

## Alachua

### Junior *Behavioral & Social Sciences*

Clara Milosevic J0208	Westwood Middle School	Danielle Nelson
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How Does the Bias of the Media Affect Teens' Perspectives of COVID-19?

Fourth Place

### Junior *Biomedical & Health Sciences*

Olivia Prater J0319	Westwood Middle School	Ms. Sara Charbonnet
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How Do Different LED Light Colors Affect the Color Contrast of the Text Color and Background Color of a Book?

Fourth Place

Savita Shah J0320	Westwood Middle School	Mrs. Susan Shrum
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Which Mask Fabric Is Most Protective at Repelling the Coronavirus?

Recognition

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

Ryan Dovell J0407	Westwood Middle School	Ms. Sara Charbonnet
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How Do Different Carbonated Beverages Affect Eggshell

Honorable Mention

### Junior *Chemistry*

Alexander Hsu J0529	Lincoln Middle School	Ms. Rachel Brown
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Minimizing Teeth Stains

Third Place

Gloria Milosevic J0530	Westwood Middle School	Ms. Sara Charbonnet
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How Does the Type of Flour Added into Banana Bread Effect its Bake Time?

Honorable Mention

Thomas Wendling J0531	Westwood Middle School	Ms. Sara Charbonnet
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How Do the Two Metals in a Galvanic Couple, also Known as a Corrosion Couple Affect the Amount of Corrosion that Forms?

Honorable Mention

### Junior *Earth & Environmental Sciences*

Abhith Kasala J0628	Abraham Lincoln Middle School	Mrs. Christine Floyd
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Global Plastic Pollution

Honorable Mention

Flora Jane Freer J0629	Westwood Middle School	Danielle Nelson
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How Does the Streamflow of a River Affect the Number of Microplastics Collected?

Fourth Place

### Junior *Engineering*

Molly V Adams J0725	Westwood Middle School	Ms. Sara Charbonnet
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How Does the Shape of Sediment Affect the Steepness of a Hill?

Fourth Place

### Junior *Environmental Engineering*

Saharsh Pothu J0824	Abraham Lincoln Middle School	Ms. Rachel Brown
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How Well Do Different Materials Purify Water?

Recognition

Elizabeth Nowicki	Oak View Middle School	Barbara Brock
J0825	Oil Spills: Hair Today Gone Tomorrow	

Third Place

**Junior**      *Microbiology*

River Ernest-White	Westwood Middle School	Ms. Sara Charbonnet
J1112	How Does the Temperature Affect the Survival Rate of Tardigrades?	

Recognition

**Junior**      *Physics & Astronomy*

Lina Dos Santos	Westwood Middle School	Mr. Curtis Ericson
J1225	How Does the Type of Material Affect How Much Water it Soaks Up?	

Recognition

Harlow Knowles	Westwood Middle School	Ms. Sara Charbonnet
J1226	How Do Different Aerodynamic Clay Shapes Affect a Smoke Pattern in a Wind Tunnel	

Second Place

**Junior**      *Plant Sciences*

Samuel W Lauerman	Westwood Middle School	Ms. Sara Charbonnet
J1315	How Does the Type of Liquid Given to a Pea Seed Affect its Growth?	

Third Place

**Senior**      *Biomedical & Health Sciences*

Aditi Shukla	Buchholz High School	Mr. Marc Moody
S0328	Precision Targeting and Brain Stimulation for Treating Depression	

Third Place

Akash Verma	Eastside High School	Dr. Adenike Akinyode
S0329	Evaluating the Efficacy of Different Face Masks in Obstructing Respiratory Droplets Innovating a Sensor-based Technology to Maintain Social Distancing	

Honorable Mention

**Senior**      *Chemistry*

Vedant Karalkar	Eastside High School	Dr. Adenike Akinyode
S0518	Fabrication of Naphthalimide Chemosensor Using InkJet Printing on Cellulose Paper for Determination of Uric Acid and Metal in Solution	

Division Grand Award Winner And First Place

**Senior**      *Environmental Engineering*

Angela Gao	F. W. Buchholz High School	Mr. Marc Moody
S0817	Life Cycle Analysis of the Environmental Impact of Disposable Drinking Straws: A National Scale Gabi Application	

Third Place

**Senior**      *Physics & Astronomy*

Anjana Balachandar	Buchholz High School	Mr. Marc Moody
S1218	Pushing the Boundaries of 3D Printing of Soft Matter	

Third Place

**21 awards for Alachua Region**

## Big Springs

### Junior *Animal Sciences*

Lillian M Fontaine J0104	Saint John Lutheran School Mealworm Madness- Which Environmental Conditions Do Mealworms Like Best?	Mrs. Jennifer Fontaine
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Fourth Place

Yazen O Abdul-Jawad J0105	The Cornerstone School What PAR Level Is Best for Corals?	Ms. Sydney Norwood
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Second Place

### Junior *Behavioral & Social Sciences*

Delaney C Peterson J0202	The Cornerstone School Effect of After-School Activities on Middle School Students' Empathy Quotient	Ms. Sydney Norwood
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Second Place

### Junior *Chemistry*

Julia P Temple J0508	Wildwood Middle High School Plastic ... plastic Everywhere!: ... Is Polyethylene Terephthalate or Polyethylene a More Suitable Replacement for Sand Based Cement?	Ms. Emily Keeler
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Third Place

### Junior *Earth & Environmental Sciences*

William T White J0608	Blessed Trinity Catholic School Do UPF Shirts Hold Their Protection?	Mr. William Reed
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Fourth Place

Alynza I McBride J0609	South Sumter Middle School Can Hydrologic Records Be Reconstructed Using Tree Rings from the Upper Withlacoochee River?	Mrs. Shelly Paulinyce
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First Place

### Junior *Engineering*

Shyanne M Durst J0704	Wildwood Middle High School Surface Groundwater Filtration	Ms. Emily Keeler
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Recognition

Michael D Ribay J0705	Howard Middle School The Optimal Arrangement of Solar Cells on a Mendocino Motor	Mr. William Bondank
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Fourth Place

### Junior *Mathematics & Computational Sciences*

Miguel A Secillano J1002	Howard Middle School Throwing Darts to Derive the Value of Pi	Mr. William Bondank
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Fourth Place

### Junior *Microbiology*

Noella R Lipham J1105	Wildwood Middle High School Which Antibiotic Will Be More Efficient When Fighting Against <i>E.coli</i> K-12?	Ms. Emily Keeler
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Fourth Place

### Junior *Physics & Astronomy*

Jose M Carvajal-Beltran J1206	Wildwood Middle High School Let's ENLIGHTen on Night Insects!	Ms. Emily Keeler
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Fourth Place

**Junior**      *Plant Sciences*

Jaycee M Mueller J1303	South Sumter Middle School Can the Tomato Take the Heat?	Mrs. Shelly Paulinyce
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Recognition

**Senior**      *Biomedical & Health Sciences*

Luke D Meiers S0305	West Port High School Face Coverings: Which Are Friends and Which Are Foes?	Mrs. Michelle Miller
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Recognition

Cheyenne R Shirley S0306	South Sumter High School The Effects of Ketone Supplements on Reducing Postprandial Glucose Levels	Mrs. Shelbie Wiley
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Fourth Place

Haylee A Darling S0307	Forest High School Development of an Improved High Intensity Off-Grid Phototherapy System to Provide Treatment In Remote Regions of the World	Mrs. Korie Grimsley
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Fourth Place

**Senior**      *Chemistry*

Andy Shar S0505	Vanguard High School Novel Synthesis and Microstructure Optimization of Facile, Robust, and Transparent Triboelectric Nanogenerators	Mrs. Christina Davis
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Fourth Place

**Senior**      *Earth & Environmental Sciences*

Camille A Duma S0606	Vanguard High School Utilization of <i>Manihot esculenta</i> Peels, Used Coffee Grounds, and Eggshells from <i>Gallus gallus</i> to Create Biodegradable Polymers	Mrs. Christina Davis
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Third Place

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

Gabriel D Ribay S0904	Vanguard High School MENACE, the Mastermind: Comparing the Effects of Positive Versus Negative Reinforcement on Machine Learning Systems	Mrs. Christina Davis
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Recognition

**Senior**      *Physics & Astronomy*

Vivek S Sandrapaty S1205	West Port High School A Novel Computer Simulation of a Deployable Parachute System with Aerial Detachment of the Cabin for Commercial Airplane Crashes (2nd Year Continuation Project)	Ms. Janice David
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Fourth Place

***19 awards for Big Springs Region***

## Brevard: Intracoastal

### Junior *Animal Sciences*

Ryan M Doersam J0103	Herbert H. Hoover Middle School An Ant Aversion Alternative	Mrs. Michelle Zimmerman
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Fourth Place

### Junior *Biomedical & Health Sciences*

Twisha Bhattachryya J0304	Edgewood Jr/Sr High School Pills, Pain Relievers, PH: Effect of GI PH on OTC Pain Medicine Absorption.	Ms. Katie Reninger
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Fourth Place

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

Mavis C Masuecos J0401	Herbert H. Hoover Middle School Comparing the Absorbed Radiation Dosage of <i>Chlorella vulgaris</i> and <i>Aspergillus niger</i> Pigment	Mrs. Michelle Zimmerman
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Fourth Place

### Junior *Chemistry*

Christina L Sun J0506	Herbert H. Hoover Middle School The Antibacterial Effect of a Crystal Violet Gold Nanoparticle Coating	Mrs. Michelle Zimmerman
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Second Place

### Junior *Earth & Environmental Sciences*

Hudson M Krasnick J0606	Herbert H. Hoover Middle School Roofing Materials and Their Effect on Solar Energy Output and Inside Temperature	Mrs. Michelle Zimmerman
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Recognition

### Junior *Engineering*

David K Young J0702	Herbert H. Hoover Middle School Incorporating Mars Simulant into a Thermoplastic Polymer to 3D Print an Insulative and Structurally Sound Mars Habitat	Mrs. Michelle Zimmerman
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Second Place

### Junior *Environmental Engineering*

Sharanya Natarajan J0804	Edgewood Jr/Sr High School Suppress that Algae: Mitigating the Effects of Harmful Algal Blooms through Preemptive Detection and Suppression	Ms. Katie Reninger
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Third Place

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

Keaton D Smith J0903	Herbert H. Hoover Middle School Autonomous Device to Locate and Eradicate Cyanobacteria (Year 2)	Mrs. Michelle Zimmerman
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Third Place

Aneesha Guna J0911	Edgewood Jr/Sr High School Empeers (Empower Peers)	Ms. Katie Reninger
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Recognition

### Junior *Mathematics & Computational Sciences*

Benjamin Leptich J1001	DeLaura Middle School Execution Speed of Interpreted vs Compiled Computer Programs	Ms. Kelly Smith
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Third Place

### Junior *Microbiology*

Tracey Q Chen J1103	Herbert H. Hoover Middle School Seaweed Supplements for Agriculture?	Mrs. Michelle Zimmerman
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Second Place

**Junior**      *Physics & Astronomy*

Enzo B Carter J1204	Herbert H. Hoover Middle School The Effectiveness of BBO Crystals in Quantum Ghost Imaging	Mrs. Michelle Zimmerman
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Division Grand Award Winner And First Place

