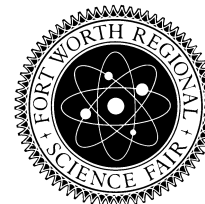


Fort Worth Regional Science Fair

Winners Directory



Award: **ANIMAL SCIENCES**

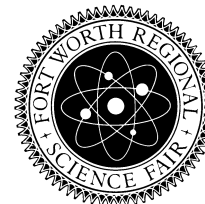
First Place: Jacob Brown	Division: J	135412
Project: Grumpy Guppies		
School: Vernon 6Th Grade	Advisor: Jan Westover	

Second Place: Daniela Vela	Division: J	106393
Project: E&D Dog Behavioral Research Project		
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	
Second Place: Emily Johnston	Division: J	106393
Project: E&D Dog Behavioral Research Project		
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	

Third Place: Timothy Stuart	Division: J	136003
Project: Effects of Rocket Acceleration on Arthropods and its Applications in Space Travel		
School: Tams Middle School Aspire Fair	Advisor: Russ Stukel	

Fort Worth Regional Science Fair

Winners Directory



Award: **BEHAVIORAL & SOCIAL SCIENCES**

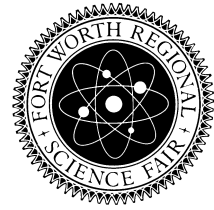
First Place: Liberty LaCour Project: The Antihero Project	Division: J	126617
School: Jerry Knight Stem Academy	Advisor: Justin Maenner	
First Place: Erik Cramer Project: The Antihero Project	Division: J	126617
School: Jerry Knight Stem Academy	Advisor: Justin Maenner	

Second Place: Eden Resendez Project: Based on the four main key concepts of behavioral finance; will behavioral finance drive the change from the dollar to a cryptocurrency as the world's currency?	Division: J	136743
School: Crowley Middle School	Advisor: Jael Shackelford	

Third Place: Bobby Johnson Project: Music and Mood	Division: J	105295
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	

Fort Worth Regional Science Fair

Winners Directory

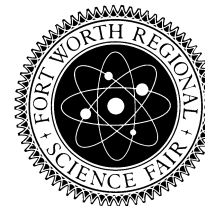


Award: **BIOCHEMISTRY, CELLULAR, & MOLECULAR BIOLOGY**

First Place: Silver Rahmlow	Division: J	127933
Project: Analyzing the cellular interactions influencing the onset of Celiac disease		
School: Tams Middle School Aspire Fair	Advisor: Russ Stukel	
Second Place: Julio Rojas	Division: J	131103
Project: Does diet soda cause more damage to human teeth?		
School: Irma Marsh Middle School	Advisor: Tylithia Bell	
Third Place: Daniel Nguyen	Division: J	137262
Project: Strawberry DNA		
School: Sue Crouch Intermediate	Advisor: Bryan Michler	

Fort Worth Regional Science Fair

Winners Directory



Award: **CHEMISTRY**

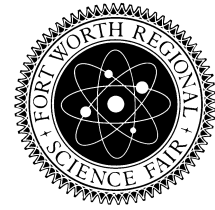
First Place: Teena Maliakal	Division: J	136751
Project: Vitamins: Does Brand Matter?		
School: Harmony Science Academy Carrollton-Middle Sch	Advisor: Mehmet Biter	

Second Place: Quinnly Heinsen	Division: J	116295
Project: Shiny, but are they clean?		
School: Liberty Christian School M S	Advisor: Kate Daggett	

Third Place: Rebekah Gilbertson	Division: J	130314
Project: Bad Hair Days No More! Testing the Effect of Shampoo on Grease		
School: Graham Junior High School	Advisor: Jenna Baker	

Fort Worth Regional Science Fair

Winners Directory



Award: **COMPUTER SCIENCE**

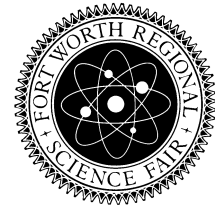
First Place: Joshua Davis	Division: J	129277
Project: How Does AI Learn?		
School: Irma Marsh Middle School	Advisor: Katie Hendrix	

