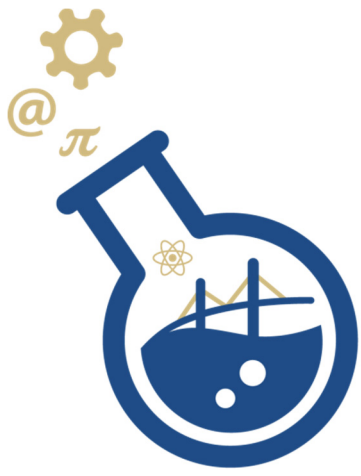
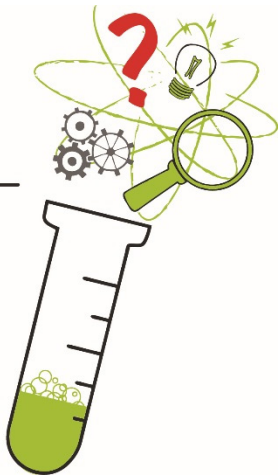


# 2018 Hillsborough Regional STEM Fair

## Secondary Awards

**Hillsborough Regional**  
science, technology,  
engineering &  
mathematics fair



**TAMPA BAY**  
**STEM**  
**NETWORK**

# Junior Animal Sciences Award

Skye Spurlock

Buchanan Middle School

---

**Title:** Squirrel Age Detection Algorithm

**Place:** **Second Place**

Shloke Patel

Carrollwood Day School

---

**Title:** Psyllid Repelling Activity of Essential Oils and Calibration of Concentration of Essential Oils

**Place:** **First Place**

## Senior Animal Sciences Award

Mohammad Qasem

Wharton High School

---

**Title:** Betta fish Breeding Behavior

Place: **Third Place**

Ben Sarat

Wharton High School

---

**Title:** Solenopsis invicta Wildlife Survey

Place: **Second Place**

Kurt Rodriguez

Plant High School

---

**Title:** PESTilence: The Effects of Nuts on Aedes aegypti Mosquitoes

Place: **First Place**

## Junior Behavioral & Social Sciences Award

Jake Dostal

Turner/Bartels K8

---

**Title:** Manual Mayhem

Place: **Third Place**

Emilie Park

Stewart Middle Magnet

---

**Title:** Stroop Effect

Place: **Second Place**

Erin Soko

Liberty Middle School

---

**Title:** Spot On Fouettés!

Place: **First Place**

## Senior Behavioral & Social Sciences Award

Ruchi Korde & Brianna Schroeder

Middleton High School

---

**Title:** How does Age Change One's Perception of Images?

Place: **Third Place**

Saketh Katta

Strawberry Crest High School

---

**Title:** Optimization of Pathophysiological Databases for Enhanced User Experience

Place: **Second Place**

Jenna Farnum

Durant High School

---

**Title:** Food Additives for Thought: The effect of food dye on memory

Place: **First Place**

# Junior Biomedical & Health Sciences Award

Jayant Maheshwari

Williams Middle Magnet

---

**Title:** Do Obese Individuals Have More Absorptive Surface Area in Their Intestines?

Place: **Third Place**

Allison Afiat

Liberty Middle School

---

**Title:** It's all About that Date

Place: **Second Place**

Rohit Ramaswamy

Farnell Middle School

---

**Title:** Predicting Peripheral Neuropathy with Programmable Footwear

Place: **Second Place**

Zachary Bischof

Williams Middle Magnet

---

**Title:** Are Slushees Really bad for you? Effect of Food Dyes on Planaria Regeneration and Cancer

Place: **First Place**

# Senior Biomedical & Health Sciences Award

Jessica Cao

Freedom High School

---

**Title:** The Effects of Aluminum on Beta Amyloid Aggregation

Place: **Third Place**

Cameron Cornett

Strawberry Crest High School

---

**Title:** What Type of Milk Provides the Greatest Casein Protein Content to Benefit the Human Body?

Place: **Second Place**

Milin Kurup

Robinson High School

---

**Title:** Effect of Protein Kinase Inhibitor on Tau Hyperphosphorylation as TBI Cell-Based Model

Place: **First Place**

# Junior Chemistry Award

Kirtavia Mcleod

Beth Shields Middle School

---

**Title:** Which Teacup Holds Heat the Longest?

Place: **Third Place**

Lauren Smith

Independence Academy

---

**Title:** Bubble Bath Bombs

Place: **Third Place**

Payton McLauchlin

Kids Community College -South

---

**Title:** The Amazing Filter

Place: **Second Place**

Nicholas Sabol

