



Junior

Animal Sciences

Recognition

Students Name(s): Kira Lawless

School: Saint Joseph Catholic School, **Region:** Martin

Title: Cockroaches

Students Name(s): Sophie Henniger

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

Title: Buckling Braces

Honorable Mention

Students Name(s): Paityn Sadler

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

Title: Trapping Flies

Students Name(s): McKenzie G White

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

Title: Does Temperature Affect Sexual Maturing Time of Red Cherry Shrimp

Fourth Place

Students Name(s): Kinley McCaw

School: Dr. Mona Jain Middle School, **Region:** Manatee STEM Competition

Title: Determining the Phenotype of a Fruit Fly

Students Name(s): Kathryn Sharkey

School: Challenger K8 School of Science and Mathematics, **Region:** Hernando

Title: Hindered Hatchings-The Effect of Pollutants on Brine Shrimp Hatching Rates

Third Place

Students Name(s): Caitlin Josephine O'Sullivan

School: A.D. Henderson University School, **Region:** Palm Beach

Title: Pitch Perfect Dolphins; Determining the Pitch Frequency Communication in Dolphins

Students Name(s): Yazan O. Jawad

School: The Cornerstone School, **Region:** Big Springs

Title: What Temperature Is Best for Corals?

Students Name(s): Senait Alier

School: Saint Cecelia Catholic School, **Region:** Pinellas

Title: Milkweed vs Synthetic Diet for Monarch Caterpillars

Second Place

Students Name(s): Abigail Dooley

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

Title: What Damages Coral Reefs Most?

Students Name(s): Jacob Thompson

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: Oh Barnacles!

First Place

Students Name(s): Allison Alfert

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

Title: Can an Ant Be Tricked Into Thinking that a Live Ant Is Dead?



Junior

Behavioral & Social Sciences

Recognition

Students Name(s): Ian Newgent
School: Holley Navarre Middle School, **Region:** West Panhandle
Title: Can You Taste Colors?

Students Name(s): Meagan Joens
School: DeSoto Middle School, **Region:** Heartland
Title: Taking Turns

Honorable Mention

Students Name(s): Delaney C. Peterson
School: The Cornerstone School, **Region:** Big Springs
Title: Effect of Media Consumption Habits on Middle School Students Empathy Quotient

Students Name(s): Sarah Kouli
School: Salah Tawfik Elementary and Middle School, **Region:** Broward
Title: A Novel Approach to Increasing Fruit and Vegetable Intake Using Skin Carotenoid Scores - A Continuation Project

Fourth Place

Students Name(s): Delaney Kane; Cheyenne Lefczuk
School: Buchanan Middle School, **Region:** Hillsborough
Title: Relationship of Age and Response Time in the Stroop Effect

Third Place

Students Name(s): Kathryn Rogers
School: Dr. David L. Anderson Middle School, **Region:** Martin
Title: Feeling the Beat

Students Name(s): Ava Wilson; Naomi Babb; Kathryn Naberhaus
School: Ascension Catholic School, **Region:** Brevard: Mainland
Title: Does the Lighting in a Room Affect the Productivity and Concentration of Students?

Students Name(s): Avi R Johnson
School: Storm Grove Middle School, **Region:** Indian River
Title: Mind Madness

Second Place

Students Name(s): Tyler S Simpson
School: Sebastian River Middle School, **Region:** Indian River
Title: You Make the Call

Students Name(s): Elliet Harper McDermed
School: Trinity Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Logic in Middle School: Can Practicing the Stroop Test Help Middle Schoolers Improve on Logical Thinking Puzzles?

First Place

Students Name(s): Stella Redon

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: The Impact of COVID-19 on Social Anxiety Levels



Junior

Biomedical & Health Sciences

Recognition

Students Name(s): Grant Stigall; Aden Morrison

School: Ascension Catholic School, **Region:** Brevard: Mainland

Title: Does Temperature Affect Heart Rate and Blood Pressure?

Students Name(s): Emma M. Jandrew

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

Title: Can You Remove Food Dye From Soda?

Students Name(s): Oliver Holt

School: George Washington Carver Center for International Studies, **Region:** South Florida

Title: How the Number of Students Affect the CO2 Levels in a Classroom

Honorable Mention

Students Name(s): Haylie Erb

School: Challenger K8 School of Science and Mathematics, **Region:** Hernando

Title: Reflect on Your Reflux: The Effect of Homeopathic, Naturopathic, and Synthetic Ingredients on the Differences in the pH of Acidic Beverages

Students Name(s): Kaelie Della-Luna

School: Oak Hammock Middle School, **Region:** Thomas Alva Edison

Title: Gauging the Glucose in Fruit Juices

Students Name(s): Emily Van Name

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

Title: How Does Light Effect The Vitamin Content of Fruit Juices?

Fourth Place

Students Name(s): Liahm R Ilangantileke

School: Elizabeth Cobb Middle School, **Region:** Capital

Title: Efficacy of Masks vs Time and Distance

Students Name(s): Theodore Toler

School: Challenger K8 School of Science and Mathematics, **Region:** Hernando

Title: The Effect of PPE Mask Use During Moderate Activity on the Oxygen Saturation of Adults

Students Name(s): Landon Plechaty

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: Metal vs Bacteria

Third Place

Students Name(s): Caitlin Scroggs

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

Title: Incision Decisions

Students Name(s): Violet Matthews
School: Treasure Village Montessori School, **Region:** Monroe
Title: Green Light Go!

Students Name(s): Mahie Patil
School: Orlando Science Middle Charter School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Keep Away!

Second Place

Students Name(s): Danika Tirpak
School: DeLaura Middle School, **Region:** Brevard: Intracoastal
Title: Testing Facial Covering Efficacy Using Schlieren Photography

Students Name(s): Daniella Mia Diallo
School: American Heritage School, **Region:** Broward
Title: The Effects of Different Masks on Oxygen Levels

First Place

Students Name(s): Aaron Zacharia
School: Julia Landon College Preparatory Middle School, **Region:** Northeast Florida
Title: Mission Go Dark

Grand Award Winner

Students Name(s): Aaron Zacharia
School: Julia Landon College Preparatory Middle School, **Region:** Northeast Florida
Title: Mission Go Dark



Junior

Cellular/Molecular Biology & Biochemistry

Recognition

Students Name(s): Kylin G. Reynolds; Angeliah J. Pierre; Sophia G. Flores

School: Pembroke Pines Charter Middle School, **Region:** Broward

Title: Hydrophobic Helpers

Students Name(s): Mayar Basem Harim

School: Salah Tawfik Elementary and Middle School, **Region:** Broward

Title: The Effect of Turmeric on Regenerative Adaptation, Neuroplasticity, and Memory in Planaria

Honorable Mention

Students Name(s): Malak Yehia Salem

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

Title: Effect of Temperature on DNA extraction from Vitis?

Fourth Place

Students Name(s): Abigail D. Lacayo

School: Wildwood Middle High School, **Region:** Big Springs

Title: Enzyme Excellency

Students Name(s): Tanishka Aglave

School: Williams Middle Magnet School, **Region:** Hillsborough

Title: A Novel Nanotechnology Based Approach for the Control of Pestalotiopsis Disease Outbreak in Florida Strawberries

Third Place

Students Name(s): Aiden Wright

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: The Effect of *Coffea arabica* on *Caenorhabditis elegans*

Second Place

Students Name(s): Nina Goyal

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

Title: Effects of Double-stranded RNA Treatment on Sunflowers

First Place

Students Name(s): Tanvi Reddy Desai

School: A.D. Henderson University School, **Region:** Palm Beach

Title: Quantitative Image Analysis of Ocean Acidification Effects on *Argopecten irradians* Shell Integrity



Junior

Chemistry

Recognition

Students Name(s): Madison Hancock
School: New Smyrna Beach Middle School, **Region:** Tomoka
Title: Let's See How Much Vitamin C

Students Name(s): Kaian Da Fonseca; Isabella Masson
School: East Ridge Middle School, **Region:** Lake
Title: Denaturing Proteins

Students Name(s): Camila Salcedo-Lind
School: West Gate K-8, **Region:** St. Lucie
Title: Does the Type of Yeast Effect How Much Bread Rises?

Students Name(s): Zahaira Cromwell
School: Academy Prep Center of Lakeland, **Region:** Polk
Title: To Study the Presence of Oxalate Ions in Food

Honorable Mention

Students Name(s): Brooklyn A. Bernstein
School: New Smyrna Beach Middle School, **Region:** Tomoka
Title: Get The Chlorine Out!

Students Name(s): Jake Johnson
School: Paul R. Smith Middle School, **Region:** Pasco
Title: Spherification

Students Name(s): Julia P. Temple
School: Wildwood Middle High School, **Region:** Big Springs
Title: Where Rubber Meets the Road

Students Name(s): Carly Lefelar
School: Sugarloaf School, **Region:** Monroe
Title: The Study of Different Filtration Techniques and How They Reduce the Dissolved Solids and Their Effect on the pH Level

Fourth Place

Students Name(s): Alexander L Ferland
School: Andrew Jackson Middle School, **Region:** Brevard: Mainland
Title: The Impact of Different Environmental Conditions on Galvanic Corrosion at a Launch Pad Structure

Students Name(s): Serena N. Saju
School: The Cornerstone School, **Region:** Big Springs
Title: Do Sports Drinks Contain more Electrolytes than Coconut Water?