Second Place: Colin Schechter	Division: J	135765
Project: Measuring drift in an FLL robot		
School: Denton Classical Educational Cooperative - Ms	Advisor: Bridget Banas Schechter	

Third Place: Ian Schechter	Division: J	135763
Project: The Effects of FLL Robot Turning Under Different Programming Conditions		
School: Denton Classical Educational Cooperative - Ms	Advisor: Bridget Banas Schechter	

Fort Worth Regional Science Fair

Winners Directory



Award: **EARTH & PLANETARY SCIENCES**

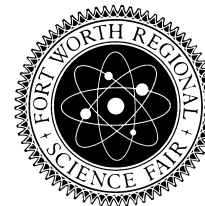
First Place: Jack Olszta	Division: J	110880
Project: The Removal of Oil From Water Using Ferrofluid and a Magnet		
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	

Second Place: Ralph Yraola	Division: J	135067
Project: MicroPlastic Collection		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Karen Moore	

Third Place: Sumodha Pokhrel	Division: J	134656
Project: Harnessing A New Energy Source: Using Biomasses To Produce Biogas		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	

Fort Worth Regional Science Fair

Winners Directory



Award: ENERGY & TRANSPORTATION

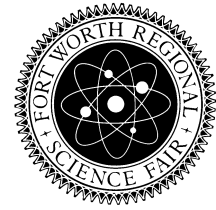
First Place: Stewart Cox	Division: J	135285
Project: Oil Base Relation to Energy Content of Biodiesel		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	

Second Place: Beverly Schluckwerder	Division: J	135120
Project: Shock to the System		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Karen Moore	

Third Place: Esther Fripp	Division: J	137128
Project: Slides in the summertime		
School: Harmony Science Academy Carrollton-Middle Sch	Advisor: Thanh Nguyen	

Fort Worth Regional Science Fair

Winners Directory



Award: **ENGINEERING: ELECTRICAL & MECHANICAL**

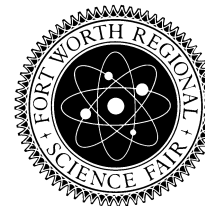
First Place: Elizabeth Hoskins Project: Running Start	Division: J	134487
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	
First Place: Isabella Ahuactzin Project: Running Start	Division: J	134487
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	

Second Place: Austin Guzzardo Project: Aerospike	Division: J	134498
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	
Second Place: Trevor Simon Project: Aerospike	Division: J	134498
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	

Third Place: Trey Reyes Project: Effects of paper airplane designs on flight distance	Division: J	110908
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	

Fort Worth Regional Science Fair

Winners Directory

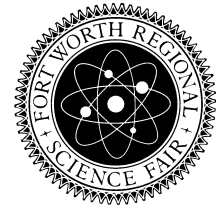


Award: **ENGINEERING: MATERIALS & BIOENGINEERING**

First Place: Abbie Helm Project: Shirt Assistant	Division: J	131574
School: Graham Junior High School	Advisor: Robert Sides	
First Place: Madilyn Wilde Project: Shirt Assistant	Division: J	131574
School: Graham Junior High School	Advisor: Jeanne Richardson	
Second Place: Ila Avila Project: How sunlight affects different types of paint	Division: J	133858
School: Young Women'S Leadership Academy	Advisor: Rose Ramirez	
Third Place: Boyd Peck Project: Tee Time	Division: J	117609
School: Liberty Christian School M S	Advisor: Kate Daggett	

Fort Worth Regional Science Fair

Winners Directory

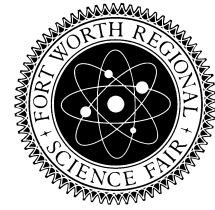


Award: **ENVIRONMENTAL MANAGEMENT & SCIENCES**

First Place: Emma Balandran Project: Hydro Clean Safe. Potable.	Division: J	136261
School: St. John Apostle Catholic Middle School	Advisor: Kevin Hathaway	
Second Place: Harper Newton Project: Decomposition of biodegradables	Division: J	134428
School: Heritage Middle School	Advisor: Sonya Loughran	
Third Place: MaryLyndell Graham Project: Recycle for Thirst	Division: J	136149
School: Graham Junior High School	Advisor: Robert Sides	