Buchanan Middle School

---

**Title:** Measuring The Potency of Antacids

Place: **Second Place**

Daisy Torres Hernandez

Mann Middle School

---

**Title:** Paper Towel Capacity

Place: **Second Place**



# Senior Chemistry Award

Abigail Hernandez

Durant High School

---

**Title:** The Effectiveness of Whitening Products on Teeth

Place: **Third Place**

Kalyb Vazquez

Durant High School

---

**Title:** Removal of Lead from Water

Place: **Third Place**

Rajat Doshi

Plant High School

---

**Title:** Computational Design of Optimal Absorbents for Arsenic Removal from Drinking Water

Place: **Second Place**

Katherine McCaffrey

Carrollwood Day School

---

**Title:** The Effect of Graphene Concentration on the Performance of a Dye Sensitized Solar Cell

Place: **First Place**

## Junior Cellular/Molecular Biology & Biochemistry Award

Mallory Marsland-Pettit

Liberty Middle School

---

**Title:** How do you let Loose the Juice? To Speed up Time, use an Enzyme

**Place:** **Second Place**

Jibril Mustafa

Channelside Academy of Math and Science

---

**Title:** Got Protein?

**Place:** **Second Place**

# Senior Cellular/Molecular Biology & Biochemistry Award

Ashlyn Bartley

Wharton High School

---

**Title:** Kaleidoscopic Eletrophoresis

**Place:** **Second Place**

Susan Morales

Freedom High School

---

**Title:** Denaturation of Proteins by Strong Acid, Strong Base, and Alcohol

**Place:** **Second Place**

Sruthika Baviriseaty

King High School

---

**Title:** Genome Architecture Indicates Cellular Potential in Human Embryonic Stem Cell Differentiation

**Place:** **First Place**

# Junior Earth & Environmental Sciences Award

Abigail Boschetti Cordero

Kids Community College-South East

---

**Title:** Oil, you've been Foiled!

Place: **Third Place**

Savannah Harris

Ben Hill Middle School

---

**Title:** Save Our Soil

Place: **Third Place**

Taylor Schumann

Ben Hill Middle School

---

**Title:** How Does the Amount of Plants Affect the Amount of Erosion?

Place: **Third Place**

Kailash Shankar

Liberty Middle School

---

**Title:** Plants Keep Earth "Cool"

Place: **Third Place**

Meghna Ramaswamy

Farnell Middle School

---

**Title:** Predicting Sinkholes with Smart Sensors

Place: **Second Place**

Ananya Sista

Liberty Middle School

---

**Title:** Summer's Gone Wild!

Place: **Second Place**

Vignesh Saravanan

Liberty Middle School

---

**Title:** Warm Up, Speed Up

Place: **First Place**

# Senior Earth & Environmental Sciences Award

Sarah Jenkins

Bible Truth Ministries

---

**Title:** Free Flush II

Place: **Third Place**

Pragnya Kulkarni

Middleton High School

---

**Title:** Which Type of Plant is Highly Effective in Reducing Atmospheric Carbon Dioxide?

Place: **Second Place**

Ryan Sherry & Farouk Tihamiyu

Wharton High School

---

**Title:** What Effects do Vitamins have on Plant Growth

Place: **Second Place**

Shruti Tamhane

Wharton High School

---

**Title:** Effect of Fertilizer on Cultural Eutrophication and Novel ways to Prevent it.

Place: **Second Place**

# Junior Environmental Engineering Award

Skyllar Erikson

Stewart Middle Magnet

---

**Title:** Managing the Impact of Heat Islands in the Sunshine State

**Place:** **First Place**

# Senior Environmental Engineering Award

Elizabeth McCaffrey