Students Name(s): Kaylee Smith
School: Challenger K8 School of Science and Mathematics, **Region:** Hernando
Title: The Effect of Fuel Type on Burn Time - Biodiesel, a Go Or a No

Students Name(s): Delia McKay
School: Fruit Cove Middle School, **Region:** St. Johns
Title: Determining Ascorbic Acid Levels in Fruit

Students Name(s): Yahya N Sakallah
School: Broward Christian School, **Region:** Broward
Title: The Efficiency of Electrolytes in Hydrogen Production through the Electrolysis of Water

Students Name(s): Noah Anderson Hall-King; James Lyman Green
School: Lockhart Middle School, **Region:** Dr. Nelson Ying Expo - Orange
Title: An Examination of the Uses of Martian Resources for a Returning Mission to Earth

Third Place

Students Name(s): Ekansh Puri
School: The Weiss School, **Region:** Palm Beach
Title: Using Iodine to Mitigate Tropospheric Ozone

Students Name(s): Navraj Singh Dhillon
School: A.D. Henderson University School, **Region:** Palm Beach
Title: Chicken Egg Albumen Mucosin and Filtration of Microplastics

Students Name(s): Griffin Kirby
School: Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal
Title: Salty? Lettuce Find Out

Students Name(s): Colton Harrin
School: Challenger K8 School of Science and Mathematics, **Region:** Hernando
Title: Recycling for Power: The Effect of Organic Material on Energy Output in a MFC

Second Place

Students Name(s): Colin Christopher Quinn
School: The Weiss School, **Region:** Palm Beach
Title: Characterizing the Short Term Ecological Impacts of Industrial Brine Spills

Students Name(s): Yash Umesh Bhatt
School: Falcon Cove Middle School, **Region:** Broward
Title: Utilizing Ferrofluid for the Removal of Tannin, Microplastic, and Heavy Metals from H₂O.

Students Name(s): Andres Manuel Matos
School: Saint Gregory the Great Catholic School, **Region:** Broward
Title: Dirty to Clean: Water Purification Challenge

First Place

Students Name(s): John Lee
School: Jackson Heights Middle School, **Region:** Seminole
Title: Governing Factors for Improving Electrochemical Hydrogen Production and a New MoS₂ Electrode Development

Students Name(s): Cohen Trott
School: Hardee Junior High School, **Region:** Heartland
Title: Do Foods Labeled Sugar Free Contain Glucose?



Junior

Earth & Environmental Sciences

Recognition

Students Name(s): Salsabeel T. Eldeeb

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

Title: Aquatic Remediation: Using an Alternative to Aluminum Sulfate to Prevent Phosphate Stripping From Damaging Eutrophic Waterways for *Daphnia magna*

Students Name(s): Ariela Brody

School: Ruth K Broad Bay Harbor K-8 Center, **Region:** South Florida

Title: Laundry: An Unexpected Source of Plastic Pollution

Students Name(s): Marcus M. Von Rosenberg

School: The Cornerstone School, **Region:** Big Springs

Title: How Well Can Different Types of Biomass Produce Methane through the Anaerobic Process, in Order to Generate Energy?

Students Name(s): Mahika Podarala

School: Seminole Science Charter School, **Region:** Seminole

Title: S.O.S: Save our Soil!

Students Name(s): Alina Beech

School: University Academy - Charter, **Region:** Havens

Title: How Does Water Turbidity Affect Seagrass Width?

Students Name(s): Lilienn Carpenter

School: Sunlake Academy of Math and Science, **Region:** Hillsborough

Title: Salinity and Soil pHacts about Tampa's Drinking Water

Honorable Mention

Students Name(s): Trulie Feingold

School: Ruth K Broad Bay Harbor K-8 Center, **Region:** South Florida

Title: Environmental Impacts That Affect Ocean Water Visibility

Students Name(s): Lorenzo Blanco

School: Charles S. Rush Middle school, **Region:** Pasco

Title: How Does the Amount of Carbon Dioxide Affect the pH of Water?

Students Name(s): Story Novotny; Lilo Vuong

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

Title: The Nurdle Hurdle

Students Name(s): Amelia J. Schmeltz

School: Saint John Lutheran School, **Region:** Big Springs

Title: Does Temperature Affect Reverse Osmosis?

Students Name(s): Jaxon Weakley

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: An Examination of Macroplastics in Sargassum within Coastal Wrack

Fourth Place

Students Name(s): Ashleigh Polhemus
School: Saint Joseph Catholic School, **Region:** Martin
Title: Plants, Pesticides, and pH

Students Name(s): Rachel Devoid
School: Ascension Catholic School, **Region:** Brevard: Mainland
Title: Are We Being Lied to: Do Biodegradable Products Actually Biodegrade?

Students Name(s): Rani V. Gupta
School: David C. Hinson Middle School, **Region:** Tomoka
Title: Which Erosion Controlled Environment Creates the Most Biomass Energy?

Students Name(s): William M Lockwood; John E Curley
School: Saint Edwards School, **Region:** Indian River
Title: Solar Science

Students Name(s): Marco Chua
School: St. Paul's Catholic School, **Region:** Northeast Florida
Title: Wave Force Dissipation: Testing the Effectiveness of Geometric Shapes in Wave Breaking

Students Name(s): Angela Calvo-Chumbimuni
School: Saint Luke's Lutheran School, **Region:** Seminole
Title: Algae Growth in Different Bodies of Water

Students Name(s): Maggie Gao
School: Lincoln Middle School, **Region:** Alachua
Title: Effects of Fire Extinguisher Foam on Soil Quality and Plant Growth

Third Place

Students Name(s): Elena Beck
School: George Washington Carver Center for International Studies, **Region:** South Florida
Title: Food for Florida's Gentle Giants: The Effect of Water Quality on Water Vegetation Eaten by Manatees

Students Name(s): Sara Fernandez
School: Pine Ridge Middle School, **Region:** Collier
Title: The Absorption of Released Liquid Petroleum Hydrocarbon into Marine Ecosystems

Students Name(s): Keya K Patel
School: Maclay School, **Region:** Capital
Title: Effect of CO₂ Acidification on Oyster Shells

Students Name(s): Kai Valko
School: Southern Oaks Middle School, **Region:** St. Lucie
Title: Salty Metals

Students Name(s): Taylor Jayde Burnett
School: Maitland Middle School, **Region:** Dr. Nelson Ying Expo - Orange
Title: The Sufficiency of the Use of Dried and Saturated Lake Algae as a Plant Growth Medium for *Phaseolus vulgaris*

Students Name(s): Tanish Madhar
School: Paul Laurence Dunbar Middle School, **Region:** Thomas Alva Edison
Title: How Do Different Amounts of Herbicides Affect the *Daphnia magna*?

Second Place

Students Name(s): Bella Calhoun
School: Saint Joseph Catholic School, **Region:** Martin
Title: Are We Eliminating Our Ecosystem?

Students Name(s): Ariana S Bolton
School: Storm Grove Middle School, **Region:** Indian River
Title: Global Warming on the Rise: The Effects of Melting Ice and Thermal Expansion on Sea Level

Students Name(s): William Estevez
School: West Shore Junior/Senior High School, **Region:** Brevard: South
Title: How Strong are Dune Plants' Roots?

Students Name(s): Duha Hicham Mabchour
School: Alazhar School, **Region:** Broward
Title: The Effect of Household Cleaning Pollutants on the Survival Rate and Heart Rate of *Daphnia magna*

Students Name(s): Monish Saravana
School: Orlando Science Middle Charter School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Hydrophobic Silica Aerogel or Ferrofluid - Which is More Efficient at Cleaning up Oil Spills

First Place

Students Name(s): Andrew Michael Fiedor
School: The Weiss School, **Region:** Palm Beach
Title: How Are Green Star Polyps Bleached by Oxybenzone and Heated Waters?

Students Name(s): Abhith Kasala
School: Lincoln Middle School, **Region:** Alachua
Title: Global Plastic Pollution- The Depolymerization of Various Plastic Polymers and Finding The Most Effective Chemical for Plastic Recycling

Students Name(s): Anagha Lakshmi Iyer
School: American Heritage School, **Region:** Broward
Title: The Synergistic Effects of Ametryn, Atrazine, Imidacloprid, Spinosad, and Neem Oil on the Development of *Danio rerio* Embryos

Students Name(s): Kurukulasuriya Nishini Fernando
School: Paul Laurence Dunbar Middle School, **Region:** Thomas Alva Edison
Title: A Comprehensive Analysis: An Indication of the Impact of Microplastics on Plants and Soil in Terrestrial Ecosystems and Bacterial Degradation of Microplastics

Grand Award Winner

Students Name(s): Kurukulasuriya Nishini Fernando
School: Paul Laurence Dunbar Middle School, **Region:** Thomas Alva Edison
Title: A Comprehensive Analysis: An Indication of the Impact of Microplastics on Plants and Soil in Terrestrial Ecosystems and Bacterial Degradation of Microplastics



Junior

Engineering

Recognition

Students Name(s): Olivia M. McGill; Sophia L. McGill
School: Wildwood Middle High School, **Region:** Big Springs
Title: Insulation Innovation

Students Name(s): Nadir G Kaser
School: Green Cove Springs Junior High School, **Region:** Clay Rotary
Title: Rechargeable vs Non-rechargeable

Students Name(s): Audrey Hertel
School: Westwood Middle School, **Region:** Alachua
Title: How Does the Speed of Flood Waters Affect How Long Girder Bridges Can Stand Before Breaking?