**Senior**      *Animal Sciences*

Isabel E Sierra S0102	Edgewood Jr/Sr High School "Tri-pawed": Canine Prosthesis	Mr. Ryan Cilsick
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Third Place

**Senior**      *Behavioral & Social Sciences*

Brooke R Cohen-Pinsky S0202	Satellite High School Unmasking Microexpressions	Mrs. Magdalena Molledo
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Second Place

**Senior**      *Biomedical & Health Sciences*

Jeremiah E Feizi S0303	Satellite High School Fucoidan Factories as Additional Combatants to Cancer Development	Mrs. Magdalena Molledo
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Fourth Place

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

Neil Reddy S0402	Satellite High School Targeted Cancer Cell Weapons: Using CRISPR Genetic Engineering and SiRNA to Modify MCF7 Human Breast Cancer Cells as a Treatment Vector Year III	Mrs. Magdalena Molledo
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Third Place

**Senior**      *Earth & Environmental Sciences*

Alexander LaFortune S0604	Satellite High School Predictive Modeling of Tropical Cyclone Rapid Intensification by Analyzing Convective Patterns with Convolutional Neural Networks - Year Four	Mrs. Magdalena Molledo
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Division Grand Award Winner And First Place

**Senior**      *Engineering*

Niamh Trotter S0712	Satellite High School 3D Printed Touch: Year 3	Ms. Maggie Molledo
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Third Place

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

Rylan S Andrews S0911	Satellite High School A Novel Approach to Calculating Orbital Mechanics with Machine Learning	Mrs. Magdalena Molledo
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Fourth Place

**Senior**      *Mathematics & Computational Sciences*

Evan L Karcher S1002	Satellite High School A Spatial Analysis of Photovoltaic Conversions to Obtain Carbon Neutrality	Mrs. Magdalena Molledo
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Recognition

**Senior**      *Microbiology*

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Rowan B Klukosky	Satellite High School	Mrs. Magdalena Molledo
S1101	Gene Expression and Cancer Progression	

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Recognition

**Senior**      *Physics & Astronomy*

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Gustavo A Toledo	Edgewood Jr/Sr High School	Mr. Ryan Cilsick
S1203	Underwater Golf: An Evaluation of the Effects of Organized Surface Irregularities on the Hydrodynamic Efficiency of Underwater Projectiles	

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Third Place

**Senior**      *Plant Sciences*

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Erin K Gaydar	Edgewood Jr/Sr High School	Mr. Ryan Cilsick
S1302	Phosphate Binders are the Solution for Elimination of Chlorophytes in the Indian River Lagoon through Chemical Absorption (Year II)	

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Second Place

*23 awards for Brevard: Intracoastal Region*

## Brevard: Mainland

### Junior *Biomedical & Health Sciences*

Anik Naik	Holy Trinity Episcopal Academy	Mrs. Terrie Segal
J0314	Could <i>Porphyra umbilicalis</i> be a Better Alternative than Chemical Sunscreen for Protection Against Ultraviolet Rays and the Safety of Marine Life?	

Third Place

### Junior *Chemistry*

Alexander L Ferland	Andrew Jackson Middle School	Mrs. Alexandria Wicker
J0518	Environmental Conditions Affecting Corrosion of Launch Structures in a Real Launch Environment	

First Place

### Junior *Environmental Engineering*

Gabriella Weiner	Saint Mary Catholic School	Mrs. Dianne Alexis
J0814	Removing Microplastics from The Ocean	

Fourth Place

### Junior *Plant Sciences*

Alina Zaidi	Holy Trinity Episcopal Academy	Mrs. Terrie Segal
J1309	How do Iron Levels Affect the Bacterial and Physical Growth of Spinach?	

First Place

### Senior *Earth & Environmental Sciences*

Esther R Francom	Viera High School	Ms. Elizabeth Youngs
S0621	Bamboozling Microplastic Runoff into the Indian Rive Lagoon - Year 3	

Second Place

### Senior *Engineering*

Isabella Weiner	Holy Trinity Episcopal Academy	Mrs. Terrie Segal
S0711	In Situ Resource Utilization of Martian Regolith for Construction - Year 4	

Third Place

### Senior *Environmental Engineering*

Sophia M Weiner	Holy Trinity Episcopal Academy	Mrs. Terrie Segal
S0811	Construction Utilization of Indian River Muck - Year 3	

Recognition

Lavanya S Natarajan	Viera High School	Ms. Elizabeth Youngs
S0812	Landfill SCADA System: A Nex Gen IoT Solution Engineered to Mitigate Fugitive Methane Emissions in Landfills via a Remote Supervisory Control and Sata Acquisition System	

First Place

### Senior *Microbiology*

Om D Patel	Eau Gallie High School	Ms. Chelsea George
S1107	A Multi-Factor Study Deriving a Comprehensive Evaluation of Natural Antibiotic Hybrids Bound to Novel Nanoreactors in an Inorganic Model of an <i>Enterococcus faecalis</i> Infected Jejunum Cross-Analyzed through Static Biofilm Production and Quorum Sensing (Year 5)	

Second Place

### Senior *Physics & Astronomy*



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James W Egdorf	Viera High School	Ms. Elizabeth Youngs
S1210	Newfound Electricity Source: The Epic of the Triboelectric Nanogenerators (Year 2)	

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Fourth Place

**Senior**      *Plant Sciences*

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Faizan Zaidi	Holy Trinity Episcopal Academy	Mrs. Terrie Segal
S1314	Quorum Sensing and Biofuel Production: A Solution to Clean Energy?	

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Third Place

***11 awards for Brevard: Mainland Region***

## Brevard: South

### Junior *Animal Sciences*

Corgan Donald J0117	Stone Magnet Middle School The Effects of Artificial Sweeteners on the Speed of Memory in Peppermint Shrimp, <i>Lysemata wurdemanni</i>	Mrs. Julie Schmidt
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Third Place

### Junior *Chemistry*

Stephen Nicolas J0532	Stone Magnet Middle School The Effects of Trisodium Phosphate on Bone Density	Mrs. Julie Schmidt
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Fourth Place

### Junior *Engineering*

Shuhuai Xu J0727	West Shore Junior/Senior High School The Effect of Ram on the Number of Tabs You Are Able to Open	Mr. Robert Klaasen
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Honorable Mention

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

Lucas Sarabjit J0918	Stone Magnet Middle School Designing, Building, and Coding a Human Recognition Robot for Area Management	Mrs. Julie Schmidt
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Second Place

### Junior *Mathematics & Computational Sciences*

Teymur Abdulla J1011	West Shore Junior/Senior High School Utilizing Eulerian Path for DNA Sequencing: Year 2	Ms. Paula Ladd
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Recognition

### Senior *Animal Sciences*

Alex J Warren S0112	Melbourne High School Global Warming's Effect on Soft Coral, <i>Xenia elongata</i>	Mr. Greg Stauffer
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Recognition

Nathan J Foo S0113	West Shore Junior/Senior High School Utilization of Mechanically Simulated Kangaroo Care as a Novel Homeostatic Method to Treat Mice Carrying a Remutation of the Ppp1r13l Gene as a Model for Humans with Cardiomyopathy (Year 2)	Mrs. Mary Schropp
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Third Place

### Senior *Behavioral & Social Sciences*

Justin V Foster S0213	West Shore Junior/Senior High School Effectiveness and Longevity of Messaging Strategies at Shifting Attitudes Towards Climate Science and Climate Policy.	Mrs. Mary Schropp
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Second Place

### Senior *Biomedical & Health Sciences*

Madeline E Huberman S0330	West Shore Junior/Senior High School Differential Expressions of WNT Pathway Proteins in Colorectal Carcinoma Metastasis to Liver Versus Lung	Ms. Paula Ladd
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Division Grand Award Winner And First Place

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

Julien J Wakim	West Shore Junior/Senior High School	Mrs. Mary Schropp
S0418	An In Silico Study on the Effects of DNA Replication Inhibitors on the Apoptosis of Multinucleated Giant Cancer Cells	

Second Place

**Senior**      *Chemistry*

Layla G Auter	West Shore Junior/Senior High School	Mrs. Mary Schropp
S0519	Mitigating Harmful Algal Bloom Contributing Nutrients: Year Two Comparing the Effectiveness of the Amino Acid Derivative Cysteine Methyl-Ester Alongside Aluminum Sulfate to Reduce Aluminum and Soluble Reactive Phosphorus in Water Treatment in Anoxic and Oxidic Conditions	

Fourth Place

**Senior**      *Earth & Environmental Sciences*

Sami M Ramadan	West Shore Junior/Senior High School	Mrs. Mary Schropp
S0631	The Effects of Heavy Metals on Aquatic Organisms	

Recognition

**Senior**      *Engineering*

Matthew H Kish	West Shore Junior/Senior High School	Ms. Paula Ladd
S0718	Comparing Reinforced Polymers to Traditional Steel for Bridge Construction	

Honorable Mention

**Senior**      *Environmental Engineering*

Sammy M Habboub	Melbourne High School	Mr. Greg Stauffer
S0818	Harvesting Piezoelectric Energy Using Grown Zinc Oxide Nanowires Upon A Nanoporous Polycarbonate Template	

Honorable Mention

**14 awards for Brevard: South Region**

## Broward

### Junior *Biomedical & Health Sciences*

Armaan J Fatteh-Patil J0316	American Heritage School The Effect of Mask Fabric on the Transmission of Glo Germ through the Mask.	Mrs. Leya Mathew Joykuttu
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Fourth Place

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

Yusuf Dirdis J0405	Alazhar School The Effect of Vitamin Antioxidants on Daphnia Exposed to Silver Nanoparticles	Mrs. Mrs. Hamad
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First Place

Abdallah Sakallah J0405	Alazhar School The Effect of Vitamin Antioxidants on Daphnia Exposed to Silver Nanoparticles	Mrs. Mrs. Hamad
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First Place

### Junior *Chemistry*

Anneliese C Hsiao J0524	American Heritage School The Effect of a Hot Car Interior on Hand Sanitizer Alcohol Content	Mrs. Jennifer Page
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First Place

### Junior *Earth & Environmental Sciences*

Laila R. Rozenberg J0624	American Heritage School The Effects of PCB's and PFA's on the Neurological Development of Zebrafish Embryos	Mrs. Leya Mathew Joykuttu
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Second Place

Keira G Fahy J0625	New River Middle School Microplastics In Our Sand	Mrs. Ashley Trimble
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Third Place

### Junior *Engineering*

Elie Ciril, Jr. J0718	American Heritage School Energy Storage Levels of Different Types of Supercapacitors	Mrs. Jennifer Page
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Recognition

Alexa G Shamus J0719	Pembroke Pines Charter Middle School Understanding Dog Body Language	Mr. Fermin Vasquez
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Recognition

### Junior *Environmental Engineering*

Justin P Mills J0816	Westpine Middle School Anaerobic Biogas Production	Mr. Jeffrey Wandel
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Honorable Mention

### Junior *Physics & Astronomy*

Zachary R Samuels J1222	Pembroke Pines Charter Middle School Electromagnetic Radiation and Smartphones	Mr. Fermin Vasquez
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Fourth Place

Sofia E Teifeld J1223	Nova Southern University School I Guess That's Why They Call it the Blues	Mrs. Jessica Lanzetta
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Second Place