Carrollwood Day School

---

**Title:** Reverse Electrodialysis for Power Production from Saline Gradients

**Place:** **First Place**

# Junior Engineering Award

Tristan Davila

Stewart Middle Magnet

---

**Title:** Weight Bearing Bridge Designs

Place: **Third Place**

Declan McClary

Kids Community College-South East

---

**Title:** Filtra-Pac

Place: **Second Place**

Kevalin Gupta

Liberty Middle School

---

**Title:** Is Your Boat Shipshape?

Place: **First Place**



# Senior Engineering Award

Hunter Pino

Alonso High School

---

**Title:** Fuel Efficiency

Place: **Third Place**

Nicholas Ciarlone

Brandon High School

---

**Title:** Lifting Heavy Loads with Hydraulics

Place: **Second Place**

Ameya Mujumdar

King High School

---

**Title:** Innovative Design of a Gait Enhancing Mobile Shoe (GEMS) for Rehabilitation

Place: **First Place**

# Junior Intelligent Machines & Robotics Systems Award

James Hudson

Independence Academy

---

**Title:** Visi-bel: Visual Sound for the Hearing Impaired

**Place:** **Second Place**

Bryce Crocker & Lucas McDaniels

Buchanan Middle School

---

**Title:** The Degree of Sensitivity from Various Tests on an EV3 Mind Storm Robot

**Place:** **First Place**

# Senior Intelligent Machines & Robotics Systems Award

Alejandro Nieves

Brandon High School

---

**Title:** Real Time Language Translator

Place: **Third Place**

Harry Kanu

Brandon High School

---

**Title:** 3D Model Arthritis Glove

Place: **Second Place**

Dean Alvarez

Strawberry Crest High School

---

**Title:** Effect of Various Pooling Methods on Robustness to Adversarial Examples in Convolutional Neural Networks Place: **First Place**

# Junior Mathematics & Computational Sciences Award

Jason Cruz

Buchanan Middle School

---

**Title:** The Possible Correlation Between Shoe Model and Player Statistics

**Place:** **Second Place**

# Senior Mathematics & Computational Sciences Award

Angelina Krinos

Robinson High School

---

**Title:** Analyzing the Interaction Between Sea Surface Temperature and Hurricane Intensification in the Atlantic Basin      **Place:** **Third Place**

Victoria Suhr

Durant High School

---

**Title:** Cryptocurrency Evolution      **Place:** **Third Place**

Kimberly Do

Strawberry Crest High School

---

**Title:** A statistical analysis of the frequency of similes in poetry      **Place:** **Second Place**

Lauren Colaco

King High School

---

**Title:** The Effect of Various Treatments on Intermittent Hypoxia in Cancer      **Place:** **First Place**

# Junior Microbiology Award

Jakob Cruz

Ben Hill Middle School

---

**Title:** How Do Enzymes Affect Bioluminescence?

Place: **Third Place**

Derek Wu

Liberty Middle School

---

**Title:** The Relationship Between Temperature and Plant Cell Mitosis

Place: **Second Place**

Aditi Kanuganti

Carrollwood Day School

---

**Title:** Agents Treating P-trap Bacteria

Place: **First Place**

# Senior Microbiology Award

Caitlin Meier & Netra Patil

Wharton High School

---

**Title:** Identifying and Quantifying Bacteria on Salads

**Place:** **Second Place**

Aksheta Kanuganti

Carrollwood Day School

---

**Title:** Production of a Recombinant Vaccine Candidate, Duffy Binding Protein (DBP) Against Plasmodium vivax (P.vivax) Malaria