Students Name(s): Miles Hammond
School: Mid Cape Global Academy, **Region:** Thomas Alva Edison
Title: Hydrogen from Water as a Green Energy Source: A Study of the Ideal Power Conditions for Hydrogen and Oxygen Generation

Honorable Mention

Students Name(s): Gabriel Hosein Mikati
School: The Weiss School, **Region:** Palm Beach
Title: Thermoelectricity - The Free Hidden Energy in our Roadways

Students Name(s): Stephen Dornier
School: Christ the King Catholic School, **Region:** Northeast Florida
Title: The Effect of a Five Pound Weight on Epoxy Resin, Polyester Resin, and UV Cure Resin

Students Name(s): Landon Dodd
School: Windy Hill Middle School, **Region:** Lake
Title: Tiolet Trouble: Year 2

Students Name(s): Kelsey Cook
School: Lawton Chiles Middle Academy, **Region:** Polk
Title: Roofing Ways for Sunny Days

Fourth Place

Students Name(s): Michael D. Ribay
School: Howard Middle School, **Region:** Big Springs
Title: Rolling Rovers: A Feasibility Study of Fused Deposition Modeled Wheels

Students Name(s): Landon W Huber
School: Christ Classical Academy, **Region:** Capital
Title: Forged In Fire - Strength and Hardness of Metal

Students Name(s): Hlla Waregh
School: West Shore Junior/Senior High School, **Region:** Brevard: South
Title: Dusty Solar Panels

Students Name(s): Aadi Bhensdadia
School: Pine View School, **Region:** Sarasota
Title: A Home-Based, Non-Invasive Device to Detect Hyperkalemia

Students Name(s): Sara McWilliams; Julia McWilliams
School: Buchanan Middle School, **Region:** Hillsborough
Title: Using a 3-D Printer to Fix a Handicapped Spork

Third Place

Students Name(s): Gavin Sawall
School: Dr. John Long Middle School, **Region:** Pasco
Title: Under Pressure

Students Name(s): Mia Hutto
School: Assumption Catholic School, **Region:** Northeast Florida
Title: Turning Hydro into Electric Flow

Students Name(s): Zachary Ott
School: C. W. Ruckel Middle School, **Region:** East Panhandle
Title: Spin With the Wind: A Study of Windmill Blade Design

Students Name(s): Deshna Pal
School: Benito Middle School, **Region:** Hillsborough
Title: Wireless Electricity

Second Place

Students Name(s): Molly Chicherio
School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal
Title: An Insulated Idea

Students Name(s): Noah M.T. Leighton
School: Glades Middle School, **Region:** Broward
Title: Can High-Pressure Gas Generate Enough Thrust to Propel an Object

Students Name(s): Maximus Corbin Callis
School: American Heritage School, Plantation, **Region:** Broward
Title: The Effects of Different Carbon Fiber Composite Sandwich Cores on the Young's Modulus and Specific Modulus of the Composite Sandwich Beam when it Is Tested Using a Three-point Beam Test

First Place

Students Name(s): Emma York
School: Freedom Crossing Academy, **Region:** St. Johns
Title: Testing the Impact of Different Fin Lengths on a Heat Sink with a Thermoelectric Cooler (TEC)



Junior

Environmental Engineering

Recognition

Students Name(s): Alejandro Rincon
School: Polo Park Middle School, **Region:** Palm Beach
Title: Saving Energy With A Living Roof

Students Name(s): Julia Bailey
School: Holley Navarre Middle School, **Region:** West Panhandle
Title: Fresh Off The Sun

Students Name(s): Sierra Neitzke
School: Okaloosa STEMM Academy, **Region:** East Panhandle
Title: How Well Different Biodegradable Materials Prevent Food Spoilage

Honorable Mention

Students Name(s): Gavin H. Greathouse
School: Saint John Lutheran School, **Region:** Big Springs
Title: Does the Blade Angle of the Blades on a Wind Turbine Affect the Wind Speed Created?

Students Name(s): Sarah G Fordham
School: Green Cove Springs Junior High School, **Region:** Clay Rotary
Title: Beating The Florida Heat!

Students Name(s): Ivy Tiedemann
School: Treasure Village Montessori School, **Region:** Monroe
Title: Eiffel Tower, Nope, It's a Solar Hydro Tower

Fourth Place

Students Name(s): Michael Jamil Mikati
School: The Weiss School, **Region:** Palm Beach
Title: A Prototype Structure to Mitigate the Urban Heat Island Effect with Possibilities for Energy and Rainwater Collection

Students Name(s): Elijah R. Pyle
School: The Cornerstone School, **Region:** Big Springs
Title: What Blade Angle is Most Efficient for Water Turbine Design?

Students Name(s): Payton Casto
School: Dr. Mona Jain Middle School, **Region:** Manatee STEM Competition
Title: Testing the Bending Strength of Plastic Made from Milk and Vinegar

Third Place

Students Name(s): Pranav Rai
School: Archimedean Middle Conservatory, **Region:** South Florida
Title: Ferrofluids to the Rescue!

Students Name(s): Sarah Dabees
School: North Naples Middle School, **Region:** Collier
Title: The Effect of Water Density on Water Turbine Efficiency

Students Name(s): Elizabeth Teater
School: C. W. Ruckel Middle School, **Region:** East Panhandle
Title: Solar Powered Misting System

Second Place

Students Name(s): Moitri Santra
School: Jackson Heights Middle School, **Region:** Seminole
Title: Innovative Engineering Tools for Controlling Harmful Algal Bloom (HAB): Year 3

Students Name(s): Snehal Sahu
School: Orlando Science Middle Charter School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Generating Electricity from the Soil Using Microbial Fuel Cells

First Place

Students Name(s): Sharanya Natarajan
School: Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal
Title: Suppress that Algae: Mitigating the Effects of Harmful Algal Blooms through Preemptive Detection and Suppression (Year 3)

Grand Award Winner

Students Name(s): Sharanya Natarajan
School: Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal
Title: Suppress that Algae: Mitigating the Effects of Harmful Algal Blooms through Preemptive Detection and Suppression (Year 3)



Junior Intelligent Machines, Robotics, & Systems Software

Recognition

Students Name(s): Simon Chung

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

Title: Wildfire Analytics: What Conditions Lead to the Most Damaging Wildfires?

Students Name(s): Emily Torres; Logan Forty-Way; Neyshlian De Lleguas - Pagan

School: Neptune Middle School, **Region:** Osceola

Title: Earthquakes Don't Fall In!

Honorable Mention

Students Name(s): Sierra Leinenbach

School: Fruit Cove Middle School, **Region:** St. Johns

Title: The Benefits of Multi-Agent Systems in Robotics

Fourth Place

Students Name(s): Keerthi A. Chandran

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

Title: The Write Time!

Students Name(s): Enzo Carter

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: The Effectiveness of Neural Networks in Pain Detection

Third Place

Students Name(s): Alan Alwakeel

School: Saint Joseph Catholic School, **Region:** Northeast Florida

Title: The Efficacy of Using Artificial Intelligence for Identifying Tumors in MRIs

Students Name(s): Vyom Bhandari

School: Carwise Middle School, **Region:** Pinellas

Title: AI Using Hand Gestures for Challenged People

Students Name(s): Gavin Merrell

School: Stone Magnet Middle School, **Region:** Brevard: South

Title: Constructing a Robot to Care for *Dracaena deremensis* Autonomously

Second Place

Students Name(s): Varun Singh

School: Dr. David L. Anderson Middle School, **Region:** Martin

Title: Are You in My Hotspot?

Students Name(s): Michael Power

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

Title: AI Speaks Your Language

First Place

Students Name(s): Darren Lau

School: Academy at the Lakes, **Region:** Pasco

Title: Color Recognition in Machine Learning



Junior

Mathematics & Computational Sciences

Recognition

Students Name(s): Hunter G Cook

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

Title: Masks, Masks, and More Masks 2: A Study of the Efficacy of Face Masks to Block H₂O from Leaving the Human Body

Students Name(s): Amelia R. Scappaticcio

School: Oakridge Middle School, **Region:** Collier

Title: How Strong Is Your Password?

Honorable Mention

Students Name(s): Ace Stein

School: iPrep Academy North, **Region:** South Florida

Title: The Cohesiveness of Leonardo da Vinci's Paintings: Who Really Painted Salvatore Mundi?

Students Name(s): Bailey McDowell

School: Millennium Middle School, **Region:** Seminole

Title: Investing In Reinforcement Learning

Fourth Place

Students Name(s): Miguel A. Secillano

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

Title: Algorithmically Investing in an Index Fund

Third Place

Students Name(s): Maggie G. Byrne

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

Title: Cookie Calculations

Students Name(s): Rohan Dash

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

Title: Herd Immunity - Save the Community

Second Place

Students Name(s): Aiden Thuong Phipps

School: A.D. Henderson University School, **Region:** Palm Beach

Title: Does a Minecraft Stochastic Cellular Automaton Discrete Mathematical Infectious Disease Model Accurately Simulate Vaccination Efficacy and Disease Spread?

Students Name(s): Adam Gareeboo

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

Title: Effect of In-Game Cosmetics on Gameplay

First Place

Students Name(s): Dylan Michael Kiesling

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

Title: Florida Coast Wave Data Analysis to Assess the Optimal Locations for Shoreline Wave Energy Production



Junior

Microbiology

Recognition

Students Name(s): Lilyana M Wilsnack
School: Sebastian River Middle School, **Region:** Indian River
Title: Bacteria Be Gone

Students Name(s): Kathryn Conlan
School: Okaloosa STEMM Academy, **Region:** East Panhandle
Title: Warming Waters: The Effect on Oceans

Honorable Mention

Students Name(s): Chloe Manak
School: Maitland Middle School, **Region:** Dr. Nelson Ying Expo - Orange
Title: An Investigation of the Dirtiest Location in a Home

Fourth Place

Students Name(s): Kolbi Rhys Biggs
School: A.D. Henderson University School, **Region:** Palm Beach
Title: Can Image Analysis of The *E.coli* (K-12 strain) Inhibition Zone Quantify The Antibacterial Effects of Various Types of Honey?