### Junior *Plant Sciences*

Mei Ling Q. Jaeger J1312	Parkway Middle School Does Carbon Monoxide Affect Plant Health	Ms. Jessica Villanueva
Fourth Place		
<b>Senior</b> <i>Animal Sciences</i>		
Sharon A. Fernandez S0110	American Heritage School The Effects of the Modulation by Melatonin on the Pathogenesis of Systemic Lupus Erythematosus on <i>Drosophila melanogaster</i>	Mrs. Leya Mathew Joykutty
Third Place		
<b>Senior</b> <i>Behavioral &amp; Social Sciences</i>		
Emilin M Mathew S0210	American Heritage School Digital Phenotyping Autism: Investigating Objective Vocal and Movement Quantification for Characterizing Autism Severity	Mrs. Leya Mathew Joykutty
Division Grand Award Winner And First Place		
<b>Senior</b> <i>Biomedical &amp; Health Sciences</i>		
Prateek Gupta S0324	American Heritage School Identification and Analysis of Key Candidate Genes and Pathways in Lung Adenocarcinoma by Integrated Pathways in Lung Adenocarcinoma by Integrated Bioinformatics	Mrs. Leya Mathew Joykutty
Third Place		
Mahdere M. Yared S0325	Pine Crest School Investigating Differences in DRD4 Expression in a Comparison Analysis Between Young, Old, and Alzheimer's Frontal Cortex Brain Tissues	Ms. Jennifer Gordinier
Third Place		
<b>Senior</b> <i>Chemistry</i>		
Sanjana Bhatt S0516	Cypress Bay High School Ocean's Declining pH: The Effects of Surface Agitation Aeration on Calcium Carbonate Dissolution Levels in Acidified Seawater	Mr. Jay Rosenberg
Honorable Mention		
Sahana Thayagabalu S0516	Cypress Bay High School Ocean's Declining pH: The Effects of Surface Agitation Aeration on Calcium Carbonate Dissolution Levels in Acidified Seawater	Mr. Jay Rosenberg
Honorable Mention		
<b>Senior</b> <i>Earth &amp; Environmental Sciences</i>		
Khushi Desai S0627	Deerfield Beach High school Evaluation of the Impact of Filter Media Effective Size on Removal Efficiency of Coagulated Colloidal Particles from Surface Water	Mr. Joshua Smith
Third Place		
Abdul-Jalil D Dania S0628	American Heritage School Evaluating the Economic and Social Ramifications from Sea Level Rise in the Florida Coastal Region in 2050 and Solutions to Alleviate Potential Damages	Mrs. Leya Mathew Joykutty
Fourth Place		
<b>Senior</b> <i>Engineering</i>		
Sierra Stocker S0714	Pine Crest School Using Electrical Stimulation to Provide Reliable Haptic Feedback in Virtual Object Classification Tasks	Ms. Jennifer Gordinier
Second Place		
<b>Senior</b> <i>Intelligent Machines, Robotics, &amp; Systems Software</i>		

Maya Neeranjan S0914	American Heritage School The Effectiveness of Deep Learning Models on the Detection of Pneumonia	Mrs. Leya Mathew Joykutty
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Honorable Mention

Megan D. Yang S0915	American Heritage School Utilizing Reinforcement Learning and Deep Neural Networks to Optimize Non-pharmaceutical COVID-19 Interventions in Florida	Mrs. Leya Mathew Joykutty
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Recognition

**Senior**      *Mathematics & Computational Sciences*

Shaurnav Ghosh S1007	Pine Crest School Determining the Optimal MRI Sequence for the Automatic Segmentation of Multiple Sclerosis Using Convolutional Encoder Networks	Mrs. Katherine Gaden
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Third Place

**Senior**      *Microbiology*

Olivia R Kessler S1110	Nova Southern University School Addressing the Worldwide Threat of Diminishing Antibiotics through Discovery of Antibiotic Producing Bacteria from the Soil	Mr. Wilford Miranda
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Recognition

Dhruv R Krishna S1110	Nova Southern University School Addressing the Worldwide Threat of Diminishing Antibiotics through Discovery of Antibiotic Producing Bacteria from the Soil	Mr. Wilford Miranda
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Recognition

***26 awards for Broward Region***

## Capital

### Junior *Behavioral & Social Sciences*

Nishi V Bhanderi	Maclay School	Mrs. Rachel Paul
J0205	Does Having a Purpose Affect the Time of a Person Racing 1600 Meters?	

Fourth Place

### Junior *Chemistry*

William C Prendeville	Trinity Catholic School	Mr. Mark Adamson
J0520	C8H18 vs H2O	

Recognition

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

Surabhi Kumar	Lawton Chiles High School	Mrs. Angela Breza-Pierce
S0412	Extrathymic T-Cell Development in the Mesenteric Lymph Nodes of Mice	

Third Place

Sandhya Kumar	Lawton Chiles High School	Mrs. Angela Breza-Pierce
S0412	Extrathymic T-Cell Development in the Mesenteric Lymph Nodes of Mice	

Third Place

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

Sruthi Sentil	James S. Rickards High School	Dr. Paula Hall
S0912	A Machine Learning Tool for the Smartphone Based Rapid Detection of <i>Salanum lycopersium</i> (Tomato) Diseases Caused by Destructive Pathogenic Bacteria, Fungi, and Viruses	

Third Place

### Senior *Microbiology*

Adi J Chauhan	James S. Rickards High School	Dr. Paula Hall
S1108	A Ticking Time Bomb: Bioinformatics Analysis on Environmental Serratia Species to Assess the Emergence of Antibiotic and Virulence Traits	

Fourth Place

Aryan S Taywade	James S. Rickards High School	Dr. Paula Hall
S1108	A Ticking Time Bomb: Bioinformatics Analysis on Environmental Serratia Species to Assess the Emergence of Antibiotic and Virulence Traits	

Fourth Place

### Senior *Plant Sciences*

Nitishsai R Nandineni	James S. Rickards High School	Dr. Paula Hall
S1315	The Effects of a Loam-Vermiculite Soil Compound with Different Nitrogen Concentrations on the Dry Mass and Height of <i>Raphanus sativus</i>	

Recognition

**8 awards for Capital Region**

## Citrus

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### Junior *Physics & Astronomy*

Caiden R Chouinard J1212	Citrus Springs Middle School To Stretch or Not to Stretch?	Mrs. Deanna Hadley
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Honorable Mention

### Senior *Earth & Environmental Sciences*

Lorelei G Mohammbhoy S0611	Lecanto High School Microplastics Still Do Not Promote Gender Equality	Mr. Ryan Campbell
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Honorable Mention

Paige N Woodhouse S0613	Academy of Environmental Science The Effects of Sunscreen Compounds on Our Native Eelgrass ( <i>Vallisneria americana</i> )	Mr. Jacob Shidner
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Fourth Place

### Senior *Plant Sciences*

Amberly E Grace S1305	Lecanto High School Ready or Not, It's Going to Get Hot!	Mr. Ryan Campbell
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Recognition

***4 awards for Citrus Region***



## Clay Rotary

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### Junior *Engineering*

Samuel S Nye J0721	Green Cove Springs Junior High School Breaking Point	Mr. Christopher Nooney
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Fourth Place

### Junior *Environmental Engineering*

Kathryn A McNeill J0822	Green Cove Springs Junior High School How Temperature Affects Solar Cells	Mr. Christopher Nooney
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Fourth Place

### Senior *Engineering*

Sebastian D Kouchakjy S0716	Orange Park High School Muscle Controlled Exoskeleton	Ms. Amanda George
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Second Place

***3 awards for Clay Rotary Region***

## Collier

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### Junior *Biomedical & Health Sciences*

Helena A Brewer J0301	Oakridge Middle School 20-20-20 in 2020 for 20//20	Mrs. Amy Diemert
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Fourth Place

### Junior *Chemistry*

Bailey G Mathews J0502	Cypress Palm Middle School What Is the Minimum Amount of Flame Retardant Needed to Still Be Effective While Minimizing Health Risks?	Ms. Regina Bale
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Third Place

Keerthi A Chandran J0503	North Naples Middle School Are Sugar Substitutes a Stretch?	Mrs. Casey Mathis
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Second Place

### Junior *Earth & Environmental Sciences*

Gianna C Frino J0602	Pine Ridge Middle School The Inhibitory Effects of Environmentally Safe Essential Oil Compounds on the Proliferation of <i>Cyanobacteria</i> (Blue-Green Algae)	Mr. Greg Anthony
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Second Place

Paige Knoth J0603	Pine Ridge Middle School Iron vs Algae Density	Mr. Greg Anthony
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Recognition

### Junior *Engineering*

Braden M Miller J0701	Pine Ridge Middle School Wing Airfoil Designs vs Climb, Stall and Recovery Characteristics	Mr. Greg Anthony
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Third Place

### Junior *Physics & Astronomy*

Kush Gulati J1202	North Naples Middle School Astrophotography : How Air Quality Affects Detail in Telescopic Images of Space Objects	Mrs. Casey Mathis
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Third Place

### Senior *Chemistry*

Cayley McCloskey S0501	Lely High School How Does the Starting Temperature Affect the Time of Crystal Growth in a Reusable Hand Warmer? ( Sodium Acetate Trihydrate Solution)	Ms. Carmeline Williams
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Fourth Place

### Senior *Physics & Astronomy*

Karl Reiter S1202	Gulf Coast High School Determining The Mitigative Effect Of Indium Tin Oxide (In2O3:SnO2) Raw Nanopowder on Mars Regolith Dust Electrostatic Charge, Year Two	Mrs. Elizabeth Mongiello
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Honorable Mention

**9 awards for Collier Region**

## Dr. Nelson Ying Expo - Orange

### Junior *Animal Sciences*

Atreya Manaswi	Orlando Science Middle School	Mrs. Emine Demir
J0116	Finding the Best Novel Compound to Attract Small Hive Beetles and Improve Honey Bee Strength	

Division Grand Award Winner And First Place

### Junior *Biomedical & Health Sciences*

Aanvi Mathur	Orlando Science School	Ms. Brianna Hooker
J0317	Which Form of Calcium Supplementation Is Most Effective for Osteoporosis?	

Third Place

Ananya Purimetla	Orlando Science Middle/ High Charter School	Mr. Mathew Swatzell
J0327	How Do the Devices We Use Daily Affect our Health?	

Honorable Mention

### Junior *Chemistry*

Taufeeq Chowdhury	Leaders Preparatory School	Mrs. Aeysha Mirza
J0526	From Dull to Dazzling	

Third Place

### Junior *Earth & Environmental Sciences*

Monish Saravana Kumar Divya Sundari	Orlando Science Middle School	Mr. Mathew Swatzell
J0626	Ocean Acidification: Could Nanotechnology Cause Macro Problems	

Second Place

### Junior *Engineering*

Tiffani R Gay	Orlando Science Middle School	Mrs. Emine Demir
J0720	Which Method of Biomedical Waste Disposal Is Most Efficient in Protecting Frontline Workers from Needle Injuries?	

Fourth Place

### Junior *Environmental Engineering*

Aditi Swain	Orlando Science Middle School	Ms. Kelsey Beeghly
J0820	Eco-friendly Water Purifier	

Fourth Place

Mehak Singh	Orlando Science Middle School	Mr. Mathew Swatzell
J0821	What Makes a Stronger and Flexible Bioplastic?	

Second Place

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

Zara I Serrano-Diaz	Orlando Science Middle School	Mr. Mathew Swatzell
J0915	Which Brand of Battery Makes the Robot Last Longer?	