**Place:** **First Place**

# Junior Physics & Astronomy Award

Noah Fitzpatrick-Cline

Turner/Bartels K8

---

**Title:** Road Slipperiness

Place: **Third Place**

Sneha Nidadavolu

Liberty Middle School

---

**Title:** Stop that Sound!

Place: **Second Place**

Daniel Carvajal

Turner/Bartels K8

---

**Title:** Solar Energy through Water

Place: **First Place**



# Senior Physics & Astronomy Award

Joalda Morancy

Brandon High School

---

**Title:** Investing Gravitational Waves using LIGO Data

**Place:** **Second Place**

# Junior Plant Sciences Award

Deborah Dean

Bible Truth Ministries

---

**Title:** Herbs on the Go

Place: **Third Place**

Melissa Fraga

Smith Middle School

---

**Title:** OOPS! I Produced O2 Again

Place: **Second Place**

Rylan Smith

Independence Academy

---

**Title:** Fertile Foundation

Place: **Second Place**

Elena Glow

Williams Middle Magnet

---

**Title:** Nutrient Analysis and Plant Development Affected by the Addition of Lavandula and  
Chamaemelum nobile

Place: **First Place**

# Senior Plant Sciences Award

Ashley Joseph & Amruta Pednekar

Wharton High School

---

**Title:** The Different Temperatures and their Effects on the Xylem of the Tomato Plant

**Place:** **Second Place**

Ojas Kalia

Middleton High School

---

**Title:** What is the Effect of Denaturing the Caspase-3 Protein from Plant Cells in Cancer Cell Metastasis? **Place:** **First Place**

# Special Awards

Dean Alvarez

Strawberry Crest High School

---

**Title:** Effect of Various Pooling Methods on Robustness to Adversarial Examples in Convolutional Neural Networks

**Award(s):** The United States Geospatial Intelligence Foundation Award & Yale Science and Engineering Association Award