Fort Worth Regional Science Fair

Winners Directory



Award: **MATHEMATICAL SCIENCES**

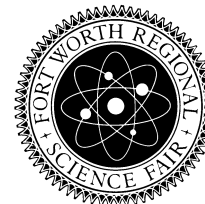
First Place: Carmela Bell	Division: J	106084
Project: How many times should you shuffle to thoroughly shuffle a deck?		
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	

Second Place: Fiona McDonald	Division: J	133857
Project: Get Lost on a Book		
School: Young Women'S Leadership Academy	Advisor: Rose Ramirez	

Third Place: Srimon Khanal	Division: J	135059
Project: Geometry SHAPING Architecture		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Karen Moore	
Third Place: Charlie Nguyen	Division: J	135059
Project: Geometry SHAPING Architecture		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Karen Moore	

Fort Worth Regional Science Fair

Winners Directory



Award: **MEDICINE & HEALTH SCIENCES**

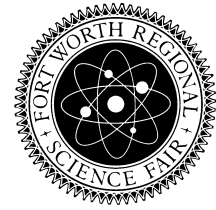
First Place: Enzo Sagun	Division: J	135305
Project: Reducing Cellular Respiration: A Step Towards Cancer Growth		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	
First Place: Lauren Yraola	Division: J	135305
Project: Reducing Cellular Respiration: A Step Towards Cancer Growth		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Rhonda Reinicke	

Second Place: Anna Hamrick	Division: J	136306
Project: Building a Homemade Gel Electrophoresis Chamber		
School: Harmony Science Academy Carrollton-Middle Sch	Advisor: Pam Paramahamsan	
Second Place: Norma Contreras	Division: J	136306
Project: Building a Homemade Gel Electrophoresis Chamber		
School: Harmony Science Academy Carrollton-Middle Sch	Advisor: Pam Paramahamsan	

Third Place: Sebastian Simone	Division: J	118661
Project: Fluctuation in the Flow		
School: Liberty Christian School M S	Advisor: Kate Daggett	

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Winners Directory



Award: **MICROBIOLOGY**

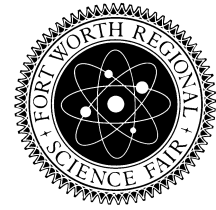
First Place: Pavan Ahluwalia	Division: J	129845
Project: The Power of Garlic		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Deborah Epps	

Second Place: Dylan Kelly	Division: J	136147
Project: Say Cheeeese		
School: Northstar Middle School	Advisor: Gary Spaulding	

Third Place: Shelby Stitt	Division: J	135323
Project: Yeast Production		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Deborah Epps	

Fort Worth Regional Science Fair

Winners Directory

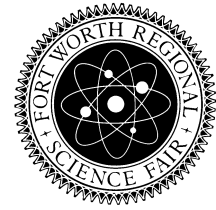


Award: **PHYSICS & ASTRONOMY**

First Place: Andrew Orłowski Project: What Is Terminal Velocity	Division: J	109701
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	
Second Place: Noah Tepera Project: point break	Division: J	106107
School: St. Elizabeth Ann Seton Catholic Middle School	Advisor: Katherine Arnold	
Third Place: Tanner Casaubon Project: C.A.T. Test	Division: J	110352
School: Liberty Christian School M S	Advisor: Loren Gallo	

Fort Worth Regional Science Fair

Winners Directory



Award: **PLANT SCIENCES**

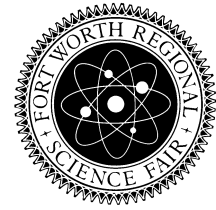
First Place: Valeria Gonzalez	Division: J	137016
Project: Ecofriendly Watering System		
School: Mary Harris Intermediate School	Advisor: Rebecca Gines	

Second Place: Olivia Moore	Division: J	134689
Project: Impact of music on plant growth		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Deborah Epps	