Honorable Mention

### Junior *Microbiology*

Carter B Deloach	International Community School	Mrs. Terry Davis
J1110	Can an Isolated T4 Living Bacteriophage Successfully Kill a Colony of K12 <i>E.coli</i> more Effectively than Common Antibiotics?	

Recognition

### Junior *Physics & Astronomy*

Cara Mortimer	Trinity Preparatory School	Dr. Elmarie Mortimer
J1224	Investigating Fluid Dynamics: The Mystery of a Ball in Water	
Second Place		
<b>Junior</b> <i>Plant Sciences</i>		
Elliet McDermed	Trinity Preparatory School	Dr. Elmarie Mortimer
J1313	How Florida Residents Can Help Solve the Algae Bloom Crisis	
Recognition		
<b>Senior</b> <i>Animal Sciences</i>		
Varun R Madan	Lake Highland Preparatory School	Dr. Darin Hughes
S0111	Year 4: Developing a Multiple Linear Regression Model to Predict the Specific Effects of Various Lactic Acid Bacteria Dosages on the Overall Honey Bee Gut Microbiota and <i>Nosema caranae</i> Reduction	
Second Place		
<b>Senior</b> <i>Cellular/Molecular Biology &amp; Biochemistry</i>		
Anne Fang	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S0414	Developing a Molecular Scale DNA Nanochip for Educational Purposes, Phase II	
Honorable Mention		
<b>Senior</b> <i>Chemistry</i>		
Aaron G Rubinow	Trinity Preparatory School	Dr. Elmarie Mortimer
S0517	Plant-based Bio-Plastics from Low-cost Materials	
Second Place		
<b>Senior</b> <i>Intelligent Machines, Robotics, &amp; Systems Software</i>		
Alexander Wang	Trinity Preparatory School	Dr. Elmarie Mortimer
S0917	Using a Novel Semi-supervised Machine Learning Method to Improve Image Based Lung Cancer Diagnostic Algorithms	
Fourth Place		
<b>Senior</b> <i>Mathematics &amp; Computational Sciences</i>		
Asha M Reddy	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S1008	Implementation of Time Frequency Analysis for Seizure Localization: Phase II	
First Place		
<b>Senior</b> <i>Physics &amp; Astronomy</i>		
Aliza Hasan	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S1216	The Impact of Basaltic and Pyroclastic Lunar Volcano Flows	
Recognition		
<b>Senior</b> <i>Plant Sciences</i>		
Anay Shah	Lake Highland Preparatory School	Mrs. Zasha A. Mickey
S1317	Air Pollution and Bryophyte Diversity	
Fourth Place		

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

## East Panhandle

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### Junior *Environmental Engineering*

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Colt Stevens	Rocky Bayou Christian School	Mr. Brian Alldredge
J0808	Building the Most Effective Sea Wall for Mitigating Tsunami Damage	

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Third Place

### Senior *Earth & Environmental Sciences*

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Marisol R Enguidanos	Niceville High School	Ms. Gina Emergy
S0608	Is It Possible to Create a Self-sufficient Solar Powered Filtration System to Reduce Coral Bleaching Using Natural Resources (Year 3)?	

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Honorable Mention

### Senior *Environmental Engineering*

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Jonathan C Walker	Rutherford High School	Dr. Steven Neely
S0806	Development and Implementation of a Bio-based Filter to Mitigate the Effusion of Harmful Pollutants from Internal Combustion Engines and Combustion Processes	

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Third Place

***3 awards for East Panhandle Region***

## Heartland

### Junior *Behavioral & Social Sciences*

Elisa N Virkler J0210	Hill-Gustat Middle School Pitch Perfect	Mrs. Penny Piccione
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Honorable Mention

### Junior *Chemistry*

Will W Cornell J0534	Hardee Junior High School Does the Type of Nitrogen Applied Foliarly to Bell Peppers ( <i>Capsicum annum</i> group) Affect the Uptake of Nitrogen?	Mrs. Kim R McGuckin
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Second Place

Gracie Kate Spencer J0535	Hardee Junior High School What Brand of Sunscreen With the Same SPF Is Most Effective?	Mrs. Micaela Ford
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Fourth Place

### Junior *Engineering*

Meredith A Reser J0728	Hill-Gustat Middle School The Effects of Temperature on the Strength of Polylactic Acid Filament	Mrs. Penny Piccione
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Third Place

### Junior *Physics & Astronomy*

Austin R Walker J1230	Hardee Junior High School Does the Flowrate of Stargon Affect the Quality of a MIG Weld?	Mrs. Kim R McGuckin
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Fourth Place

### Junior *Plant Sciences*

Emma J Johnson J1320	Hardee Junior High School Does Molasses Affect the Growth of a Watermelon ( <i>Citrullus lanatus</i> ) Plant ?	Mrs. Kristie Benton
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Second Place

Trenton S Keller J1321	Hardee Junior High School Does the Time After Harvesting Affect the Amount of Ascorbic Acid (Vitamin C) in <i>Citrus sinensis</i> ?	Mrs. Kim R McGuckin
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Second Place

### Senior *Animal Sciences*

Jenna F Larson S0115	Okeechobee High School Thermoregulation in Dairy Youngstock: Evaluating the Effectiveness of the Slick-Haired Gene on Heat Abatement in Commercial Holstein Calves	Mrs. Wendy Reister
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Honorable Mention

### Senior *Biomedical & Health Sciences*

Bailey A Tinsley S0332	Hardee Senior High School The Tempers of Water	Mrs. Daphne Hays
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Honorable Mention

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

Camila Rimoldi Ibanez S0420	Sebring High School Ultrasonic Planimals! Identifying Genes Associated with Coral Bioacoustics	Dr. James Hawker
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Third Place

### Senior *Chemistry*

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Anna R Velten	Okeechobee High School	Mrs. Wendy Reister
S0520	The Effects of Dissolving Polystyrene with D-Limonene on the Germination of Plants : A Fourth Year Study	

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Third Place

**Senior**      *Physics & Astronomy*

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Drew E Beattie	Hardee Senior High School	Mr. Robert Beatty
S1220	Does the Angle of Incidence of Sunlight throughout the Day Affect the Efficiency of Solar Cells?	

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Recognition

*12 awards for Heartland Region*

## Hernando

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### Junior *Engineering*

Kaylee Smith	Challenger K8 School of Science and Mathematics	Mrs. Colleen Douk
J0710	Can We TRUSS It?	

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Third Place

### Senior *Biomedical & Health Sciences*

Harsh Mehta	F. W. Springstead High School	Mr. Chris Auricchio
S0311	Natural Antioxidants: A Possibility to Decrease Cancer, Cardiovascular and Neurodegenerative Diseases	

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Honorable Mention

*2 awards for Hernando Region*



## Hillsborough

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### Junior *Behavioral & Social Sciences*

Madison Y Fang	Liberty Middle School	Ms. Linda Kniskern
J0213	U Drive. U Text. U Pay.	

First Place

### Junior *Biomedical & Health Sciences*

Lisa M Maeda	Benito Middle School	Mr. David Faysash
J0326	Are You Safe Behind Your Mask? Reduction of Airborne Transmission Through Air Flow By Various Mask Materials	

Third Place

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

Tanishka B Aglave	Williams Middle Magnet School	Dr. Laura Staden
J0409	Screening of alternative hosts of Pestalotiopsis disease in strawberry and its validation through PCR	

Second Place

### Junior *Chemistry*

Rudra A Patel	Liberty Middle School	Ms. Linda Kniskern
J0542	65mg FeSO4 or is it?	

Second Place

### Junior *Earth & Environmental Sciences*

Cameron Brown	Rampello Downtown Partnership K-8	Ms. Rachel Miller
J0637	Determining the Sources of Excess Phosphate and Nitrate Concentrations in the Upper Hillsborough River	

Honorable Mention

### Junior *Environmental Engineering*

Makana O Salim-Uesi	Turner/ Bartels K-8 School	Dalton Holcomb
J0829	Designing a Sustainable Water Collection and Filtration System for Water-Stressed Communities	

Second Place

### Junior *Microbiology*

Swara Patel	Carrollwood Day School	Mrs. Carrie Prieto
J1115	Innovative Approach to Terraforming Mars using Cyanobacteria	

Third Place

### Senior *Biomedical & Health Sciences*

Shriya R Buragadda	George S. Middleton High School	Mrs. Bhagyashree Kulkarni
S0341	Identifying Blood-Based Biomarkers for Systemic Lupus Erythematosus (SLE)	

Second Place

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

Joshua Selvan	Hillsborough High School	Mrs. Mishell Thomas-King
S0425	Role of Mismatch Repair Gene hMSH2 in Malignant Glioma	

Honorable Mention

### Senior *Chemistry*

Anya K Patidar	C. Leon King High School	Mr. Daniel McFarland
S0524	Silica-Supported Perovskite Oxides for Low Temperature Carbon Dioxide Conversion	

Recognition

**Senior** *Earth & Environmental Sciences*

Hannah G Burbidge	Durant High School	Mr. Ken Wood
S0639	Anthropogenic Effects on Aquatic Life	

Honorable Mention

Savannah S Still	Durant High School	Mr. Ken Wood
S0639	Anthropogenic Effects on Aquatic Life	

Honorable Mention

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

Arko Ghosh	C. Leon King High School	Mr. Daniel McFarland
S0921	A Novel Approach to Citrus Disease Management: Leveraging Computer Vision, Machine Learning and Convolutional Neural Networks	

Division Grand Award Winner And First Place

**Senior** *Mathematics & Computational Sciences*

Tushar S Gona	C. Leon King High School	Mr. Daniel McFarland
S1014	Determining the Stick Index of Unexplored Families of (p, q) Torus Knots in the Cubic Lattice	

Second Place

**Senior** *Microbiology*

Shloke Patel	Hillsborough High School	Mrs. Mishell Thomas-King
S1119	In-vitro Evaluation of Herbal Bionematicide and its Effect on Management of Nematodes in <i>Solanum lycopersicum</i>	

Second Place

**15 awards for Hillsborough Region**

## Indian River

### Junior *Biomedical & Health Sciences*

Sawyer R Paschall J0307	Sebastian Charter Junior High School Mask Mashup	Mrs. Christina Brako
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Recognition

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

Kailee A Webster J0402	Storm Grove Middle School Beware of the Bezoar	Mrs. Joan Martinelli
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Third Place

### Junior *Chemistry*

Adriana R Massaroni Santella J0511	Sebastian Charter Junior High School Dissolving Design	Mrs. Christina Brako
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Recognition

### Junior *Mathematics & Computational Sciences*

Hunter G Cook J1003	Sebastian Charter Junior High School Masks, Masks, and More Masks	Ms. Jennifer Serino
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First Place

Louis B St. Petery, IV J1004	Sebastian River Middle School The Speedy Solution	Mrs. Tricia Perakes
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Honorable Mention

### Junior *Physics & Astronomy*

Skye A Clayton J1208	Sebastian River Middle School How Does the Temperature of a Magnet Affect Its Strength?	Mr. Roberto Crespo
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Fourth Place

Noah F Hernandez J1209	Saint Edwards School The Effect of Current and Voltage on the Strength of an Electromagnet	Mr. Les Rogers
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Honorable Mention