Sruthika Baviriseaty

King High School

---

**Title:** Genome Architecture Indicates Cellular Potential in Human Embryonic Stem Cell Differentiation

**Award(s):** Bristol Myers Squibb Innovation Award

Zachary Bischof

Williams Middle Magnet

---

**Title:** Are Slushees Really bad for you? Effect of Food Dyes on Planaria Regeneration and Cancer

**Award(s):** The Society for In Vitro Biology Award

Katherine Blessing

Stewart Middle Magnet

---

**Title:** Fidgeting: Fact or Fiction

**Award(s):** Florida Psychological Association Award

Anjali Borra

Carrollwood Day School

---

**Title:** Testing Different Types of Compost and their Temperatures

**Award(s):** ASU Walton Sustainability Solutions Award

Abigail Boschetti Cordero

Kids Community College-South East

---

**Title:** Oil, you've been Foiled!

**Award(s):** Avantor VWR Water Analysis Award

Matthew Cagle

Ben Hill Middle School

**Title:** Can Playing Video Games Affect Heart Rate and Blood Pressure?

**Award(s):** American Psychological Association Award

Jessica Cao

Freedom High School

**Title:** The Effects of Aluminum on Beta Amyloid Aggregation

**Award(s):** Urban E recycling Award

Christopher Chambers

Ben Hill Middle School

**Title:** Oxygen's Great Escape

**Award(s):** Avantor VWR Water Analysis Award

Haley Clark

Kids Community College-South East

**Title:** Rust Busters

**Award(s):** Society for Mining Engineers Award

Nicholas Ciarlone

Brandon High School

**Title:** Lifting Heavy Loads with Hydraulics

**Award(s):** Cardinal Roofing Award

Arisbe Delgado-Alarcon

Buchanan Middle School

**Title:** Religious Views and Its Effect on Suicide Rate

**Award(s):** Florida Psychological Association Award

Kimberly Do

Strawberry Crest High School

**Title:** A statistical analysis of the frequency of similes in poetry

**Award(s):** Mu Alpha Theta Award

Rajat Doshi

Plant High School

**Title:** Computational Design of Optimal Absorbents for Arsenic Removal from Drinking Water

**Award(s):** Carollo Engineering Award, Intel Excellence in Computer Science Award, Stockholm Junior Water Prize

Jacob Dunlap

Wharton High School

**Title:** How Does the Loft on a Golf Ball Affect how far the Ball Goes?

**Award(s):** The United States Geospatial Intelligence Foundation Award

Jenna Farnum

Durant High School

**Title:** Food Additives for Thought: The effect of food dye on memory

**Award(s):** Florida Psychological Association Award

Elena Glow

Williams Middle Magnet

**Title:** Nutrient Analysis and Plant Development Affected by the Addition of Lavandula and Chamaemelum nobile

**Award(s):** BAMA Award

Skylar Haas

Stewart Middle Magnet

**Title:** The C.A.N.D.O. Initiative

**Award(s):** Busch Gardens & Urban E recycling Award

Kevin Hay

Beth Shields Middle School

**Title:** How is the Center of Gravity Affected by Various Weights?

**Award(s):** Society for Mining Engineers Award

Saketh Katta

Strawberry Crest High School

**Title:** Optimization of Pathophysiological Databases for Enhanced User Experience

**Award(s):** Florida Psychological Association Award

Aashrith Kossireddy

Liberty Middle School

**Title:** The Heat Beneath our Feet

**Award(s):** Society for Mining Engineers Award

Angelina Krinos

Robinson High School

**Title:** Analyzing the Interaction Between Sea Surface Temperature and Hurricane Intensification in the Atlantic Basin

**Award(s):** American Meteorological Society Award, & NASA Earth Systems Science Award

Pragnya Kulkarni

Middleton High School

**Title:** Which Type of Plant is Highly Effective in Reducing Atmospheric Carbon Dioxide?

**Award(s):** Environmental Protection Commission Award & NOAA Taking the Pulse of the Planet Award

Elizabeth McCaffrey

Carrollwood Day School

**Title:** Reverse Electrodialysis for Power Production from Saline Gradients

**Award(s):** The United States Geospatial Intelligence Foundation Award

Katherine McCaffrey

Carrollwood Day School

**Title:** The Effect of Graphene Concentration on the Performance of a Dye Sensitized Solar Cell

**Award(s):** BAMA Award

Declan McClary

Kids Community College-South East

**Title:** Filtra-Pac

**Award(s):** Carollo Engineering Award & Society for Mining Engineers Award

Hailey Morrell

Wharton High School

**Title:** How Does the Loft on a Golf Ball Affect how far the Ball Goes?

**Award(s):** The United States Geospatial Intelligence Foundation Award

Ameya Mujumdar

King High School

---

**Title:** Innovative Design of a Gait Enhancing Mobile Shoe (GEMS) for Rehabilitation

**Award(s):** The United States Geospatial Intelligence Foundation Award

Emilie Park

Stewart Middle Magnet

---

**Title:** Stroop Effect

**Award(s):** Florida Psychological Association Award

Mohammad Qasem

Wharton High School

---

**Title:** Betta fish Breeding Behavior

**Award(s):** BigCat Rescue Tiger Adoption

Meghna Ramaswamy

