphatase Protein	

Honorable Mention

**Senior**      *Microbiology*

Shreya K Reddy	Lincoln Park Academy	Ms. Lina Rao
S1128	Improving Health of Beneficial Insects through Ingestion of Nonpathogenic Indovirus	

Third Place

**Senior**      *Physics & Astronomy*

Riley A Hogge	Fort Pierce Westwood High School	Mr. Scott Hurley
S1230	Catching Waves	

Fourth Place

Alexis B Moreira	Fort Pierce Westwood High School	Mr. Scott Hurley
S1230	Catching Waves	

Fourth Place

**Senior**      *Plant Sciences*

Haniya Shareef	Lincoln Park Academy	Ms. Lisa Hevner
S1324	Molecular Characterization and Enhanced Efficacy of a Novel Host-Specific Bioherbicide Candidate for <i>Cyperus rotundus</i>	

Division Grand Award Winner And First Place

**13 awards for St. Lucie Region**

## Suwannee Valley

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### Junior *Behavioral & Social Sciences*

Anelise J Bullard	Fort White High School	Mr. George Karlton
J0213	The Uncanny Valley	

Recognition

### Junior *Earth & Environmental Sciences*

Ciara D Woodall	Lake Butler Middle School	Mr. Casey Wimpey
J0641	Phosphate Mining and How it Affects Water Quality	

Fourth Place

### Junior *Engineering*

Thomas Greene	Lake City Middle School	Mrs. Jennifer Saylor
J0733	One Beat at a Time	

Fourth Place

### Junior *Plant Sciences*

Logan A Mears	Richardson Middle School	Mrs. Elicia Odom
J1325	Rad Radishes	

Honorable Mention

### Senior *Animal Sciences*

Emily A Acevedo	Bradford High School	Ms. Nickie Snyder
S0123	Comparison of ELISA to RIA as Predictors of Parturition in Goats	

Honorable Mention

### Senior *Behavioral & Social Sciences*

Klara L Fletcher	Fletcher Academy	Mrs. Kelly Christie
S0215	Memory Matters: The Effectiveness of Mnemonics vs Video Learning - Year 2	

Fourth Place

### Senior *Biomedical & Health Sciences*

Madelyn Kish	Union County High School	Ms. Renae Allen
S0326	The Effects of Mirror Therapy Accompanied with Music on the Rehabilitation of Stroke Patients	

Fourth Place

### Senior *Chemistry*

Hunter B Richards	Union County High School	Ms. Renae Allen
S0523	Moo... Who?	

Honorable Mention

### Senior *Earth & Environmental Sciences*

Caitlin H Anthony	Bell High School	Mr. Bill Martin
S0625	Can Humate Reduce Nitrogen Leaching in Sandy Soil?	

Fourth Place

Austin K Bagby	Bell High School	Mr. Bill Martin
S0625	Can Humate Reduce Nitrogen Leaching in Sandy Soil?	

Fourth Place

Mariah R Griner	Union County High School	Ms. Renae Allen
S0636	Exploring Denitrification of Stormwater: Testing Three Carbon Substrates for Filtration Efficiency	

Honorable Mention

**Senior**      *Plant Sciences*

Noah R Anuez	Fort White High School	Mr. Wayne Oelfke
S1317	Are there Measureable Differences between GMO and non-GMO Plants?	

Fourth Place

Ryan G Hardin	Union County High School	Ms. Renae Allen
S1318	Association Study for Rootability Traits on Populus Deltoidies	

Third Place

***13 awards for Suwannee Valley Region***

## Thomas Alva Edison

### Junior *Animal Sciences*

Maya S Chandar J0136	Canterbury School The Effect of High Frequency Shortwaves vs Laser Beams on the Metamorphosis of <i>Melitobia digitata</i> (A Novel 2nd Year Study)	Mrs. Cara Summit
First Place		
Kadin P Musco J0137	Varsity Lakes Middle School Moo-nure; The Final Answer	Mr. Michael Stoker
Third Place		

### Junior *Chemistry*

Morgan E Barkhurst J0532	North Fort Myers Academy of the Arts BPA Free? Let's See! The Study of BPA in Plastics Using a UV-Vis Spectrophotometer	Mrs. Tiffini Jamison
First Place		

### Junior *Earth & Environmental Sciences*

Sierra D Edelstein J0655	Gulf Middle School The Pearl of the Ocean: Do Freshwater Releases from Lake Okeechobee Affect the Filtration Rate of Eastern Oysters <i>Crassostrea virginica</i> in Southwest Florida Estuaries?	Ms. Kristy Lavis
Third Place		
Sofia J Herrero J0657	Saint Francis Xavier Catholic School Birds About Town: A Focus on Urban Ecology	Mrs. Christina Stejskal
Honorable Mention		