Sienna L Mallon J1210	Saint Edwards School How Voltage of Battery Affects Heat Energy Absorbed	Mr. Les Rogers
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Fourth Place

Conor S Powell J1211	Saint Edwards School Stop. Drop. Rebound. A Study Into the Relationship Between the Drop and Rebound Height of a Ball.	Mr. Les Rogers
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Honorable Mention

### Senior *Chemistry*

Mei Bao-He S0507	Saint Edwards School Measuring the Effect of Titanium (IV) Oxide Surface Modification on Hydrogen Production in a 5% Citric Acid-Water Aqueous Solution Reacting with Magnesium	Dr. Laximikant Pathade
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Honorable Mention

Ivy Yang S0507	Saint Edwards School Measuring the Effect of Titanium (IV) Oxide Surface Modification on Hydrogen Production in a 5% Citric Acid-Water Aqueous Solution Reacting with Magnesium	Dr. Laximikant Pathade
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Honorable Mention

### Senior *Earth & Environmental Sciences*

Fourth Place

***12 awards for Indian River Region***

## Lake

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### Junior *Engineering*

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Landon Dodd	Windy Hill Middle School	Ms. Sharon Kunsman
J0715	Toilet Trouble	

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#### Second Place

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Jainish H Patel	East Ridge Middle School	Mrs. Natalie Cambell
J0716	Project OxiDrone	

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#### Honorable Mention

*2 awards for Lake Region*

## Manatee STEM Competition

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### Junior *Engineering*

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Joshua Bonilla Grillo	Electa Arcotte Lee Middle School	Miss Rebecca Farrell
J0724	Prosthetic Hand Test	

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Honorable Mention

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Conner Quinlan	Electa Arcotte Lee Middle School	Miss Rebecca Farrell
J0724	Prosthetic Hand Test	

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Honorable Mention

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Aiden Trego	Electa Arcotte Lee Middle School	Miss Rebecca Farrell
J0724	Prosthetic Hand Test	

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Honorable Mention

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

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Jonathan P Xavioer	Southeast High School	Mr. Steven Craig
S0417	Impact of <i>Solanum tuberosum</i> Cultivar on Hydrogen Peroxide Decomposition	

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Recognition

### Senior *Microbiology*

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Alina A Chacko	Southeast High School	Mr. Steven Craig
S1115	Testing the Effectiveness of Different Types of Chemicals in Inhibiting the Growth of <i>Lactobacillus acidophilus</i>	

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Honorable Mention

***5 awards for Manatee STEM Competition Region***

## Martin

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### Junior *Earth & Environmental Sciences*

Isabella Calhoun	Saint Joseph Catholic School	Mrs. Shannon Parks
J0611	Compost: Nature's Fertilizer	

Fourth Place

Nina Goyal	Hidden Oaks Middle School	Mrs. Shannon Parks
J0612	Greenhouse Gases Showdown	

Fourth Place

### Junior *Environmental Engineering*

Kathryn Rogers	Dr. David L. Anderson Middle School	Mrs. Shannon Parks
J0807	Saving with Solar	

Fourth Place

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

Varun Singh	Dr. David L. Anderson Middle School	Mrs. Shannon Parks
J0904	Busted! Monitoring Hand Hygiene with Smart RFID Technology: Part 2	

Third Place

### Senior *Engineering*

Steven Vokoun	South Fork High School	Mrs. Shannon Parks
S0702	Creation of a Highly Efficient Surface ROV Invoking Cylindrical Solar Panels Year 5	

Fourth Place

***5 awards for Martin Region***

## Monroe

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### Junior *Earth & Environmental Sciences*

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Sebastian McCoy

Key Largo School

Ms. Jessica Graham

J0634

Lighting Up the Sky!

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Third Place

***1 awards for Monroe Region***



## Northeast Florida

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

Mia G Brien J0408	Sacred Heart Catholic School Binding Agents for Chai Tea	Dr. Archie Yumul
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Honorable Mention

### Junior *Earth & Environmental Sciences*

Thomas P Cratem J0632	San Jose Catholic School Removing Oil from Water	Mrs. Sarah Pascual
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Fourth Place

Caroline N Kartsonis J0632	San Jose Catholic School Removing Oil from Water	Mrs. Sarah Pascual
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Fourth Place

### Junior *Engineering*

Rylie A Muldoon J0730	Sacred Heart Catholic School Flood Prevention: Sandbags vs Polyvinyl Chloride	Dr. Archie Yumul
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Honorable Mention

Ania Villas J0730	Sacred Heart Catholic School Flood Prevention: Sandbags vs Polyvinyl Chloride	Dr. Archie Yumul
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Honorable Mention

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

Juliana J Weldon J0920	Christ the King Catholic School Typing Made Easy: A Coding Project	Ms. Lilia Darrow
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Honorable Mention

### Junior *Physics & Astronomy*

Mihir Sonthi J1232	Julia Landon College Preparatory Middle School Using Artificial Gravity to Simulate Gravitational Force on Earth	Mrs. Bhavani Sonthi
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Recognition

### Senior *Animal Sciences*

Kristi Biswas S0117	Paxon School for Advanced Studies Novel Geotaxic Data Show Botanical Therapeutics Slow Parkinson's Disease in A53T and ParkinKO Models	Mrs. Emma Gallagher
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Division Grand Award Winner And First Place

Jordan R Harrow S0118	Episcopal High School of Jacksonville Demonstrating <i>D. Pulex</i> as Environmental Buffers to Acetylcholinesterase Inhibitors on <i>H. Littoralis</i>	Mrs. Marion Zeiner
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Fourth Place

Matthew D Schinsing S0119	Episcopal High School of Jacksonville The Effect of Pesticides on Varroa Mite Numbers in Apis Mellifera Colonies	Mrs. Marion Zeiner
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Fourth Place

### Senior *Behavioral & Social Sciences*

Michael J Barker S0214	Episcopal High School of Jacksonville Study of Factors that Affect a Successful Grant Application	Mrs. Marion Zeiner
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Recognition

### Senior *Biomedical & Health Sciences*

Isabella A Buschini	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0335	Observing the Impact of UV light on Chicken Embryo Eye Growth	
Fourth Place		
Thomas C Commander	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0336	Using Nanoparticle-Based Magnetic Hypothermia to Hinder Planarian Regeneration	
Third Place		
<b>Senior</b>	<b><i>Cellular/Molecular Biology &amp; Biochemistry</i></b>	
Sarah Barksdale	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0422	Machine Learning to Predict Response to Anti-PD1 Treatment in Melanoma Based on Genetic Biomarkers	
First Place		
Jackson L Whitchurch	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0423	Measuring UV-C Energy Dissipation from UV-C LEDs	
Recognition		
<b>Senior</b>	<b><i>Chemistry</i></b>	
Sean R Ramsey	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0521	The Properties of Martian Concrete with Molten Sulfur Binder	
Second Place		
<b>Senior</b>	<b><i>Earth &amp; Environmental Sciences</i></b>	
Miranda K Doro	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0633	Pb (II) Filtration Using an Eco-Friendly Synthesized Ag Nanoparticle Enhanced Biosand Filter	
Recognition		
Julia M Kagilery	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0634	The Creation and Practical Application of Industry Standards Water Analysis Via PXRF	
Second Place		
Natalie C Rabil	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0635	The Combined Toxicity of Lead Nitrate and Dibutyl Phthalate on Freshwater Amphipods	
Fourth Place		
<b>Senior</b>	<b><i>Engineering</i></b>	
Antonio G Valentino	Bishop Kenny High School	Mrs. Vicki Schmitt
S0723	Conquering Concrete - Year III	
Recognition		
<b>Senior</b>	<b><i>Intelligent Machines, Robotics, &amp; Systems Software</i></b>	
George D DeLong	Episcopal High School of Jacksonville	Mrs. Marion Zeiner
S0920	Engineering a Robot Arm with Computer Vision and Simulated Grabbing for Manipulation of Objects	
Second Place		
<b>Senior</b>	<b><i>Physics &amp; Astronomy</i></b>	
Eric W Lee	Stanton College Preparatory School	Mr. Ye Lee
S1222	Analyzing the Implementation of Optical Wireless Communication in Aerospace Science	
Third Place		
Izabelle J Young	Bishop Kenny High School	Mr. Scott Thomas
S1223	Developing a Novel System to Combat Space Radiation and Neurodegeneration Using Electromagnetism	
Second Place		

**Senior**      *Plant Sciences*

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Nicole E Stover	Samuel W. Wolfson Senior High School	Mr. Jeffrey Steele
S1325	Dissolved Oxygen Augmentation Effects on the Hydroponic Cultivation of <i>Eruca sativa</i> in NFT System	

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Third Place

***24 awards for Northeast Florida Region***

## Osceola

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**Senior**      *Engineering*

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Madeline J Perry	St. Cloud High School	Mr. Robert Dombo
S0720	Weighted Wings: Analyzing Airfoil Performance in Tropospheric Conditions	

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Honorable Mention

**Senior**      *Mathematics & Computational Sciences*

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Noah B Jenkins	St. Cloud High School	Mr. Anthony DeLuca
S1012	Developing Heteroscedastic Estimations of Volatility for the Valuation of Options Using the Black-Scholes Options Pricing Model	

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Third Place

*2 awards for Osceola Region*

## Palm Beach

### Junior *Animal Sciences*

Michael Mikati	The Weiss School	Kevin Simmons
J0109	Sensitivity of <i>Manduca sexta</i> Moths to Various Light Wavelengths	

Second Place

### Junior *Behavioral & Social Sciences*

Yara Ismail	Garden of the Sahaba Academy	Princess Abdul-Akbar
J0203	Optical Illusions	

Recognition

### Junior *Biomedical & Health Sciences*

Rima Alsheikh	Eagles Landing Middle School	Kimberly Gioia
J0312	SPF Longevity of Natural Oils in an Oxybenzone and Octinoxate-Free Base	

Fourth Place

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

Victoria Stern	Loggers' Run Middle School	Mr. Richard Kabinoff
J0403	What Type of Milk Has the Highest Amount of Protein?	

Recognition

### Junior *Chemistry*

Kasey Moore	American Heritage School of Boca/Delray	Mrs. Nicolae Lambrou
J0515	Vitamin C in Oranges over Elapsed Time	

Third Place

### Junior *Environmental Engineering*

Bianca Bernhard	The Weiss School	Kevin Simmons
J0810	Comparing the Efficiencies of Different Methods of Biological and Technological Carbon Sequestration	

Fourth Place

Liam Schnur	The Weiss School	Kevin Simmons
J0811	Evaluating Hydrocarbon Absorption of Various Textiles for Use in Oil Spill Mitigation.	

Third Place

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

Benjamin Kessler	The Weiss School	Kevin Simmons
J0908	Comparison of Programming Methods for Computer Solutions to Sudoku Puzzles	

Fourth Place

Patrick O'Leary	A.D. Henderson University School	Ms. Suzette Milu
J0909	Can an Underwater Camera be Attached to a Buoy to Identify Sharks Using a Monorail System that Can Alert People at Local Beaches When a Shark Is Approaching?	