Farnell Middle School

---

**Title:** Predicting Sinkholes with Smart Sensors

**Award(s):** Cardinal Roofing Award

Rohit Ramaswamy

Farnell Middle School

---

**Title:** Predicting Peripheral Neuropathy with Programmable Footwear

**Award(s):** Bristol Myers Squibb Innovation Award

Kurt Rodriguez

Plant High School

---

**Title:** PESTilence: The Effects of Nuts on Aedes aegypti Mosquitoes

**Award(s):** ASU Walton Sustainability Solutions Award

Jasmine Rudd

Wharton High School

---

**Title:** Determining the Presence of Soil

**Award(s):** Urban E recycling Award



Vignesh Saravanan

Liberty Middle School

**Title:** Warm Up, Speed Up

**Award(s):** Florida Aquarium award

Taylor Schumann

Ben Hill Middle School

**Title:** How Does the Amount of Plants Affect the Amount of Erosion?

**Award(s):** Society for Mining Engineers award

Kailash Shankar

Liberty Middle School

**Title:** Plants Keep Earth "Cool"

**Award(s):** American Meteorological Society award

Skye Spurlock

Buchanan Middle School

**Title:** Squirrel Age Detection Algorithm

**Award(s):** BigCat Rescue Leopard Adoption

Shruti Tamhane

Wharton High School

**Title:** Effect of Fertilizer on Cultural Eutrophication and Novel ways to Prevent it.

**Award(s):** Society for Mining Engineers Award & The United States Geospatial Intelligence Foundation award

Maresha Thompson

Bible Truth Ministries

**Title:** Air Water Wash

**Award(s):** Association for Women Geoscientists award & City of Tampa Water award

Kalyb Vazquez

Durant High School

**Title:** Removal of Lead from Water

**Award(s):** Stockholm Junior Water Prize

Ava Whalen

Buchanan Middle School

---

**Title:** The Possible Correlation Between County Funding and ELA Scores

**Award(s):** Florida Psychological Association award

# Memorial Awards

Sruthika Baviriseaty

---

King High School

Title: Genome Architecture Indicates Cellular Potential in Human Embryonic Stem Cell Differentiation

Memorial Award: **Robert J. Matthews Award**

Ryan Coudurier

---

Buchanan Middle School

Title: Magnetic Field Strength and Plant Development

Memorial Award: **Joan Harris Life Science Award**

Rajat Doshi

---

Plant High School

Title: Computational Design of Optimal Absorbents for Arsenic Removal from Drinking Water

Memorial Award: **Grace Y. Abbott Award**

Skyllar Erikson

---

Stewart Middle Magnet

Title: Managing the Impact of Heat Islands in the Sunshine State

Memorial Award: **Carolyn S. Crow Award**

Abigail Hernandez

---

Durant High School

Title: The Effectiveness of Whitening Products on Teeth

Memorial Award: **Nelda Mason Award**

Aditi Kanuganti

---

Carrollwood Day School

Title: Agents Treating P-trap Bacteria

Memorial Award: **Dr. Carl Riggs Award**

Meghna Ramaswamy

---

Title: Predicting Sinkholes with Smart Sensors

Farnell Middle School

---

Memorial Award: **Clara Crumpton Award**

Shruti Tamhane

---

Title: Effect of Fertilizer on Cultural Eutrophication and Novel ways to Prevent it.

Wharton High School

---

Memorial Award: **Helen Johnson's Award**

## Team Hillsborough – State Science and Engineering Fair Delegation

Allison Afiat	Liberty Middle School
Dean Alvarez	Strawberry Crest High
Sruthika Baviriseaty	King High School
Zachary Bischof	Williams Middle Magnet
Daniel Carvajal	Turner/Bartels K8
Lauren Colaco	King High School
Cameron Cornett	Strawberry Crest High
Bryce Crocker	Buchanan Middle School
Rajat Doshi	Plant High School
Skyllar Erikson	Stewart Middle Magnet
Jenna Farnum	Durant High School
Elena Glow	Williams Middle Magnet
Kevalin Gupta	Liberty Middle School
Ojas Kalia	Middleton High School
Aksheta Kanuganti	Carrollwood Day School
Milin Kurup	Robinson High School
Katherine McCaffrey	Carrollwood Day School
Elizabeth McCaffrey	Carrollwood Day School
Lucas McDaniels	Buchanan Middle School
Ameya Mujumdar	King High School
Shloke Patel	Carrollwood Day School
Meghna Ramaswamy	Farnell Middle School
Rohit Ramaswamy	Farnell Middle School
Kurt Rodriguez	Plant High School
Vignesh Saravanan	Liberty Middle School
Erin Soko	Liberty Middle School

# International Science and Engineering Fair Delegation

Sruthika Baviriseaty

King High School

---

**Title:** Genome Architecture Indicates Cellular Potential in Human Embryonic Stem Cell Differentiation

Milin Kurup

Robinson High School

---

**Title:** Effect of Protein Kinase Inhibitor on Tau Hyperphosphorylation as TBI Cell-Based Model

## JUNIOR DIVISION BEST OF FAIR

Elena Glow

Williams Middle Magnet

---

**Title:** Nutrient Analysis and Plant Development Affected by the Addition of Lavandula and  
Chamaemelum nobile

Junior

## SENIOR DIVISION BEST OF FAIR

Sruthika Baviriseaty

King High School

---

**Title:** Genome Architecture Indicates Cellular Potential in Human Embryonic Stem Cell Differentiation

Senior