### Junior *Environmental Engineering*

Heidi E Kinsey J0836	Cypress Lake Middle School A Hairy Solution	Ms. Jill Whitewood
Recognition		

### Junior *Mathematics & Computational Sciences*

Junwei Tan J1019	Gateway Intermediate Charter School Autonomous Search and Rescue	Mrs. Jeannie White
Honorable Mention		

### Junior *Microbiology*

Caspian M Schultz J1118	North Fort Myers Academy of the Arts Strike! Spare Me the Bacteria	Ms. Michele Tasnto
Third Place		

### Junior *Physics & Astronomy*

James D Humpel J1247	Saint Charles Borromeo Catholic School A Blast from the Past	Mr. Chris Mullins
Second Place		

**Junior**      *Plant Sciences*

Jennifer A Jacoby	Gulf Middle School	Ms. Kristy Lavis
J1336	Radiation and Radish Seeds	

Honorable Mention

**Senior**      *Biomedical & Health Sciences*

Myesha A Choudhury	Canterbury School	Mr. Michael Haughey
S0332	How Would the Addition of Fish Oil and Genistein to Bacterial Transformation Protocols Affect the Plasmid Uptake and Antibacterial Resilience of an MM294 <i>E. Coli</i> Culture Substrate?	

Honorable Mention

**Senior**      *Cellular/Molecular Biology & Biochemistry*

Jay S Chandar	Canterbury School	Mr. Michael Haughey
S0432	Moving Towards the Cure: Investigating the Effect of cAMP-Dependent Molecular Mechanisms on the Regulation of MAPT Gene Expression and the Formation of Neurofibrillary Tangles to Identify Drug Targets for Alzheimer's Disease - A Fourth Year Study	

Division Grand Award Winner And First Place

**Senior**      *Chemistry*

Anna M Kucera	Canterbury School	Mr. Michael Haughey
S0532	An Analysis of Bisphenol A, Bisphenol S, and Bisphenol F in BPA-Free versus Ordinary Plastic Containers Using Gas Chromatography Mass Spectrometry	

Fourth Place

**Senior**      *Earth & Environmental Sciences*

Mark Leone	Canterbury School	Mr. Michael Haughey
S0649	A Study of the Effects of Environmental Variables on Phytoplankton Appearances	

Recognition

Melissa Marchese	Canterbury School	Mr. Michael Haughey
S0650	The Effects of Boat Traffic on Water Quality as Measured by Levels of Turbidity, Colored Dissolved Organic Matter, and Chlorophyll $\alpha$	

Fourth Place

**Senior**      *Mathematics & Computational Sciences*

Dahlia L Dry	Fort Myers High School	Ms. Cathy Tucker
S1028	Looking into the Past for Insight on the Future: Predictive Analytics and Data Science for Time Series Data	

Third Place

**Senior**      *Physics & Astronomy*

Shaan Chaudhari	Fort Myers High School	Ms. Cathy Tucker
S1231	Effects of Neodymium Magnetic Fields on Rhizochlonium Algae Growth	

Fourth Place

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Ethan Leung	Fort Myers High School	Ms. Cathy Tucker
S1231	Effects of Neodymium Magnetic Fields on Rhizochlonium Algae Growth	

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Fourth Place

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Jash Patel	Fort Myers High School	Ms. Cathy Tucker
S1231	Effects of Neodymium Magnetic Fields on Rhizochlonium Algae Growth	

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Fourth Place

**Senior**      *Plant Sciences*

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Qiao Jiao	Canterbury School	Mr. Michael Haughey
S1325	The Effect of Acid Precipitation on the Vascular and Endocrine System of Plants	

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Third Place

*20 awards for Thomas Alva Edison Region*

## Three Rivers

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### Junior *Behavioral & Social Sciences*

Logan C Delgado	Bay Haven Charter Academy	Mrs. Amy Canfield
J0203	The Value of Color	

Recognition

### Junior *Biomedical & Health Sciences*

Ashley J Dempster-Wilson	Bay Haven Charter Academy	Mrs. Amy Canfield
J0306	A Sugary Solution	

Fourth Place

### Junior *Cellular/Molecular Biology & Biochemistry*

Emelia J Clark	North Bay Haven Charter Academy	Ms. Nancy Rodgers
J0402	What Material Promotes Oyster Propagation the Best?	