Students Name(s): Jasmine Gharia
School: Stone Magnet Middle School, **Region:** Brevard: South
Title: Testing the Difference between Cleaning Wipes and Cleaning Sprays on *Staphylococcus epidermidis*

Third Place

Students Name(s): Daniel Park
School: Cypress Creek Middle School, **Region:** Pasco
Title: Sparkling Seas: The Effect of Copper Sulfate Amounts on the Light Output of Bioluminescent Pyrocystis Dinoflagellates

Second Place

Students Name(s): Swara Patel
School: Carrollwood Day School, **Region:** Hillsborough
Title: Multinutrient Biofortification of Microgreens Using Cyanobacteria Year 2

First Place

Students Name(s): Sean Kettering
School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal
Title: Shungite vs Carbon: Filter Your H2O

Grand Award Winner

Students Name(s): Sean Kettering
School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal
Title: Shungite vs Carbon: Filter Your H2O



Junior

Physics & Astronomy

Recognition

Students Name(s): William A Farrell
School: Andrew Jackson Middle School, **Region:** Brevard: Mainland
Title: Which Material Conducts the Most Heat Energy?

Students Name(s): Douglas I. Jett
School: Heritage Middle School, **Region:** Tomoka
Title: Does the Temperature of a Magnet Effect its Efficiency?

Students Name(s): Brenda Maciel
School: Lawton Chiles Middle School, **Region:** Seminole
Title: Weigh Your Methods Carefully: The Impacts of Weight Distribution within Vehicles

Honorable Mention

Students Name(s): Reagan M. Ursini
School: New Smyrna Beach Middle School, **Region:** Tomoka
Title: Does the Temperature of the Dryer Influence the Efficiency of Aluminum Foil Balls in Eliminating Static Electricity from Laundry?

Students Name(s): Matthew Grainger
School: West Shore Junior/Senior High School, **Region:** Brevard: South
Title: Weighing it on Maglev

Students Name(s): Utkarsh Yellamilli
School: Parkway Middle School, **Region:** Broward
Title: What Effect Does a Change in Voltage and Coils Have on the Magnetic Field of an Electromagnet?

Students Name(s): Brandon Brewer
School: Stewart Middle School, **Region:** Hillsborough
Title: James Webb and Hubble Space Telescope, Visible Light vs Infrared Light

Fourth Place

Students Name(s): Angeline Martinez
School: Ethel Koger Beckham K-8 Center, **Region:** South Florida
Title: Measuring Sugar Content in a Liquid with a Laser Pointer

Students Name(s): Madison A Chandler
School: Orange Park Junior High School, **Region:** Clay Rotary
Title: Touch The Sky

Students Name(s): Kai Loux
School: C. W. Ruckel Middle School, **Region:** East Panhandle
Title: Superconducting Supremacy

Students Name(s): Luke Rodgers
School: DeLaura Middle School, **Region:** Brevard: Intracoastal
Title: Will Launching Rockets from Higher Altitudes Allow the Rockets to Achieve a Greater Apogee?

Students Name(s): Elijah Gibson

School: Challenger K8 School of Science and Mathematics, **Region:** Hernando

Title: Driven by Power: The Effect of Engine Placement on the Average Speed of a Car

Third Place

Students Name(s): Andrew Poulos

School: Saint Cecelia Catholic School, **Region:** Pinellas

Title: How Does Changing the Angle of Fan Blades Affect Airflow?

Students Name(s): William Davis

School: Fruit Cove Middle School, **Region:** St. Johns

Title: Wind Tunnel Measurement: How Rocket Nosecone Shape Affects Drag Force

Students Name(s): Abby Cruz

School: Ridge Global Studies Academy, **Region:** Polk

Title: A Butterfly's Lift

Students Name(s): Thomas Eichten

School: Saint Francis Xavier Catholic School, **Region:** Thomas Alva Edison

Title: Duration of Movement with Decreased Air Pressure

Second Place

Students Name(s): Emmie B Kutter

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

Title: In a Galaxy Far, Far Away: Chandra Telescope X-Ray Data Converted into Images

Students Name(s): Sanya Ahmed

School: Indian Ridge Middle School, **Region:** Broward

Title: Increasing the Life of a Used Electric Vehicle (EV) Battery

First Place

Students Name(s): Mason Huffman

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

Title: Cooling with Acoustics



Junior

Plant Sciences

Recognition

Students Name(s): Iolanthe Cushman

School: Keystone Heights Elementary School, **Region:** Clay Rotary

Title: Biodome Basil

Students Name(s): Lonnah Wall

School: Herbert H. Hoover Middle School, **Region:** Brevard: Intracoastal

Title: Compost On Your Mind?

Students Name(s): Meikya Hills

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

Title: Fruit With a Side of DNA : Eat Your DNA

Honorable Mention

Students Name(s): Olivia Hodapp

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

Title: The Effects of Motor Oil on Plant Growth

Students Name(s): Mia Grousset

School: Saint Cecelia Catholic School, **Region:** Pinellas

Title: Does the Color of Light Affect a Plant's Germination?

Students Name(s): Aarush Balakrishnan

School: Jackson Heights Middle School, **Region:** Seminole

Title: Health Effects of Pesticides

Students Name(s): Kyrie Mcdaniel

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

Title: Humidity's Effects on Potato Longevity

Fourth Place

Students Name(s): Evan M Schneider

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

Title: Silver Seeds

Students Name(s): Camilo Fernandez

School: Pine Ridge Middle School, **Region:** Collier

Title: pH of Water vs the Average Growth of French Marigold Across 7 Days

Students Name(s): Shreyas Korimilli

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

Title: Magnetized Seeds?

Students Name(s): Jonaz Watson; Cyler Robinson

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

Title: Effect of Organic and Inorganic Amendments on Soil Sustainability as Indicated by Plant Growth and Soil Analysis

Students Name(s): Keerthi Karri

School: Orlando Science Middle Charter School, **Region:** Dr. Nelson Ying Expo - Orange

Title: A Different Route to Harvesting

Third Place

Students Name(s): Caitlin Anne Yaralli

School: A.D. Henderson University School, **Region:** Palm Beach

Title: Astrobotany on the Red Planet: Sunlight and Soil Nutrient Limiting Factors

Students Name(s): Alina Zaidi

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

Title: How Do Soluble Silicates Affect Insect Damage and Growth in Spinach, Green Beans, and Lettuce?

Students Name(s): Rose Aune

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

Title: Oh Man! Propagule Mass on Red Mangrove Growth

Students Name(s): Emma Jane Johnson

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

Title: Does the Application Method of Molasses Affect the Height of Watermelon *Citrullus lanatus* Plants?

Second Place

Students Name(s): Anika Bhandare

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

Title: Plants of the Red Planet

Students Name(s): Brady Williamson

School: Yearling Middle School, **Region:** Heartland

Title: Money In the Bag: Investigating the Effectiveness of Individual Tree Protectors vs Open Air Protection Against Huanglongbing In Two-Year Old Valencia Orange Trees

First Place

Students Name(s): Abby Solondz

School: Carwise Middle School, **Region:** Pinellas

Title: The Best Food for Carnivorous Plants



Senior

Animal Sciences

Recognition

Students Name(s): Kyle Edward Villalobos

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Utilizing *Neritina reclivata* Mucin as an Industrial Adhesive

Students Name(s): Caroline McHale

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

Title: Calcium in Lowering Levels of Serotonin in *Daphnia magna*

Students Name(s): Emma C. Bogue

School: South Sumter High School, **Region:** Big Springs

Title: Testing Effectiveness of Surfactants on Stable Foam Involved in Primary Ruminal Tympany

Honorable Mention

Students Name(s): Gabriele Rose Barrocas

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

Title: The Effect of Induced Oxidative Stress on Genetically Modified *Caenorhabditis elegans* with the Inclusion of a Mutated GLO-1 Gene

Students Name(s): Anabel Crisostomo Guerrero

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

Title: A Study on The Use *E. senticocus* and *W. somnifera* As a Means to Reduce Stress On *E. fetida* Caused By Elevated Salinity

Students Name(s): Roshna Mannuthoduvil

School: Tavares High School, **Region:** Lake

Title: Assessment of the Neurological Effects of Withania somnifera and resveratrol using a Drosophila model

Fourth Place

Students Name(s): Liliana Pilar Remillard

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

Title: The Effect of Cognition of Substrate Site on Trap Building in Myrmeleon Sp.

Students Name(s): Alex Warren

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

Title: Effect of Stressors on the Health of Soft Coral, *Xenia elongata*

Students Name(s): Melodi Diane Fugate

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

Title: The Effect of Microplastics Alone and in Combination with Neonicotinoids and Heavy Metals in *Apis mellifera* Using *Drosophila melanogaster* as a Model Organism

Third Place

Students Name(s): Sarita Thosteson

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

Title: Genetic Analysis of Solar Powered Sea Slugs

Students Name(s): Jenna Larson

School: Okeechobee High School, **Region:** Heartland

Title: Thermoregulation in Dairy Youngstock : Evaluating Thermotolerance of Holstein Heifers Sired by SLICK Bulls and Without the SLICK Gene: A Second Year Study

Students Name(s): Ashley Logan

School: Lakeland Christian School, **Region:** Polk

Title: Heavy Metal Levels in Gopher Tortoise Bone and Shell

Second Place

Students Name(s): Ella Pilacek

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

Title: Associating Floral Volatiles of the Endangered Clamshell Orchid (*Prosthechea cochleata*) with Food Reward in Honeybees (*Apis mellifera*) through Pavlovian Conditioning

Students Name(s): Varun Raj Madan

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

Title: Year 5: Developing a Novel Multiple Linear Regression Model To Optimize Honey Bee Gut Immunity Using a Lactic Acid Bacteria Probiotic Mixture

First Place

Students Name(s): Atreya Manaswi

School: Orlando Science Middle/ High Charter School, **Region:** Dr. Nelson Ying Expo - Orange

Title: Year III: The Development of a Novel Blend of Volatile Compounds Identified from Beer for Small Hive Beetle Treatment within Honey Bee Colonies



Senior

Behavioral & Social Sciences

Recognition

Students Name(s): Jamie B Tucker

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

Title: Frequency Specific Sound Therapy to Improve Performance on Standardized Tests

Students Name(s): Ellishah B. Jean-Francois

School: West Port High School, **Region:** Big Springs

Title: Enhancing the Educational Experience

Honorable Mention

Students Name(s): Grace C. Froehle

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

Title: Is There a Correlation Between Students' Cell Phone Screen Time and Stress Levels?