Third Place

### Junior *Mathematics & Computational Sciences*

Eoghan Mcivor	Polo Park Middle School	Mr. Shaun Stabler
J1005	Comparing Programming Languages	

Second Place

### Junior *Microbiology*

Brianna Marturano	Home School	Mrs. Margarete Marturano
J1107	Is <i>Pseudomonas fluorescens</i> the answer to Environmental Pollution?	
Fourth Place		
<b>Junior</b> <i>Physics &amp; Astronomy</i>		
Su O'Brien	IDEAL School of Advanced Learning	Ms. Mary Judith
J1217	Water Power	
Third Place		
<b>Junior</b> <i>Plant Sciences</i>		
Bhav Jain	Don Estridge High Tech Middle School	Mrs. Heather Tully
J1306	What Is the Effect of Acid Rain on Plants?	
Recognition		
Catherine Zhao	Bak Middle School of the Arts	Mrs. Rhonda Steinmetz
J1307	Storing Strawberries to Maintain Freshness	
Fourth Place		
<b>Senior</b> <i>Animal Sciences</i>		
Emily Weimer	Palm Beach Central High School	Mr. William Bartenslager
S0105	The Effect of Putative Beneficial Microorganisms for Coral (pBMC) In The Prevention of Disease and Bleaching (Year Two)	
Second Place		
<b>Senior</b> <i>Behavioral &amp; Social Sciences</i>		
Mandy Feuerman	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0204	An Examination of the Association Between Empathy and Adherence to Covid-19 Safety Guidelines	
Third Place		
Daria Sokolova	Spanish River Community High School	Ms. Mary Fish
S0205	The Effect of Phenotypic Variations on Shoaling Behavior in Zebrafish	
Honorable Mention		
<b>Senior</b> <i>Biomedical &amp; Health Sciences</i>		
Diane Altidor	Palm Beach Central High School	Mr. William Bartenslager
S0316	Determining the Effect of a Disulfiram Copper Complex on Drug Resistance in Metastatic Breast Cancer Cells Through Deletion of ALDH1 (A Three Year Study)	
First Place		
Maryam Imran	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0317	Developing an Artificial Neural Network as a Method for Real-Time Diagnosis and Detection of Atrial Fibrillation in Electrocardiograms	
Recognition		
<b>Senior</b> <i>Cellular/Molecular Biology &amp; Biochemistry</i>		
Aishwarya Ayyanathan	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0408	Developing an Convolutional Neural Network for Accurate and Inexpensive Lung Cancer Diagnosis	
Fourth Place		
Julianna Lian	Florida Atlantic University High School	Mrs. Robin Barks
S0409	Exploring ROS-mediated Inflammation with Polyphenol-rich <i>Sargassum sp.</i> and Incredibly Regenerative <i>D. dorotocephala</i>	
Second Place		
<b>Senior</b> <i>Chemistry</i>		

Nolan Wen	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0512	The Effect of Cyanoacrylate on the Setting Time and Adhesive Strength of a Nitrocellulose Based Liquid Bandage: A Proof of Principle Study	

Third Place

**Senior** *Earth & Environmental Sciences*

Sarah Garfield	Palm Beach Central High School	Mr. William Bartenslager
S0616	The Effect of Predator-Induced Increases on CO2 Sequestration in Bromeliad-Daphnia Reservoir Ecosystems	

Recognition

Tejavsi Kari	Palm Beach Central High School	Mr. William Bartenslager
S0617	The Effect of Carbon Nanotubes and Oil Dispersants on the Oil Degrading Ability, Vitality, and Gene Expression of <i>A. borkumensis</i>	

Fourth Place

Michael Brouse	Spanish River Community High School	Ms. Mary Fish
S0618	Behavioral Responses to Acute Caffeine Exposure in <i>Danio rerio</i>	

Fourth Place

**Senior** *Engineering*

Catherine Lee	Palm Beach Central High School	Mr. William Bartenslager
S0706	Decreasing Acoustic Footprint of Marine Propellers, Using Geometric Modifications.	

Honorable Mention

Jimmy Joseph	Florida Atlantic University High School	Mrs. Robin Barks
S0707	Utilizing Solar Tracking Technologies to Provide Cheap and Efficient Energy	

Recognition

Michael Pitts	Suncoast Community High School	Mr. Jeff Laufer
S0708	Creating Hydrogen through Solar-Powered Electrolysis	

Recognition

Lucja Stawikowska	Florida Atlantic University High School	Mrs. Robin Barks
S0709	Determination of the Parameters Influencing Cooling Fan Efficiency	

Fourth Place

**Senior** *Environmental Engineering*

Ashesh Amatya	Alexander W. Dreyfoos School of the Arts	Mr. Stephen Anand
S0807	Artificial Neural Network Modeling of Harmful Algal Blooms in Lake Okeechobee	

Third Place

Sarah A Habona	Florida Atlantic University High School	Mrs. Robin Barks
S0808	Using Sargassum and Flaxseed to Create a Mucilaginous Microplastic Filter	

Honorable Mention

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

Aditya Kumar	Spanish River Community High School	Ms. Mary Fish
S0908	Creating a Prototype Device to Monitor Preliminary Symptoms of Sepsis	

Fourth Place

Ashwin G Parthasarathy	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S0909	Classification and Prediction of Head and Neck Squamous Cell Carcinomas Using Generative Adversarial Network Models	

Third Place

**Senior** *Mathematics & Computational Sciences*

Deeksha Kumaresh	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S1005	Using Different Machine Learning Classifiers to Examine the Relationship Between Prodromal Huntington's Disease and miRNAs	

Recognition

**Senior**      *Microbiology*

Angelina Ning	American Heritage School of Boca/Delray	Mrs. Iris Thompson
S1105	Testing the Extent of Synergistic Anti-biofilm Activity of <i>Galla chinensis</i> and Potentially Adjuvant Chemicals on <i>Escherichia coli</i> Biofilm Formation and Preformed Biofilm	

Third Place

Natasha Mayorga	Florida Atlantic University High School	Mrs. Robin Barks
S1106	Can Mycorrhizal Fungi Inhabit Mars?	

Third Place

**Senior**      *Physics & Astronomy*

Caeden Dooner	William T. Dwyer High School	Mrs. Nanette Bradley
S1207	Mitigating Lunar Dust Accumulation on Spacecraft Surfaces via Electric and Magnetic Fields	

Recognition

**Senior**      *Plant Sciences*

Etasha Shah	Palm Beach Central High School	Mr. William Bartenslager
S1310	The Effect of Ultraviolet Radiation on the Amount of Lipids Extracted from <i>Chlorella vulgaris</i>	

Honorable Mention

***38 awards for Palm Beach Region***



## Pasco

### Junior *Animal Sciences*

Eden R Jennings	Academy at the Lakes	Mrs. Colleen McCormick
J0102	What Are the Affects of an Organic vs Inorganic Tofu Diet on the Fertility of the <i>Drosophila melanogaster</i> ?	

Third Place

### Junior *Biomedical & Health Sciences*

Abigail K Laber	Charles S. Rushe Middle School	Mrs. Kim Aursland
J0302	Which Masks Will Protect the Best Against Covid-19?	

Recognition

Karolina S Porcelli	Seven Springs Middle School	Leanne Hebb
J0303	YES to Moisturizer! NO to Eczema!	

Second Place

### Junior *Chemistry*

Brian A Hammond	Pasco Middle School	Ms. Nicole Dunleavy
J0505	Color Writing	

Honorable Mention

### Junior *Earth & Environmental Sciences*

Daniel M Jacob	Academy at the Lakes	Mrs. Colleen McCormick
J0604	Split Decision: How Do Temperature-Based Variables Affect Planarian Regeneration?	

Third Place

Sebastian Davis	Pasco Middle School	Mrs. Alice Novak
J0605	Saving the Earth One Volt at a Time!	

Fourth Place

### Junior *Environmental Engineering*

Luke T Lawhorne	Bishop Larkin Catholic School	Sr. Offurum
J0803	Sharks of Steel	

Honorable Mention

### Junior *Microbiology*

Fatima B Abu Khaled	Pasco Middle School	Mrs. Theresa Hammond
J1101	Best Bacteria Blocker	

Honorable Mention

### Junior *Plant Sciences*

Ben T Harrison	Academy at the Lakes	Mrs. Colleen McCormick
J1301	Does Electrifying a Plant Increase Its Speed of Growth?	

Third Place

### Senior *Animal Sciences*

Anabel Crisostomo	Wiregrass Ranch High School	Mr. Branden L. Anglin
S0101	A Study of the Ammoniotelic-Ureotelic Pathway in <i>L. Terrestris</i> as a Means to Remediate Soil Damaged by Poor Irrigation Practices	

Honorable Mention

### Senior *Behavioral & Social Sciences*

Rachel E Buksbaum	Wiregrass Ranch High School	Mr. Branden L. Anglin
S0201	Jewish Identity Formation Processes within Reform Adolescents	

Fourth Place

**Senior** *Biomedical & Health Sciences*

Bianca R Nicholas	Wiregrass Ranch High School	Mr. Branden L. Anglin
S0302	The Influence of Temperature on the Concentration of Hemoglobin in <i>Lumbricus terrestris</i> and <i>Eisenia fetida</i> Erythrocytes	

Recognition

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

Nathalie J Eckermann	Saddlebrook Preparatory School	Mr. Ed Braddy
S0401	Alcoholic Photosynthesis	

Recognition

**Senior** *Chemistry*

Joshua D Kopp	Wiregrass Ranch High School	Mr. Branden L. Anglin
S0502	A Novel Study on the Potential Application of Higher Efficiency Extraterrestrial Solar Cells: A Year Two Study	

Recognition

**Senior** *Environmental Engineering*

Rachel A Forgas	Wiregrass Ranch High School	Mr. Branden L. Anglin
S0801	The Utilization of <i>Bambusa vulgaris</i> Biochar to Address Runoff Contamination in Ecosystems Damaged by Intense Forest Fires	

Fourth Place

**Senior** *Mathematics & Computational Sciences*

Cemre S Kayisli	Wiregrass Ranch High School	Mr. Branden L. Anglin
S1001	Analysis of the Regulatory Role of Small Nucleolar RNA and Small Nuclear Expression Pathways on the Pathogenesis of Preeclampsia	

Fourth Place

**Senior** *Plant Sciences*

Daniil A Fortuna	Wiregrass Ranch High School	Mr. Branden L. Anglin
S1301	Effects of Curcumin and Silibinin as Telomerase Inhibitors on the Size of Agrobacteria Tumefaciens-Induced Crown Galls in <i>Solanum lycopersicum</i>	

Third Place

**17 awards for Pasco Region**

## Pinellas

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

Vyom Bhandari	Joseph L. Carwise Middle School	Ms. Pamela Himmel
J0907	Phishing Blocker	

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Fourth Place

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

Aanya Bhandari	Palm Harbor University High School	Ms. Pamela Himmel
S0907	Bio-Bin	

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Honorable Mention

***2 awards for Pinellas Region***

## Polk

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### Junior *Animal Sciences*

Nathan Boyd J0106	Frostproof Middle Senior High School Color Changing Plecos	Ms. Cathy Hammel
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Recognition

### Junior *Biomedical & Health Sciences*

Nathan Nasello J0310	Lakeland Christian School Masked Mannequin: How Effective Are Different Masks at Various Distances?	Mrs. Jennifer Canady
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Honorable Mention

Evan Stiltner J0310	Lakeland Christian School Masked Mannequin: How Effective Are Different Masks at Various Distances?	Mrs. Jennifer Canady
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Honorable Mention