Fourth Place

### Junior *Chemistry*

Madeleine G Wilson	Bay Haven Charter Academy	Mrs. Amy Canfield
J0504	Feel the Burn! Commonly Used Antacid Compounds and Their Neutralizing Capacity	

Third Place

### Junior *Engineering*

Sami Najib	Panama City Advanced School	Dr. Abdulrahman Al-Dubaie
J0702	Analysis and Design of Helicopter Rotor Systems	

Third Place

### Junior *Mathematics & Computational Sciences*

Sarah V Leebrick	Merritt Brown Middle School	Mrs. Wendi Henderson
J1003	Thrown for a Curve	

Third Place

### Junior *Physics & Astronomy*

Jonathan C Walker	Bay Haven Charter Academy	Mrs. Amy Canfield
J1207	How Gravitational Lensing Affects Luminosity	

Honorable Mention

### Junior *Plant Sciences*

Samantha N Kammerer	North Bay Haven Charter Academy	Ms. Nancy Rodgers
J1305	Can Cryogenically Preserving Seeds Save Florida's Citrus from Extinction?	

Third Place

Marla Rinehart	Bay Haven Charter Academy	Ms. Anna McEntire
J1306	Atmospheric Pressure vs. Plant Growth	

Fourth Place

**Senior**      *Physics & Astronomy*

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Elijah Jackson	Bay Area Homeschool	Mrs. Wendi L Jackson
S1203	Drowning in Power	

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Recognition

*10 awards for Three Rivers Region*



## Tomoka

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### Junior *Biomedical & Health Sciences*

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Kasey S Lane J0318	New Smyrna Beach Middle School Which Case Is Safe?	Mrs. Colleen Bender
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Honorable Mention

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Meryl Liu J0319	Creekside Middle School Modeling the Transmission Rate of Travel-related ZIKV in Florida Counties Using Linear Regression Analysis	Mr. Martin Ingoldsby
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Recognition

### Junior *Chemistry*

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Leonard Marinaccio J0516	Ormond Beach Middle School The Heat is on: How Does Temperature Affect the Glow of Luminol?	Mrs. Deborah Linn
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Recognition

### Junior *Earth & Environmental Sciences*

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Ria Gupta J0628	David C. Hinson Middle School Does Land Development Along the Tomoka River Affect Water Quality?	Ms. Nita Manis
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Recognition

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Emma J Schlageter J0629	Creekside Middle School Does the Age of an Aquatic Restoration Site Effect the Biodiversity of the Vegetation at that Location?	Ms. Rachel Bogdanoff
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Honorable Mention

### Junior *Environmental Engineering*

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Yara Nasr J0820	Ormond Beach Middle School Can Car Mounted Wind Turbines Power Moving Electric Vehicles?	Mrs. Deborah Linn
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Honorable Mention

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Scott R Tobin J0821	Creekside Middle School By Using s Solar Powered Tesla Coil, Can Water Be Made Potable through Ozonification?	Mr. Martin Ingoldsby
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First Place

### Senior *Behavioral & Social Sciences*

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Nabiha E Ahmed S0211	Spruce Creek High School How Does the Testimony of Veiled Individuals Affect the Observer's Ability to Judge	Ms. Anne M. Cooney
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Third Place

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Sobia T Khan S0211	Spruce Creek High School How Does the Testimony of Veiled Individuals Affect the Observer's Ability to Judge	Ms. Anne M. Cooney
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Third Place

### Senior *Biomedical & Health Sciences*

Areebah I Ahmed	Spruce Creek High School	Ms. Anne M. Cooney
S0317	The Effect of Fluid Dynamics in Cardiovascular Disease	

Recognition

**Senior**      *Chemistry*

Laura A Babiceanu	Spruce Creek High School	Ms. Anne M. Cooney
S0515	Polystyrene Sulfonation as a Method to Remove Calcium and Magnesium Ions from Water	

Recognition

**Senior**      *Earth & Environmental Sciences*

Sohayla T Eldeeb	Spruce Creek High School	Dr. Nick Stoute
S0618	The Effectiveness of Ferrofluid Nanotechnology on Cleaning up Oil Spills	

Recognition

**Senior**      *Environmental Engineering*

Grace Liu	Spruce Creek High School	Mrs. Linda Kerney
S0813	A Cost Effective Aquatic Robot for Collecting Environmental Data	

Fourth Place

**Senior**      *Intelligent Machines, Robotics, & Systems Software*

Ruohan Wu	Spruce Creek High School	Ms. Anne M. Cooney
S0910	Utilizing Feature Extraction Algorithms and Machine Learning for the Diagnosis of Melanoma Skin Cancer	