Fourth Place

Students Name(s): Sarah Park

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

Title: Spark Care+: Personalized Music Therapy Device Utilizing Artificial Intelligence Model

Students Name(s): Rushil Shah

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: Understanding and Creating an Equation on the Impact of Celebrity Endorsements and their Numerous Factors on the Growth of Alt-Coins

Third Place

Students Name(s): Sarah Rose Garfield

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

Title: The Effect of Virtual Learning on Student Long Term Self-Esteem

Second Place

Students Name(s): Malcolm Ernest Owusu

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

Title: Transgenerational Effects of the Synergy of Nicotine, Atomoxetine and Buspirone in Egg Laying Behaviors, Gene Expression, and Oxidative Stress Levels in *Caenorhabditis elegans*

First Place

Students Name(s): Junwei Tan

School: Lee Virtual School, **Region:** Thomas Alva Edison

Title: Addressing Barriers to Classroom Communication by Automating Student Educator Feedback Loops through a Novel Software-based Approach

Grand Award Winner

Students Name(s): Junwei Tan

School: Lee Virtual School, **Region:** Thomas Alva Edison

Title: Addressing Barriers to Classroom Communication by Automating Student Educator Feedback Loops through a Novel Software-based Approach



Senior

Biomedical & Health Sciences

Recognition

Students Name(s): Thanmay Kumar

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

Title: Novel Study of Role of Saliva in Fluoride Protection of Human Teeth Enamel Against Acidic Erosion in vitro

Students Name(s): Jackson Wolfe

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

Title: Cloning of Human PRSS1 Promotor for Pancreatic Specific Gene Therapy

Students Name(s): Kaitlyn Dunn

School: Tavares High School, **Region:** Lake

Title: The Effects of Connective Tissue Derivatives on Plant Tissue Strength

Students Name(s): Joshua Selvan

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

Title: Evaluate the Role of Mismatch Repair System in Causing Genomic Alterations in Glioblastoma

Honorable Mention

Students Name(s): Frederic Bowen

School: Sunlake High School, **Region:** Pasco

Title: Ante Mortem: Combating an Ibuprofen Overdose (Year Two)

Students Name(s): Cheyenne R. Shirley

School: South Sumter High School, **Region:** Big Springs

Title: To What Extent Does the L Form of Beta-Hydroxybutyrate have Unique Anti-cancer Effects Compared to the D Form, on U87 Brain Cancer Cells In Vitro?

Students Name(s): Harsh Mehta

School: F.W. Springstead High School, **Region:** Hernando

Title: Antioxidant Vitamins: A Possibility to Decrease Cancer, Cardiovascular and Neurodegenerative Diseases

Students Name(s): Bianka Albert

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: Detection of Benign and Malignant Lung Nodules in 3D Volumes Generated from Thoracic Computed Tomography Scans Leveraging Artificial Intelligence - Year 2

Fourth Place

Students Name(s): Vasundara Govindarajan

School: TERRA Environmental Research Institute, **Region:** South Florida

Title: ERVK3-1 as a Prognostic Marker for Invasive Ductal Carcinoma

Students Name(s): Luke Linxiao Yang

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

Title: Frequency Analysis of Wireless Neuronal Activation

Students Name(s): Emma Chirila

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

Title: Altering Metabolic Pathways To Override Drug Resistance in Cancer

Students Name(s): Jahnvi Kompella
School: Lecanto High School, **Region:** Citrus
Title: CRISPER: The Gene God

Students Name(s): Krithik Seela
School: Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Using Computational Models and Artificial Intelligence Graph Neural Networks to Repurpose Pre-existing Drugs and Analyze Drug Relationships: Year 2

Third Place

Students Name(s): Saachi Anika Mody
School: Florida Atlantic University High School, **Region:** Palm Beach
Title: The Effect of Heat Shock Proteins on *Drosophila* with Malignant Tumors

Students Name(s): Lara Gastelumendi
School: Medical Academy for Science and Technology, **Region:** South Florida
Title: Immunomodulatory Properties of Mesenchymal Stem Cells for Knee Osteoarthritis Prevention and Treatment

Students Name(s): Annalise Garrido
School: Westminster Christian School, **Region:** South Florida
Title: The Effect of Varying Concentrations of Artemisinin, Berberine, and Sulforaphane Upon Ocular Tumor Formation in *Drosophila melanogaster*

Students Name(s): James Cai
School: Miami Palmetto Senior High School, **Region:** South Florida
Title: Predicting Cancer Prognosis from Gene Expression Using Machine Learning

Second Place

Students Name(s): Tara Muthuswamy
School: American Heritage School of Boca/Delray, **Region:** Palm Beach
Title: Testing the Effects of Anti-DLL4 Monoclonal Antibody in Conjunction with Tamoxifen Hormone Therapy Treated Ovarian Cancer

Students Name(s): Kristi Biswas
School: Paxon School for Advanced Studies, **Region:** Northeast Florida
Title: Associations of Genetic SNPs with AD, Neuropathology, & Gene Expression Offers Novel Insight into AD

Students Name(s): Siddharth Chitta
School: Stanton College Preparatory School, **Region:** Northeast Florida
Title: Investigating the Role of WNK-1 Kinase in Glioblastoma Malignancy

First Place

Students Name(s): Akash Verma
School: Eastside High School, **Region:** Alachua
Title: Evaluating the Efficacy of Certain High Altitude Plant Extracts in the Strategies for Potential Chemoprevention - a Radio Chromic Film Colorimeter Guided Approach.

Students Name(s): Lara Kendall
School: Canterbury School, **Region:** Thomas Alva Edison
Title: Analyzing the Viability of Pure Mushroom-derived Chitosan as an Alternative to Pure Crustacean-derived Chitosan in Hemostatic Agents

Grand Award Winner

Students Name(s): Lara Kendall
School: Canterbury School, **Region:** Thomas Alva Edison
Title: Analyzing the Viability of Pure Mushroom-derived Chitosan as an Alternative to Pure Crustacean-derived Chitosan in Hemostatic Agents

Senior Cellular/Molecular Biology & Biochemistry

Recognition

Students Name(s): Kevin Toledo; Harmanpreet Kaur; Miguel Javiel
School: Medical Academy for Science and Technology, **Region:** South Florida
Title: Differentially Expressed Genes and Biological Pathways Involved in PTSD Development

Students Name(s): Cemre Kayisli
School: Wiregrass Ranch High School, **Region:** Pasco
Title: BMP4 Prevents Thrombin-Induced Inflammation and Vascular Damage of Endothelial Cells

Students Name(s): Shiv Pareshkumar Patel
School: Maclay School, **Region:** Capital
Title: Characterization of Lung Cancer Mechanosensation

Honorable Mention

Students Name(s): Matthew David Kidd
School: American Heritage School of Boca/Delray, **Region:** Palm Beach
Title: Recombinant Expression of Pancreas-Specific Aquaporin-12 in *Saccharomyces cerevisiae* Combined with Molecular Dynamics Simulations to Characterize the Channels Permeability to Hydrogen Peroxide

Students Name(s): James J Zhang
School: Lawton Chiles High School, **Region:** Capital
Title: Tagging Core and Selective Autophagy Proteins to Visualize the Colocalization of Autophagy Machinery with Mutant Huntingtin Inclusion Bodies

Students Name(s): Natalie Barendse
School: Southeast High School, **Region:** Manatee STEM Competition
Title: Rising to the Challenge

Fourth Place

Students Name(s): Neil Reddy
School: Satellite High School, **Region:** Brevard: Intracoastal
Title: Customized Cancer Cell Weapons: Using CRISPR Cas9 Genetic Engineering and Human Adipose-derived Mesenchymal Stem Cells to Overcome Platinum-based Chemotherapy Resistance in OVCAR-3 Human Ovarian Cancer Cells Year 4

Students Name(s): Anouska Seal
School: Paul J. Hagerty High School, **Region:** Seminole
Title: A Novel Approach to Bone Implant Infection Therapeutics Leveraging Proteins Derived from Lactobacillus and Modulating Anti-inflammatory Gene Expression

Students Name(s): Emily Dorairaj
School: Ponte Vedra High School, **Region:** St. Johns
Title: Unraveling the Link between the Enzymatic and Intracellular Signaling Properties of CD38 in Malignant B-cells

Students Name(s): Amarachukwu Chimamanda Okpala
School: American Heritage School, Plantation, **Region:** Broward
Title: Downregulation of Triadin as a Potential Treatment for Catecholaminergic Polymorphic Ventricular Tachycardia

Students Name(s): Michelle Barnes

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

Title: A Novel Approach to the Comparative Analysis of Natural Polymer-based Biomimetic Neural Scaffolds: Using the Taxic Response of Fungal Mycelium to Model Cell Response and Repair in Peripheral Nerve Gap Injuries such as the Medulla Spinalis in Paraplegics (2nd Year Study)

Third Place

Students Name(s): Andrew Liu

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

Title: Developing Anti-CLL-1 and MSLN Immunogens for CAR-T Cell Therapeutic Treatment of AML