### Junior *Chemistry*

Emma Arenth J0513	Resurrection Catholic School How Acids Affect Corrosion	Ms. Teresa Ell
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Fourth Place

Sienna Ferry J0514	Resurrection Catholic School Burning Colors	Ms. Teresa Ell
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Recognition

### Junior *Engineering*

Ronnie Townson J0712	Resurrection Catholic School How Do Different Wings Affect Aerodynamics?	Ms. Teresa Ell
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Third Place

### Junior *Physics & Astronomy*

Bella Overbough J1216	Resurrection Catholic School Does it Ink?	Ms. Teresa Ell
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Third Place

### Senior *Plant Sciences*

Connor McLoughlin S1308	Lakeland Christian School Cuscuta Cross-cutting: Observing the Morphological Changes in Haustorial Structure of Cuscuta Gronovii Between Hosts	Mr. Matthew Croxton
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Fourth Place

Noah Peracciny S1309	Lakeland Christian School Image Analysis of Herbivory and Leaf Area of Infected and Uninfected Invasive Air Potato Leaves	Mr. Matthew Croxton
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Fourth Place

**9 awards for Polk Region**

## Sarasota

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### Senior *Behavioral & Social Sciences*

Lauren X Morgan	Sarasota High School	Mr. Andy Harshman
S0216	Impact of Protective and Risk Factors on Adolescent Responses to COVID-19	

Third Place

### Senior *Biomedical & Health Sciences*

Olivia S Bailey	Sarasota High School	Mr. Andy Harshman
S0337	The Effect of Fabric Composition on the Efficacy of Water Droplet Transmission Suppression	

Honorable Mention

Kassie L Greenan	Sarasota High School	Mr. Andy Harshman
S0338	Determining the Genetic Development of Human Ovarian Cancer Induced by Exposure to Bisphenol-A	

Fourth Place

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

Laney Mulhollen	Sarasota High School	Mr. Andy Harshman
S0424	The Effect of Neuroprotection on Wound Healing Rates in an In Vitro TBI Model	

Fourth Place

### Senior *Chemistry*

Liya D Elan	Sarasota High School	Mr. Andy Harshman
S0522	The Effect of Amorphous Carbon Created by Sugar and Sulfuric Acid on Hydrogen Fuel Storage Cells	

Recognition

### Senior *Earth & Environmental Sciences*

Lily Sikorski	Sarasota High School	Mr. Andy Harshman
S0636	Secretion of Microplastics on the Seafloor	

Third Place

Alexa J VanSuch	Sarasota High School	Mr. Andy Harshman
S0636	Secretion of Microplastics on the Seafloor	

Third Place

### Senior *Engineering*

Quinn M O'Connor	Sarasota High School	Mr. Andy Harshman
S0724	Comparing the Effectiveness of a 3D Printed vs an Industrial Agarose Gel Electrophoresis Chamber	

Fourth Place

### Senior *Environmental Engineering*

Nicole H Norwine	Sarasota High School	Mr. Andy Harshman
S0819	The Optimization of Forward Osmosis Desalination (Year 3)	

Fourth Place

### Senior *Physics & Astronomy*

Sarah R Belli	Sarasota High School	Mr. Andy Harshman
S1224	Optimizing the Photodegradation of High-Density Polyethylene Films Using Mechanically Engineered Strain-Enhancing Techniques	

Fourth Place

**10 awards for Sarasota Region**

## Seminole

### Junior *Animal Sciences*

Arpita Kumar	Teague Middle School	Mr. Andrew Bernhardt
J0113	Are Insects Attracted to Light or Heat of a Light Bulb?	

Honorable Mention

### Junior *Behavioral & Social Sciences*

Taehyun V Won	Jackson Heights Middle School	Mrs. Melanie Francher
J0206	SCPS Parents' Experience with Education Options During COVID-19	

Recognition

### Junior *Chemistry*

Cora L Henry	South Seminole Academy	Mr. William Fabian
J0522	Are Household Liquids Effective in Breaking Down Plastics?	

Fourth Place

### Junior *Engineering*

Gustavo D Spencer	Seminole Science Charter School	Mrs. Ramona Lataille
J0717	Carrier Collision Catastrophe!	

Fourth Place

### Junior *Environmental Engineering*

Moitri Santra	Jackson Heights Middle School	Mrs. Melanie Francher
J0815	Innovative Engineering Tools for Controlling Harmful Algal Bloom (HAB): Year 2	

Division Grand Award Winner And First Place

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

Meghna Vikram	Sanford Middle School	Mr. Brandon VanNuys
J0913	Identical Identity?	

Second Place

Sierra R Leinenbach	Sanford Middle School	Mrs. Amanda Holden
J0914	Building Structures Using Genetic Algorithms (Year 2)	

First Place

### Junior *Mathematics & Computational Sciences*

Simon T Chung	Sanford Middle School	Mrs. Jane Clemens
J1009	Who Will Be the Next President? A Linear Regression Model Predicting the US Presidential Result	

Fourth Place

### Junior *Microbiology*

John Lee	Jackson Heights Middle School	Mrs. Melanie Francher
J1109	A Novel Artificial Reflector for Effective <i>E. Coli</i> Disinfection Using UV	

Third Place

### Junior *Physics & Astronomy*

Arvid C Vaidyanathan	Sanford Middle School	Mrs. Amanda Holden
J1221	Photometer Measurements of the Rayleigh Light Scattered Intensity of Different Concentrations of Covid-19 Sized Nanoparticles	

Third Place

### Junior *Plant Sciences*

John M Behanan	Seminole Science Charter School	Mrs. Ramona Lataille
J1310	The Pull of Magnets	
Honorable Mention		
<b>Senior</b>	<b><i>Animal Sciences</i></b>	
Caralina R Denis	Oviedo High School	Mr. William James Furioli, II
S0108	Correlation of Diet on Polystyrene Consumption Preferences of <i>Tenebrio molitor</i>	
Recognition		
<b>Senior</b>	<b><i>Behavioral &amp; Social Sciences</i></b>	
Ella A Pilacek	Oviedo High School	Mr. William James Furioli, II
S0209	Impacts of Camera Usage on Memory of Students Attending via Video Conference Call	
Honorable Mention		
<b>Senior</b>	<b><i>Biomedical &amp; Health Sciences</i></b>	
Melissa Erdem	Hagerty High School	Mrs. Angela Campbell
S0323	Comparative Analysis and Modeling of Cancer Survival Rates	
Fourth Place		
<b>Senior</b>	<b><i>Cellular/Molecular Biology &amp; Biochemistry</i></b>	
Katelyn B Fry	Oviedo High School	Mr. William James Furioli, II
S0413	<i>Haloferax volcanii</i> Response to Low Oxygen Environment and UV Mutagenesis	
Fourth Place		
<b>Senior</b>	<b><i>Earth &amp; Environmental Sciences</i></b>	
Minh K Lam	Lake Mary Preparatory School	Dr. Chantal Bodkin-Clarke
S0624	Fungi to the Rescue! Acid Rain Mycoremediation of Soil Using <i>Pleurotus ostreatus</i>	
Third Place		
Justin W Richburg	Oviedo High School	Mr. William James Furioli, II
S0625	Creating a Model Ecosystem to Analyze the Correlation between Shoal Grass ( <i>Halodule wrightii</i> ) and Epiphytic Diatoms: Year 5	
Second Place		
Krithika Subramanian	Paul J. Hagerty High School	Mrs. Angela Campbell
S0626	Growth and Decay of Coral Due to Coral Bleaching as Identified by Machine Learning Analysis of Satellite Images	
Recognition		
<b>Senior</b>	<b><i>Engineering</i></b>	
Taehee Um	Oviedo High School	Mr. William James Furioli, II
S0713	Characterizing the Electrical and Thermal Performance of a Circular Exhaust Pipe Thermoelectric Generator	
Fourth Place		
<b>Senior</b>	<b><i>Environmental Engineering</i></b>	
Ishika Nag	Oviedo High School	Mr. William James Furioli, II
S0814	Development of a Combinatory Filtration System for Pollution and Virus Abatement	
Second Place		
<b>Senior</b>	<b><i>Intelligent Machines, Robotics, &amp; Systems Software</i></b>	
Siddharth A Kini	Crooms Academy of InformationTechnology	Dr. Josue Urbina
S0913	Using Machine Learning to Identify Metastatic Tissue in Histopathic Scans of Lymph Node Sections	
Third Place		



**Senior**      *Microbiology*

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Varsha Naga	Winter Springs High School	Mr. Christopher Adamson
S1109	Prevention of Healthcare Associated Infections Using Antibacterial Boron Carbonitride Nanoparticle Coating on Medical Devices	

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Third Place

**Senior**      *Physics & Astronomy*

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Brian Scalf	Oviedo High School	Mr. William Furiosi
S1213	Impacts of Mass Distribution of Maple Samara in Flight	

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Honorable Mention

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Annika ML Vaidyanathan	Winter Springs High School	Mr. Christopher Adamson
S1214	Dynamic Contact Angle Measurements of Superhydrophobicity in Dip-Coated Face Masks to Minimize Exposure to COVID-19 Sized Nanoparticles	

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Division Grand Award Winner And First Place

**Senior**      *Plant Sciences*

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Laboni Santra	Oviedo High School	Mr. William James Furiosi, II
S1316	Minimizing Food Waste Using a Nature-derived Coating – an Innovative Step towards Addressing Global Food Security	

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Division Grand Award Winner And First Place

***25 awards for Seminole Region***

## South Florida

### Junior *Animal Sciences*

Anacarolina Paz	Bob Graham Educational Center	Mrs. Marilyn Dieppa
J0110	Effects of Magnetism on Planaria	

Recognition

Angeline D Vargas	Bob Graham Educational Center	Mrs. Marilyn Dieppa
J0110	Effects of Magnetism on Planaria	

Recognition

George Pesin	George Washington Carver Middle School	Mrs. Bertha Vazquez
J0111	Honey, Where's the Sugar?	

Third Place

### Junior *Chemistry*

Herbert G Bresier	Shenandoah Middle School	Mr. Jose Saud
J0516	Hey! I Didn't Know My Bike Could Rust So Quick!	

Honorable Mention

Kevin Ortega	Palm Springs Middle School	Mrs. Dennie Curry
J0517	Pain Terminator!	

Recognition

### Junior *Earth & Environmental Sciences*

Angelika M Morales	Norman S. Edelcup Sunny Isles Beach K-8 Community School	Mr. Eugenio Machado
J0617	Death of the Duckweed	

Honorable Mention

Alexia P Politis	Aventura Waterways K-8 Center	Livan Escudero
J0618	Designing the Best Storm Drain	

Recognition

Isabella V Robaina	Ruth K. Broad Bay Harbor K-8 Center	Ms. Silvia Mayorga
J0620	Heat Coefficient Reduction in Windows	

Recognition

### Junior *Environmental Engineering*

Pranav Rai	Archimedean Middle Conservatory	Ms. Cassandra Winkle
J0812	Ferrofluids to the Rescue!	