Third Place: Angela Bunda	Division: J	136152
Project: How does magnetism affect plant growth		
School: Harmony School Of Innovation Middle School (Fo	Advisor: Karen Moore	

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Award: ANIMAL SCIENCES

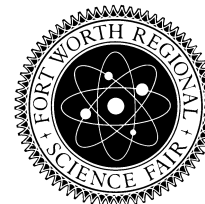
First Place: Emily Zhou	Division: S	120641
Project: Utilizing mitochondrial dysfunction and mitophagy in <i>Caenorhabditis elegans</i> to create a predictive model for cancer treatment		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Isabella Sanchez	Division: S	136431
Project: Food Additives and their Effect on Aggression in <i>D. melanogaster</i>		
School: Granbury High School	Advisor: Priscilla Lumbreras	

Third Place: Alex Lee	Division: S	110619
Project: Application of machine learning to detect and sort malaria infected cells		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Samarth Bhat	Division: S	110619
Project: Application of machine learning to detect and sort malaria infected cells		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

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Award: **BEHAVIORAL & SOCIAL SCIENCES**

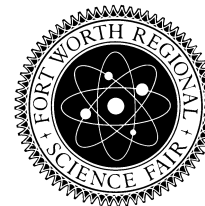
First Place: Rishin Kesarla	Division: S	122620
Project: Participatory Design of Socially Assistive Robots for Children on the Autism Spectrum		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Aribah Hoque	Division: S	110438
Project: Growth of Mind		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Third Place: Illiyan Bardai	Division: S	112542
Project: Red Light Therapy		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Mia Stertz	Division: S	112542
Project: Red Light Therapy		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Fort Worth Regional Science Fair

Winners Directory



Award: **BIOCHEMISTRY, CELLULAR, & MOLECULAR BIOLOGY**

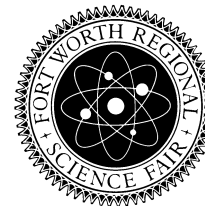
First Place: Geoffrey Zhang	Division: S	122744
Project: Characterization of Astrocyte Polarity with regard to Primary Cillium		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Katherine Shao	Division: S	126933
Project: Determining TRITC MF 30 Antibody Binding Site and Distance to FITC Destabilizer on Myosin Using FRET		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Third Place: Aryaa Kolhe	Division: S	125790
Project: Detection of Silver Nanoparticles in Aqueous Media via Atomic Absorption Spectroscopy		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

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Award: **CHEMISTRY**

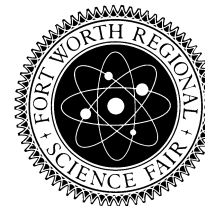
First Place: Saskia Hamilton	Division: S	112109
Project: Heard You Got That Drip: Portable, Efficient, and Cost-Friendly Colorimetric Assay of Lead Nitrate in Water Sources		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Second Place: Kevin Yao	Division: S	123614
Project: Next-Generation Electronics: Novel and Feasible Methods to Prevent the Ambient Degradation of MoS₂		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Third Place: Logan Reeder	Division: S	107531
Project: DateSafe		
School: Grapevine High School	Advisor: Erin Smith	

Fort Worth Regional Science Fair

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Award: **COMPUTER SCIENCE**

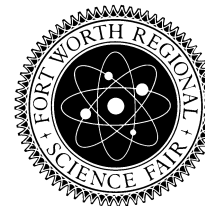
First Place: Weilun Sun	Division: S	122503
Project: FireBot - An Innovative Search and Rescue Robotic Vehicle Designed for High-Temperature Firefighting		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
First Place: Siddharth Thakur	Division: S	122503
Project: FireBot - An Innovative Search and Rescue Robotic Vehicle Designed for High-Temperature Firefighting		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Julia Camacho	Division: S	125272
Project: DeepGlio: A Novel Computational Pipeline for the Segmentation, Classification, and Characterization of Low and High-Grade Brain Tumors		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Third Place: Moksh Nirvaan	Division: S	128430
Project: An Adaptive System to Enable Large-scale Drone Operations in the Urban Landscape		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Fort Worth Regional Science Fair