Students Name(s): Jessica Watkins

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

Title: A Multi-approached Transcriptome Analysis of Autism Spectrum Disorder, Schizophrenia and Bipolar Disorder

Students Name(s): Anjani Sharma

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: Antimicrobial Peptide as Next Generation Therapeutic Agents

Students Name(s): Leah Ellison

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

Title: Assessing the Influence of TOMM40-523' Enhancer Length on APOE 3 Expression in Alzheimers Disease

Second Place

Students Name(s): Tom Commander

School: Episcopal High School, **Region:** Northeast Florida

Title: Analyzing the CD44-targeting Capabilities of Chitosan-coated Iron Oxide Nanoparticles in GBM

Students Name(s): Angela Huang

School: Sebring High School, **Region:** Heartland

Title: *Fusobacterium nucleatum* as a Marker for Epithelial to Mesenchymal Transition in Colorectal Cancer

First Place

Students Name(s): Anne Fang

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

Title: Developing a Molecular Scale DNA Nanochip for Educational Purposes: Phase III



Senior

Chemistry

Recognition

Students Name(s): Mary Clare Stinneford

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

Title: Levels of BPA and Styrene Caused by Microwaving Water in Different Containers

Students Name(s): Anna Velten

School: Okeechobee High School, **Region:** Heartland

Title: The Effects of Dissolving Polystyrene with D-Limonene on the pH of Seawater: A Fifth Year Study

Students Name(s): Zane Carter

School: International Baccalaureate East, **Region:** Polk

Title: An Evaluation of the Performance of Post-use Firefighter Turnout Gear Using NFPA Standards

Honorable Mention

Students Name(s): Christian Rios

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

Title: Effects of Herbicide on the Rate of Dissolution of Limestone Specimens

Students Name(s): Alice Zhang

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

Title: Alternative Energy: Producing Hydrogen from Water Using Solar Energy

Students Name(s): Meghana Konda

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

Title: Study of Magnesium Based Migraine Therapeutics

Fourth Place

Students Name(s): Jaynie Geraldine Curzi

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

Title: The Effect of Mercury Intake Through Mascara Application On The Thyroid Gland

Students Name(s): Cayley J McCloskey

School: Lely High School, **Region:** Collier

Title: Comparing the Enthalpy Changes of Anhydrous Salts Using Calorimetry

Students Name(s): Jordan K. Riche

School: Wildwood Middle High School, **Region:** Big Springs

Title: Effectiveness of Using Worms to Biodegrade Plastic

Students Name(s): Alexander Kaufman

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

Title: Energy Content of Various Fungi Species for Use in Biofuels

Students Name(s): Arvid Vaidyanathan

School: Winter Springs High School, **Region:** Seminole

Title: On Demand Oxygen in a Bottle for Medical Emergency Use: Prototype and Kinetics

Third Place

Students Name(s): Seymour Mahdi Haque

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Molecular Dynamics Simulations Of PLK-Small Receptor Binding

Students Name(s): Sean Ramsey

School: Episcopal High School, **Region:** Northeast Florida

Title: Improving the Structural Strength of Martian Concrete with Molten Sulfur Binder

Students Name(s): Kyra Henriques

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

Title: Analysis of Microplastic Removal Efficiency of Synthesized Ferrofluids and Development of an Automated Prototype for Aquatic Environments

Students Name(s): Sanjana Umesh Bhatt

School: Cypress Bay High School, **Region:** Broward

Title: A Novel Approach for Wastewater Treatment Utilizing Adsorbent Enhanced Biosand Filtration

Second Place

Students Name(s): Laya Damaraju

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: The Effectiveness of Porous Photothermal Sepiida Ink Nanoparticles for Osteosarcoma Treatment

Students Name(s): Calvin Thomas Mathew

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

Title: Developing Novel Plant Waste-Based Hydrogels for Skin Regeneration and Infection Detection in Diabetic Wounds

First Place

Students Name(s): Nolan Chen Wen

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

Title: Development and Characterization of a Novel Laponite-Enhanced Tannic-Acid-Based Hydrogel

Grand Award Winner

Students Name(s): Nolan Chen Wen

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

Title: Development and Characterization of a Novel Laponite-Enhanced Tannic-Acid-Based Hydrogel



Senior

Earth & Environmental Sciences

Recognition

Students Name(s): Katlyn Paul

School: North Bay Haven Charter, **Region:** Havens

Title: The Effect of Solar Panels on the Atmospheric Temperature of Earth When Installed on Black Roofs

Students Name(s): Laina Canary

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

Title: Do the Extraction Methods of Plastic Mulch Affect the Amount of Microplastics in the Soil?

Students Name(s): Caleb Raines

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

Title: The Effects of Water Hardness, pH, and Nitrate Leaching on Net Primary Productivity in Aquatic Environments

Students Name(s): Skylar Woods

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

Title: The Effect of Light Source on the Behavior of *Daphnia magna*

Honorable Mention

Students Name(s): Braelynn G Smith

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

Title: The Effects of Nitrogen, Potassium, and Phosphorus on Algae

Students Name(s): Amanda Proctor

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

Title: A Novel Study of Phytic Acid Reduction through a Use of Fermentation, Germination, and Soaking in Vinegar in *Hordeum vulgare*

Students Name(s): Samantha Lange

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

Title: Survivability of *Crassostrea virginica* Larvae at Elevated Temperatures Due to Anticipated Changes in Climate in the Indian River Lagoon

Students Name(s): Nicholas Cox; Rylee Mulhollen

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

Title: How Do Different Concentrations of Glyphosate Affect Phytoplankton Populations and How Effective Will a Granular Activated Carbon (GAC) Absorption Filtration Test Be at Removing Glyphosate from an Herbicide to Protect Phytoplankton Populations?

Fourth Place

Students Name(s): Shelly Ballaish

School: Spanish River Community High School, **Region:** Palm Beach

Title: The Effect of Water Levels on *Danio rerio* Reproductive Fitness and Embryonic Development

Students Name(s): Katelynn Paciorek

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

Title: Study on the Effects of Polyvinyl Chloride (PVC) Water Contamination on the Oxygen Production Levels of *Elodea densa* (Aquatic Elodea Plant)

Students Name(s): Keira Fedotov; Charles LaBrant

School: Indian Rocks Christian School, **Region:** Pinellas

Title: Saturation of CO₂ Sequestration

Students Name(s): Ava Auter

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: The Impact of Enhanced Oceanic Inflow on Muck Accumulation in the Indian River Lagoon

Students Name(s): Jackson Crook

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

Title: Effects of Pollutants on Aquatic Plant Species and Water Quality

Students Name(s): Celine Yacoub

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

Title: The Effects of Air and Water Pollutants on the Development of Myelination Using *Danio rerio* Embryos as a Model Organism

Third Place

Students Name(s): Tejasvi Chengala Kari

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

Title: The Effect of Magnetic Carbon Nanotubes on the Oil Degrading Ability, Vitality, and Gene Mutations of *A. borkumensis*

Students Name(s): Sunny You

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

Title: Predicting Future Tropical Cyclone Intensity Using a Convolutional Neural Network

Students Name(s): Alynza I. McBride

School: South Sumter High School, **Region:** Big Springs

Title: Are Tree Rings Affected in Wetlands Impacted by Groundwater Withdrawals?

Students Name(s): Emir Sami Sahin

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

Title: Predicting the Intensity of Blocking Events Using Machine and Deep Learning

Students Name(s): Suchi Patel

School: Middleton High School, **Region:** Hillsborough

Title: Utilizing Microalgae Free Cells to Combat *Dinoflagellate Karenia brevis* Algae Blooms

Second Place

Students Name(s): Ahmed T. Eldeeb

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

Title: Year 2: Testing the Efficiency of the Novel Model of Biodegradable Magnetic Nanoparticles for the Removal of Homosalate-Infused Microbeads to Prevent the Harm of Aquatic Life

Students Name(s): Morgan Barnes

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

Title: Engineering a biomimetic system that maximizes surface area exposure to water flow thereby increasing the rate of bioremediation in an in-vitro hypereutrophic system (A Novel Fourth Year Study)

Students Name(s): Khushi Mathur

School: Brooks DeBartolo Collegiate High School, **Region:** Hillsborough

Title: Soda Lime: A Solution to Global Warming?