Honorable Mention

### Junior *Mathematics & Computational Sciences*

Ace j Stein	iPrep Academy North	Dr. David Buncher
J1007	The Unification of the 4 Quantum Numbers: Exponential Smoothing for a Fifth Quantum Number	

Recognition

### Junior *Physics & Astronomy*

Emily Tsiros	Archimedean Middle Conservatory	Ms. Cassandra Winkle
J1218	Flames in Microgravity	

First Place

### Junior *Plant Sciences*

Amanda M Struble J1308	Highland Oaks Middle School The Effect of Climate Change on Seeds	Mr. Julio Miguez
Third Place		
<b>Senior</b> <i>Behavioral &amp; Social Sciences</i>		
Julia Colan S0206	MAST Academy at FIU The Effect of Medical Masks on the Perception of Facial Social Cues in Adolescents	Mrs. Cristina Madrigal
Recognition		
Dante A Martinez S0207	Westminster Christian School The Effect of Constraining Eye Movements on Learning Gains and Retention	Mrs. Lisa Garrido
Third Place		
<b>Senior</b> <i>Biomedical &amp; Health Sciences</i>		
James Y Cai S0318	Miami Palmetto Senior High School Neural-network Based Genomic Tests to Predict the Recurrence Risk of Breast Cancer	Ms. Pamela Shlachman
Second Place		
Isabela V Perdomo S0319	MAST Academy at FIU A Mathematically Generated Bessel Function Based Ultrasonic Waveform Tractor Beam for Optimizing Blood Circulation	Mrs. Cristina Madrigal
Second Place		
<b>Senior</b> <i>Cellular/Molecular Biology &amp; Biochemistry</i>		
Anna M Beck S0410	Coral Reef Senior High School Molecular Docking Study of the Ebolavirus Surface Glycoprotein to Develop Anti-Ebola Drug	Ms. Lauriann Carbajal
Honorable Mention		
<b>Senior</b> <i>Chemistry</i>		
Harmanpreet Kaur S0514	Medical Academy for Science and Technology Aluminum Hydroxide Concentrated Filtration Device Systems for the Removal of Phosphates to Combat Eutrophication in Aquatic Ecosystems.	Ms. Patricia Sacasa
Third Place		
<b>Senior</b> <i>Earth &amp; Environmental Sciences</i>		
Sunny J You S0619	Miami Palmetto Senior High School A Novel Deep Learning Model for Estimating Tropical Cyclone Intensity from Satellite Images	Ms. Pamela Shlachman
First Place		
<b>Senior</b> <i>Environmental Engineering</i>		
Zoe F Diederich S0810	Maritime and Science Technology Academy An Efficient and Cost-Effective Cooling System for Nuclear Power Plants	Ms. Claudia Torres
Second Place		
<b>Senior</b> <i>Physics &amp; Astronomy</i>		
Melanie Deville S1209	Westminster Christian School Visualization of Three-Dimensional Aerospoke Nozzle Flow Using Schlieren Photography	Mrs. Lisa Garrido
Fourth Place		
<b>21 awards for South Florida Region</b>		

## St. Johns

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### Junior *Biomedical & Health Sciences*

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Maria Vittoria Rutherford	Palmer Catholic Academy	Mrs. MaryBeth Letscher
J0309	A Bright Idea for Treating Lung Infections: Studying the Propagation of UV Light in a Phantom Medium for Surfactant Lipids Using a Common Household Item	

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Second Place

### Junior *Engineering*

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Emma York	Freedom Crossing Academy	Mr. David Zeinert
J0711	Testing the Efficiency of Different Curvatures of the Blades of a Savonius Wind Turbine	

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First Place

### Senior *Biomedical & Health Sciences*

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Aiden Fong	Ponte Vedra High School	Dr. Kathryn Kehoe
S0312	Testing for Water-Soluble Antimicrobial Compounds in Primitive Herbal Remedies	

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Third Place

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Stephen A Kupcha	Ponte Vedra High School	Dr. Kathryn Kehoe
S0312	Testing for Water-Soluble Antimicrobial Compounds in Primitive Herbal Remedies	

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Third Place

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David P VanLue	Ponte Vedra High School	Dr. Kathryn Kehoe
S0312	Testing for Water-Soluble Antimicrobial Compounds in Primitive Herbal Remedies	

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Third Place

### Senior *Engineering*

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Benjamin M York	Creekside High School	Mrs. Amy Eardley
S0703	Designing and Testing a Novel 25% Degree of Reaction Steam Turbine	

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First Place

### Senior *Plant Sciences*

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Kelly Y Yuan	Allen D. Nease High School	Mrs. Marsha Sanford
S1306	Comparing Plant Growth in Hydroponics vs Soil	

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Honorable Mention

***7 awards for St. Johns Region***

## St. Lucie

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Senior      *Microbiology*

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Madison N Adkins	Lincoln Park Academy	Ms. Deborah Lookabill
S1113	How do Endophytic Bacteria Affect the Growth of Plant	

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Fourth Place

***1 awards for St. Lucie Region***

## Suwannee Valley

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### Junior *Plant Sciences*

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Kelly L Burton	Fort White High School	Mr. Wayne Oelfke
J1318	The Effect of Organic and Inorganic Fertilizers on Collard Green Growth and Soil Health	

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Honorable Mention

Cyler P Robinson	Fort White High School	Mr. Wayne Oelfke
J1318	The Effect of Organic and Inorganic Fertilizers on Collard Green Growth and Soil Health	

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Honorable Mention

Jonaz Watson	Fort White High School	Mr. Wayne Oelfke
J1318	The Effect of Organic and Inorganic Fertilizers on Collard Green Growth and Soil Health	

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Honorable Mention

### Senior *Microbiology*

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Jasmine D Bryan	Madison County High School	Mrs. Amanda Phillips
S1117	Utilizing Eukaryotic <i>Saccharomyces cerevisiae</i> as an Electricigen in Both Pure and Co-Culture in the Anode of a Microbial Fuel Cell	

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First Place

***4 awards for Suwannee Valley Region***

## Thomas Alva Edison

### Junior *Behavioral & Social Sciences*

Mehereen Chowdhury	Canterbury School of Fort Myers	Mrs. Cara Summit
J0212	A Novel Approach to the Cognitive Effects of Different Types of Multitasking and its Effect on Short Term Memory	

Third Place

### Junior *Biomedical & Health Sciences*

Jaxson D Moenning	Charlotte Preparatory School	Mr. Russell Hendricks
J0324	Wearing a Swim Cap is a Drag... or Not	

Honorable Mention

Mason Huffman	Trafalgar Middle School	Mrs. Kathlyn Hendee
J0325	Assessing Mask Efficacy with Laser and Sound Transmission	

Division Grand Award Winner And First Place

### Junior *Chemistry*

Kaelie M Della-Luna	Oak Hammock Middle School	Mr. Andrew Urnezis
J0541	Feelin' the Burn? Which Antacid Neutralizes Acid Most Effectively?	

Fourth Place

### Junior *Earth & Environmental Sciences*

Kurukulasuriya Fernando	Paul Laurence Dunbar Middle School	Ms. Lisa Leitten
J0635	Microplastic Interaction in Aquatic Primary Consumers: Potential for Biomagnification	

First Place

Maria Urakawa	Three Oaks Middle School	Mr. Jason Laux
J0636	Does Hydrogen Peroxide Save Aquatic Animals from Toxic Algal Blooms?	

Honorable Mention

### Junior *Environmental Engineering*

Sarah A Engel	Saint Andrew Catholic School	Mr. James Less
J0828	Oil and Water Don't Mix	

Recognition

### Junior *Microbiology*

Dhruva R Sharma	Paul Laurence Dunbar Middle School	Ms. Lisa Leitten
J1114	Protective Efficiency of Masks in Preventing the Spread of COVID-19	

First Place

### Junior *Physics & Astronomy*

Davis R Wold	Trafalgar Middle School	Mrs. Kathlyn Hendee
J1233	Up, Up, and Away!	

Recognition

### Junior *Plant Sciences*

Makayla S Mitchell	Trafalgar Middle School	Mrs. Kathlyn Hendee
J1322	Red Light, Yellow Light, Green Light (Does the Color of Light Affect Plant Growth?)	

Fourth Place

### Senior *Biomedical & Health Sciences*

Aum J Dhruv	Fort Myers High School	Ms. Cathy Tucker
S0339	Modeling the Effectiveness of Pre-Existing Sutures and a Novel Chitosan Approach in a Simulated, Biodegradable Environment	

Recognition

**Senior**      *Engineering*

Jay Chavakula	Canterbury School	Ms. Kelly Percivall
S0726	The Utilization of Dimples to Reduce Wind Load on Parabolic Structures	

Third Place

**Senior**      *Environmental Engineering*

Heidi E Kinsey	Fort Myers High School	Ms. Cathy Tucker
S0821	A Comparison of Domestic Dryer Contributions to Previous Domestic Washer Data of Microplastic Fiber Emissions in Waste Water Generated from Synthetic Textiles	

Recognition

**Senior**      *Mathematics & Computational Sciences*

Maya S Chandar	Canterbury School of Fort Myers	Ms. Kelly Percivall
S1013	Development of a Novel Machine Learning Algorithm to Aid in Detection of Structural Characteristics of Alzheimer's Disease in MCI Patients	

Fourth Place

**Senior**      *Plant Sciences*

Bryce M Krohnfeldt	Estero High School	Mr. Cody Rimes
S1326	Speed of Photosynthesis in Relation to Surface Area	

Fourth Place

***15 awards for Thomas Alva Edison Region***



## Tomoka

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### Junior *Chemistry*

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Wyatt S Wahl	David C. Hinson Middle School	Mrs. Amanda Watson
J0501	How Does Water from Different Sources Cause Limestone to Erode Leading to Sinkholes?	

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Fourth Place

### Junior *Earth & Environmental Sciences*

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Rani V Gupta	David C. Hinson Middle School	Mrs. Amanda Watson
J0601	Does Adding Natural Starch Prevent Soil Erosion?	

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Third Place

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

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Ethan H Muller	Creekside Middle School	Mr. Martin Ingoldsby
J0901	Distance Learning Dilemma: How Do Various Wi-Fi Boosters Affect Internet Speed?	

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Recognition

### Senior *Earth & Environmental Sciences*

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Amy E King	Burns Science and Technology Charter School	Mrs. Barbara Hawes
S0601	Coagulation Flocculation Sedimentation Filtration of Microplastics	

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Honorable Mention

***4 awards for Tomoka Region***

## West Panhandle

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### Junior *Chemistry*

Sidney Teague J0507	Holley Navarre Middle School Playing with Fire	Mrs. Jodi Russell
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Recognition

### Junior *Environmental Engineering*

Heidi R Van Antwerpen J0805	Holley Navarre Middle School Solar Disco Fan	Mrs. Jodi Russell
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Recognition

### Junior *Physics & Astronomy*

Story L Novotny J1205	Brown Barge Middle Schol Break It! How Much Force Is Required to Break Taekwondo Boards?	Mr. Richard Stuart Hunter
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Recognition

Lilo A Vuong J1205	Brown Barge Middle Schol Break It! How Much Force Is Required to Break Taekwondo Boards?	Mr. Richard Stuart Hunter
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Recognition

### Senior *Mathematics & Computational Sciences*

Grace C Williams S1003	Pensacola High School Using Mathematics to Research the West Nile Virus and Neuroinvasive Disease	Ms. Karen Bruening
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Honorable Mention

### Senior *Plant Sciences*

Ava R Kesler S1303	Pensacola High School Effect of Combined Fertilizers on an Agricultural Crop	Mrs. Cheri Stephens
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Recognition

***6 awards for West Panhandle Region***