Second Place

**Senior**      *Microbiology*

Asraa F Ahmed	Spruce Creek High School	Ms. Anne M. Cooney
S1110	Novel Treatment for Chronic Bacterial Infection: Potential Use of Caffeine in the Multi-compound Inhibition of N-Acylhomoserine Lactone (AHL)-Based Quorum Sensing in Chromobacterium Violaceum CVO26 in Vitro	

Second Place

**Senior**      *Plant Sciences*

Gillian Carter	Spruce Creek High School	Ms. Anne M. Cooney
S1309	The Affect of Cigarette Smoke on Tomato Plants	

Recognition

**16 awards for Tomoka Region**

## West Panhandle

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### Junior *Animal Sciences*

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Dana R Amin	Saint Paul Catholic School	Mrs. Holly Forrester
J0102	Crabtastic Temperatures	

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Recognition

### Junior *Behavioral & Social Sciences*

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Lauren K Bautista	Holley Navarre Middle School	Mrs. Kathryn Clark
J0202	Pricing Trickery: The Placebo Effect and Prices	

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Recognition

### Junior *Cellular/Molecular Biology & Biochemistry*

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Lilah Hodge	Saint Paul Catholic School	Mrs. Holly Forrester
J0421	Pineapple Enzyme vs Jello Smackdown	

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Recognition

### Junior *Microbiology*

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Angelia F Morris	Holley Navarre Middle School	Mrs. Kathryn Clark
J1101	Spice It Up: Testing The Antimicrobial Properties of Herbs and Spices	

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Recognition

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Amy Zhang	Brown-Barge Middle School	Mrs. Susan Hunter
J1102	Light Up Your <i>Euglena</i>	

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Fourth Place

### Junior *Physics & Astronomy*

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Darcy R Sullivan	Saint Paul Catholic School	Mrs. Holly Forrester
J1204	Pitter Patter Here's Some Spatter!	

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Recognition

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Lindsey E Rauscher	Saint Paul Catholic School	Mrs. Holly Forrester
J1250	Liter of Light (Refracted Sunlight vs Light Bulbs)	

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Honorable Mention

### Junior *Plant Sciences*

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Kavay H E Howell	Holley Navarre Middle School	Mrs. Kathryn Clark
J1339	Fix That Nitrogen! Comparing the Effects of Nitrogen-Fixing Bacteria and Nitrogen Fertilizer	

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Fourth Place

### Senior *Behavioral & Social Sciences*

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Lauren Beall	Pensacola High School	Mrs. Cherie Stephens
S0204	The Effect of Work Environment and Stress Level on the Accuracy of Eyewitness Testimony: Year III	

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Recognition

Patricia K McAuley	Pensacola High School	Mrs. Cherie Stephens
S0204	The Effect of Work Environment and Stress Level on the Accuracy of Eyewitness Testimony: Year III	

Recognition

**Senior** *Chemistry*

John D Dixon	Pensacola High School	Mrs. Cherie Stephens
S0504	The Effect of Dissolved Sodium Chloride Ions on the Leidenfrost Point of Water	

Fourth Place

**Senior** *Engineering*

Julianna M Heitman	West Florida High School of Advanced Technology	Mrs. Cathy Organt
S0704	Determination of Airfoil Characteristics for Maximum Lift	

Honorable Mention

**Senior** *Environmental Engineering*

Leo S Forty	Pensacola High School	Mrs. Cherie Stephens
S0805	The Optimal Performance For Residential Wind Turbines with Different Number of Blades	

Fourth Place

Jeffrey A Sutherland	Pensacola High School	Mrs. Cherie Stephens
S0805	The Optimal Performance For Residential Wind Turbines with Different Number of Blades	

Fourth Place

Xuan M Ho	Pensacola High School	Mrs. Cherie Stephens
S0837	Monitoring Nutrient Levels of a Self Sustained Environment with Use of an Arduino	

Honorable Mention

Maya N Humeda	Pensacola High School	Mrs. Cherie Stephens
S0837	Monitoring Nutrient Levels of a Self Sustained Environment with Use of an Arduino	

Honorable Mention

Joseph C McCormack	Pensacola High School	Mrs. Cherie Stephens
S0837	Monitoring Nutrient Levels of a Self Sustained Environment with Use of an Arduino	

Honorable Mention

**Senior** *Intelligent Machines, Robotics, & Systems Software*

Alexander Pope	Pensacola High School	Mrs. Cherie Stephens
S0924	Creating an Optimised Algorithm for EEG Wave Separation and an Accompanying Graphic Interface	

Recognition

**18 awards for West Panhandle Region**