First Place

Students Name(s): Claire Huang

School: Episcopal High School, **Region:** Northeast Florida

Title: The Energy Generation Efficiency and Storage Capability of a Novel Dye-Sensitized Solar Cell

Students Name(s): Ryan Napoleon

School: Episcopal High School, **Region:** Northeast Florida

Title: Use of Plasmids for the Trophic Conversion of *P. tricornutum* for Prevention of Eutrophication



Senior

Engineering

Recognition

Students Name(s): Deeksha Kumaresh

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

Title: A Novel Application of Artificial Intelligence and Microfluidics for the Development of a Cost-effective and Non-invasive Point of Care Tool for Parkinson's Disease Diagnosis

Students Name(s): Aneesh Sattiraju

School: Creekside High School, **Region:** St. Johns

Title: Flow Pattern Alterations to Optimize Efficiency of the Tesla Valve

Students Name(s): Matthew R. Corbett

School: Saint Thomas Aquinas High School, **Region:** Broward

Title: Increasing Electromagnetic Coil Field Strength Through Layering and Material Composition

Honorable Mention

Students Name(s): Benjamin Joseph

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

Title: A Prototype for a Motorized Backpack for Students with Muscular Dystrophy

Students Name(s): Sara Lillian Kaufman

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

Title: Using Thermochromic Crystals to Identify Intravenous Infiltration

Students Name(s): Caroline Guerra

School: Community School of Naples, **Region:** Thomas Alva Edison

Title: Bioplastics from Banana Peels

Fourth Place

Students Name(s): Jake Houd

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

Title: Using Nerve Impulses to Manipulate a Prosthetic; Increase Mobility for Individual Digits

Students Name(s): Avery Blalock

School: Episcopal High School, **Region:** Northeast Florida

Title: Improving the Regression Rate of a Hybrid Rocket Engine through Modifications of the Fuel Geometry

Students Name(s): Antonio Valentino

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

Title: Conquering Concrete- Year IV

Third Place

Students Name(s): Ana Garcia

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

Title: Smooth Sailing: The Effect of Humpback Whale Tubercles on The Hydrodynamics of Sailboats

Students Name(s): Banmeet Singh

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

Title: White Cane Object Detector For Improved Safety of Visually Impaired Individuals

Students Name(s): Pranav Ponnusamy

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: 3rdEye: An Affordable Safety Alert System for Drowsy Drivers

Second Place

Students Name(s): Cooper Andrew Weisman

School: Alexander W. Dreyfoos School of the Arts, **Region:** Palm Beach

Title: Creation of an Artificial Atmosphere at Orbital Altitudes to Combat Space Debris

Students Name(s): Vivek Sandrapaty

School: West Port High School, **Region:** Big Springs

Title: Remote Detection System for Penetrative Bodily Injury Using an Innovative Electrical Engineering Enhancement of Wearable Fabric

First Place

Students Name(s): Robert Sansone

School: Fort Pierce Central High School, **Region:** St. Lucie

Title: Investigating the Performance of a Novel Synchronous Reluctance Electrical Design

Grand Award Winner

Students Name(s): Robert Sansone

School: Fort Pierce Central High School, **Region:** St. Lucie

Title: Investigating the Performance of a Novel Synchronous Reluctance Electrical Design



Senior

Environmental Engineering

Recognition

Students Name(s): Stella Tucker
School: J. W. Mitchell High School, **Region:** Pasco
Title: Salinity, Clay Flocculation, and Red Tide Mitigation

Students Name(s): Avery K Crawford
School: Ridgeview High School, **Region:** Clay Rotary
Title: A Study into the Absorbency of Fruit Peel Pods

Honorable Mention

Students Name(s): Sabina Khizroev
School: Miami Palmetto Senior High School, **Region:** South Florida
Title: Collecting Tire and Road Wear Particulates Using Magnets

Students Name(s): Ethan David Kermis
School: Saint Thomas Aquinas High School, **Region:** Broward
Title: An Energy Efficient Desalination System Based on the Mangrove Transpiration Stream

Fourth Place

Students Name(s): Isabella Catalina Lackner
School: Florida Atlantic University High School, **Region:** Palm Beach
Title: Using Machine Learning to Determine the Presence and Abundance of Microplastics in Sea Turtle Nesting Beaches has an Impact on Gender Ratios

Students Name(s): Zoe Orange
School: Paxton High School, **Region:** East Panhandle
Title: Not Your Average Soil

Third Place

Students Name(s): Jacob Lavra
School: Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal
Title: Efficacy of Rapidly Cooling Sea Surface Temperatures (SST) for Short and Extended Intervals

Students Name(s): Sydney Feldbush
School: West Shore Junior/Senior High School, **Region:** Brevard: South
Title: Optimizing the Energy Output of Dye-Sensitized Solar Cells

Students Name(s): Isabel Liu
School: Dunbar High School, **Region:** Thomas Alva Edison
Title: Mimicking Photosynthesis: Which Dye Is the Best?

Second Place

Students Name(s): Angela Gao
School: Buchholz High School, **Region:** Alachua
Title: Recovering Phosphorus from Wastewater as Fertilizer Using Biochar Enabled Methods

Students Name(s): Lene Jean Mortimer

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

Title: Precycling - Novel Strategies for Dealing with Household Plastic Recycling: Year 3

First Place

Students Name(s): Ishika Nag

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

Title: Development of an Engineered Face Mask with Optimized Nanoparticle Layering for Filtration of Air Pollutants and Viral Pathogens

Grand Award Winner

Students Name(s): Ishika Nag

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

Title: Development of an Engineered Face Mask with Optimized Nanoparticle Layering for Filtration of Air Pollutants and Viral Pathogens



Senior Intelligent Machines, Robotics, & Systems Software

Recognition

Students Name(s): Angelina Ning

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

Title: A Deep Learning Approach for Invasive Lobular Breast Cancer Classification Using Gene Expression

Students Name(s): Aurora Mendenhall

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

Title: Sweet Sixteen: Taking Control

Students Name(s): Phillip Lavrador

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

Title: Real-Time Weapon Detection Using Convolutional Neural Network-Based Computer Vision to Aid in the Quick Response to and Prevention of Tragedies

Honorable Mention

Students Name(s): Bhaveshsai Gangula Reddy

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

Title: Early Detection of Lung Cancer Using an Array of Machine Learning Algorithms

Students Name(s): Aum Dhruv; Nicholas Harty

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

Title: Comparing the Efficiency of Novel Point of Care Approaches to Identifying Specific Stages of Diabetic Retinopathy through the Use of Low-Cost Neural Networks and Deep Learning Solutions (2nd Year Study)

Students Name(s): Rudra Patel

School: Middleton High School, **Region:** Hillsborough

Title: A Novel Approach to Analyzing Alzheimer's Disease in MRI Scans Using a Computational Neural Network

Fourth Place

Students Name(s): Michael Charles Sarullo

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

Title: Using Convolutional Neural Networks to Predict the Presence of MGMT Promoter Methylation in Glioblastoma

Students Name(s): Emma Lee; Eric Lee

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

Title: Simulating Astronautic Information Transfer through the Implementation of Optical Laser Technology

Students Name(s): Henry Jiang

School: North Bay Haven Charter, **Region:** Havens

Title: Automated Intersection Management for Self-Driving Vehicles with Q-Learning

Students Name(s): Danush Kumar Singla

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

Title: Novel AI Algorithms for Better Segmentation of Prostate MRI Scans towards an Improved Prostate Cancer Management

Third Place

Students Name(s): Lucas S Knutsen
School: Clay High School, **Region:** Clay Rotary
Title: Lending a Hand

Students Name(s): George Delong
School: Episcopal High School, **Region:** Northeast Florida
Title: An improved Robotic Hand Design Using Dynamic Gear Systems and a Novel Prosthetic Control System

Students Name(s): Ayah Saleh
School: West Shore Junior/Senior High School, **Region:** Brevard: South
Title: Machine vs. Human: Recognizing Emotions In Speech Using Neural Networks

Second Place

Students Name(s): Lavanya S Natarajan
School: Viera High School, **Region:** Brevard: Mainland
Title: Landfill SCADA System: A Next-Gen Prescriptive Lot Solution Engineered to Detect, Transmit, and Mitigate Fugitive Methane Emissions via a Long-Range Supervisory Control and Data Acquisition System (Year 3)

Students Name(s): Christopher Rosario
School: Lakeland Christian School, **Region:** Polk
Title: Quadcopter Drone Dynamics Using Tilted Rotor Angles

First Place

Students Name(s): Tiffani Rai Gay
School: Orlando Science High Charter School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Designing a LiDAR Topographic Navigation System: A Novel Approach to Aid the Visually Impaired

Grand Award Winner

Students Name(s): Tiffani Rai Gay
School: Orlando Science High Charter School, **Region:** Dr. Nelson Ying Expo - Orange
Title: Designing a LiDAR Topographic Navigation System: A Novel Approach to Aid the Visually Impaired



Senior

Mathematics & Computational Sciences

Recognition

Students Name(s): Viraj Singh

School: South Fork High School, **Region:** Martin

Title: A Mathematical Approach to Cryptography Using Laplace Transform and Taylor Series and its Vulnerabilities

Students Name(s): Luke Xue

School: Buchholz High School, **Region:** Alachua

Title: Observing the Impacts of the COVID 19 Lockdown on Premier League Team Performance

Students Name(s): Maya Chandar

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

Title: Developing an Algorithm to Analyze Structural Characteristics of Alzheimer's Disease in Different Stages of Mild Cognitive Impairment and Validate White Matter Atrophy as an Early Predictor of Mild Cognitive Impairment (2nd Year Study)

Honorable Mention

Students Name(s): Jason R Whitson

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

Title: Future Celestial Body Colonization (Year 3)

Students Name(s): Peter Frometa

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

Title: Can High School Baseball Players Optimize Their College Recruiting By Analyzing Their Athletic Metrics?

Students Name(s): Bisrat Kassahun

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

Title: Constructing a Neural Network to Detect Early Lung Cancer

Fourth Place

Students Name(s): Ayush Vasu Gowda

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Strategic Energy and Time Management Optimization for a Cross Country Solar Car Trip

Students Name(s): Grace Williams

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

Title: Using Principles of the Lorenz Energy Cycle to Estimate Kinetic Energy in Studies of Greenhouse Gases

Students Name(s): William Rosenberg

School: Episcopal High School, **Region:** Northeast Florida

Title: Computer Program to Identify and Record Gene Clusters in Phage Genomes

Students Name(s): Shaurnav Kumar Ghosh

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

Title: Using an Information-Maximizing Generative Adversarial Network to Investigate the Growth of Multiple Sclerosis Lesions

Third Place

Students Name(s): Emma L Carpenter
School: Viera High School, **Region:** Brevard: Mainland
Title: Lissajous Curves from Chaos

Students Name(s): Matthew Okashita
School: Wiregrass Ranch High School, **Region:** Pasco
Title: LineSpike: A Topological Data Analysis Framework on Time Series Spikiness

Students Name(s): Noah Bryan Jenkins
School: St. Cloud High School, **Region:** Osceola
Title: Using the GARCH Family of Volatility Forecasting Models for the Valuation of Options via the Black-Scholes Options Pricing Model

Second Place

Students Name(s): Colin J. Briggs
School: Gulf Coast High School, **Region:** Collier
Title: Improving the Efficiency of Passwordless Authentication

Students Name(s): Izabelle Young
School: Bishop Kenny High School, **Region:** Northeast Florida
Title: Utilizing Mycelial Network Electrical Makeup to Communicate Data

First Place

Students Name(s): Emilie Steinberg
School: Dr. Michael M. Krop High School, **Region:** South Florida
Title: Utilizing Convergence Tests and Complex Analysis to Re-define the Provability of the Partition Formula



Senior

Microbiology

Recognition

Students Name(s): Kadie M. Mariano

School: Wildwood Middle High School, **Region:** Big Springs

Title: That's Gotta Sting! The of Honey, MEDlhoney and Neosporin on Bacteria

Students Name(s): Michael Kachergus

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

Title: Synergistic Antibacterial Effects of Metallic Nanoparticles & Antibiotics on *E. coli* & *S. epidermis*

Students Name(s): Nandini Karanam

School: Lecanto High School, **Region:** Citrus

Title: The Efficacy of Persimmon Calyx on Bacteria

Honorable Mention

Students Name(s): Elizabeth C DeSchouwer

School: Vero Beach High School, **Region:** Indian River

Title: Impact of Medium Transfer Time on Electroporation of *E. coli* HB101

Students Name(s): Kaitlyn Jean Urruela

School: Saint Thomas Aquinas High School, **Region:** Broward

Title: Biodegradation of PLA Plastic with *Amycolatopsis mediterranei*

Students Name(s): Madison Adkins

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

Title: How Do Endophytic Bacteria from Mango Affect the Growth of Fungus?

Fourth Place

Students Name(s): Denee M Lichtenberg

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

Title: The Use of Plant Extracts as Antibiotics to Inhibit Bacterial Growth

Students Name(s): Raven Pascua

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

Title: The Development of an Effective Antibiotic Treatment to Limit the Growth of *Staphylococcus epidermidis* on Arthroplasties

Students Name(s): Katelyn Fry

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

Title: Life on Mars: An Archaeal Extremophile (*Haloferax volcanii*) and its Ability to Survive on Mars Global Simulant Soil MGS-1 with Potential to Promote Plant Growth

Students Name(s): Amaya Etcheverry

School: Community School of Naples, **Region:** Thomas Alva Edison

Title: Phytoplankton in Air Purification: Utilizing Novel Treatment Strategies to Improve Air Quality while Producing a Reliable in Nutrient Supplement Using Coconut Husk and Charcoal with *Chlorella vulgaris* and *Spirulina Major*

Third Place

Students Name(s): Chloe Barreto-Massad

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

Title: An Investigation of the Effects of Aerobic and Anaerobic Environments on Antibiotics Produced by Soil Bacteria

Students Name(s): Kaylee Jordan

School: West Shore Junior/Senior High School, **Region:** Brevard: South

Title: Phage-Derived Endolysin Treatment for Community Associated Epidermal Infections

Students Name(s): Naina Aggarwal

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

Title: Determining the Presence of Magnetotactic Bacteria in Honeybees

Second Place

Students Name(s): Satviki Singh

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Biodegradable Chitosan-Silver Hydrogel As A Delivery Mechanism for Cyclic Lipopeptide-4

Students Name(s): Om D Patel

School: Eau Gallie High School, **Region:** Brevard: Mainland

Title: Utilizing Glycolysis in Streptococcus pyogenes to Model Gastrointestinal Stromal Tumors (GIST) in Response to Endogenous Stimulus-Powered Nanoreactors (Year 6)

First Place

Students Name(s): Shloke Patel

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

Title: Developing a Monomolecular Model to Describe the Disease Progress Curve

Grand Award Winner

Students Name(s): Shloke Patel

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

Title: Developing a Monomolecular Model to Describe the Disease Progress Curve



Senior

Physics & Astronomy

Recognition

Students Name(s): Melanie Staples

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

Title: The Effect of Temperature on the Volume of Different Frequency Sounds through Different Densities

Students Name(s): Adeline Berte'

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

Title: Enlightening Spy Techniques

Students Name(s): Alexia King

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

Title: Water 'bout Density?

Honorable Mention

Students Name(s): Paula A Aguirre Gonzalez

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

Title: Gravitational Influence on Planetesimal Formation from Protoplanetary Disks

Students Name(s): Jack Wardlaw

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

Title: Walk the Planck!: Measuring Planck's Constant Using LED Lights

Students Name(s): Cara Annette Mortimer

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

Title: Linearization of a Stretchable Resistance Sensor

Fourth Place

Students Name(s): Ruby Lily Aubin

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: RUBES: Resonators Used in Building Emergency Sensors

Students Name(s): James W Egdorf

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

Title: Newfound Electricity Source: The Epic of the Triboelectric Nanogenerators (Year 3)

Students Name(s): Braden M Miller

School: Barron Collier High School, **Region:** Collier

Title: Effect of Putting Stroke and Ball Roll Characteristics on Putting Accuracy

Students Name(s): Austin R. Walker

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

Title: Does the Composition of Different Welding Wires Affect the Strength of a MiG Weld?

Third Place

Students Name(s): Nicholas Anthony Ostheimer

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Maximizing Ducted Propeller Efficiency by Optimizing Entrance-to-Exit Ratios through Computational Fluid Dynamics

Students Name(s): Sagar R Bhat

School: James S. Rickards High School, **Region:** Capital

Title: Quantum Mechanics and Their Effect on Macroscopic Objects

Students Name(s): Matthew Salek

School: Episcopal High School, **Region:** Northeast Florida

Title: Controlled Plasma in a Magnetic Field

Second Place

Students Name(s): Annika Vaidyanathan

School: Winter Springs High School, **Region:** Seminole

Title: Dynamic Contact Angle Measurements of Superhydrophobicity in Face Masks to Minimize Exposure to COVID-19 (Year 3: Lab-to-Market)

Students Name(s): Sammy Habboub

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

Title: Synthesizing Indium Doped ZnO Nanowires with Piezoelectric Properties to Produce Voltage in Response Under a Compressive Load

First Place

Students Name(s): Aleksander Sobik

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

Title: The Relationship between Droplet Movement and Cyclical Stress: Using the Leidenfrost Effect to Determine Fatigue in Concrete



Senior

Plant Sciences

Recognition

Students Name(s): Dikembai Woodfill

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

Title: Effects of Iron (II, III) Oxide Particle Movement on Cellular Damage in *Allium Cepa* (Onion Bulbs)

Students Name(s): Courtney Atkins

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

Title: Testing the Antimicrobial Properties of *Bryophyllum pinnatum* Utilizing Alcohol Extractions

Students Name(s): Jeffrey Wang

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

Title: The Effect of pH Reduction on the Growth of Brazilian Waterweed and Aquatic Organisms

Honorable Mention

Students Name(s): Patricia Yu

School: Florida Atlantic University High School, **Region:** Palm Beach

Title: Comparison of the Contact Angles of *Euphorbia cytaphora*, *Salvinia minima*, and *Alocasia macrorrhiza*

Students Name(s): Ariana Zarazua-Benitez

School: Wildwood Middle High School, **Region:** Big Springs

Title: Hydroponics: What Method of Hydroponics Would Increase the Growth Rate of a Lettuce Plant

Students Name(s): Nina Bowen

School: Key West High School, **Region:** Monroe

Title: The Effect of Airation on Agricultural Runoff

Fourth Place

Students Name(s): Nira Goyal

School: Martin County High School, **Region:** Martin

Title: Plastic Mulch and Organic Amendments- Can They Help Us Control Nutsedge?

Students Name(s): Jacob Friedman

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

Title: Examining the Effect of Simulation of Varied Microplastic Types on *Rhizophora mangle*

Students Name(s): Kalash Patel

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

Title: The Effect of Surface Wettability on Contact Angles and Pesticide Deposition Across Multiple Plant Surfaces

Students Name(s): Connor McLoughlin

School: Lakeland Christian School, **Region:** Polk

Title: Dodder Dichotomy: Investigating the Mutual Changes Between *Cuscuta gronovii* and Its Separate Hosts

Third Place

Students Name(s): Mary C Reed

School: Ridgeview High School, **Region:** Clay Rotary

Title: How Does Nitrate Absorption Differ Between the *Rhizophora mangle*, *Laguncularia racemosa*, and *Avicennia germinans* Over a 48 Hour Period?

Students Name(s): Matthew Schinsing

School: Episcopal High School, **Region:** Northeast Florida

Title: Effect of Protein Hydrolysates on Plant Growth and Quality

Students Name(s): Bryce Krohnfeldt

School: Estero High School, **Region:** Thomas Alva Edison

Title: The Creation and Sustainability of a Symbiotic Atmosphere in Relation to Surface Area

Second Place

Students Name(s): Samantha Shackton

School: Countryside High School, **Region:** Pinellas

Title: Hydroponically Grown Basil

Students Name(s): Ella Baum

School: Indian Rocks Christian School, **Region:** Pinellas

Title: Determining the Mortality Rate of Aphids on Milkweed Using Cordyceps Militararis Spray

First Place

Students Name(s): Erin Gaydar

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

Title: Abolition of Unfurling Nutrients is the Solution for Elimination of Chlorophytes in the Indian River Lagoon (Year III)

Grand Award Winner

Students Name(s): Erin Gaydar

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

Title: Abolition of Unfurling Nutrients is the Solution for Elimination of Chlorophytes in the Indian River Lagoon (Year III)