Winners Directory



Award: **EARTH & PLANETARY SCIENCES**

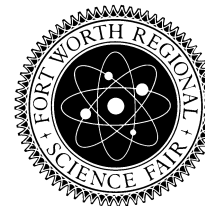
First Place: Ashar Khazi-Syed	Division: S	135790
Project: MDCs Take The Quantum Leap: Application of Novel Materials in MDCs		
School: Harmony School Of Innovation High School (Fort	Advisor: Mark Denman	

Second Place: Lily Huynh	Division: S	134053
Project: Difference in Coliform Bacteria Degradation by Mycoremediation versus Phytoremediation		
School: Summit International High School	Advisor: Gabriel Diaz-Gregorich	
Second Place: Daniela Covarrubias	Division: S	134053
Project: Difference in Coliform Bacteria Degradation by Mycoremediation versus Phytoremediation		
School: Summit International High School	Advisor: Gabriel Diaz-Gregorich	

Third Place: Jonathan Shyu	Division: S	110611
Project: Optimal Parameters for a Biofilter		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Fort Worth Regional Science Fair

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Award: ENERGY & TRANSPORTATION

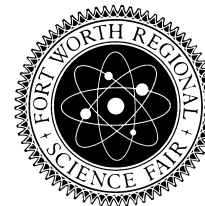
First Place: Ivy Liang	Division: S	124684
Project: A Computational Study of 3d Metal-Ligand Complexes as Organometallic Catalysts for Methane Functionalization		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
First Place: Amy Guan	Division: S	124684
Project: A Computational Study of 3d Metal-Ligand Complexes as Organometallic Catalysts for Methane Functionalization		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Muhib Methani	Division: S	110300
Project: The Brightest Future: Quantifying the Effect of Different Catalysts on Dye-Sensitized Solar Cell Efficiency		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Second Place: Daniel Li	Division: S	110300
Project: The Brightest Future: Quantifying the Effect of Different Catalysts on Dye-Sensitized Solar Cell Efficiency		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Third Place: Callaway Kobes	Division: S	113091
Project: Assessing the Efficiency of Algae Based Biofuel Under Different Levels of CO ₂		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Thomas Dao	Division: S	113091
Project: Assessing the Efficiency of Algae Based Biofuel Under Different Levels of CO ₂		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Fort Worth Regional Science Fair

Winners Directory



Award: **ENGINEERING: ELECTRICAL & MECHANICAL**

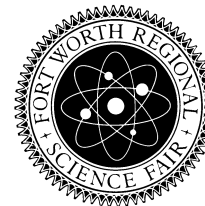
First Place: Sumit Chakraborty	Division: S	126876
Project: Acoustic Signal Modulation and Logic Operation Utilizing Phononic Crystals		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Anna Su	Division: S	110346
Project: Implementing a Novel 5G Network Resistant to Environmental Interference		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Second Place: Taaseen Safyy	Division: S	110346
Project: Implementing a Novel 5G Network Resistant to Environmental Interference		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Third Place: Zachary Massey	Division: S	133344
Project: Talk to Me: A Translating Device for the Deaf		
School: Granbury High School	Advisor: Priscilla Lumbreras	

Fort Worth Regional Science Fair

Winners Directory



Award: **ENGINEERING: MATERIALS & BIOENGINEERING**

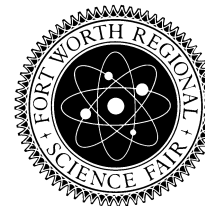
First Place: Pranathi Pilla	Division: S	124673
Project: Low Cost and Sensitive Digital Inline Holographic Microscopy on Microbial Fuel Cells (MFCs) for Rapid Detection of Pathogenic Microbes		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Hubert Yang	Division: S	128791
Project: Synthesis of Ultra-sensitive MoS2 Piezoelectric Pressure Sensors		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Third Place: Abhinav Emani	Division: S	124680
Project: Diagnosing Heart Conditions Using Artificial Intelligence Driven Sleep Analysis		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Third Place: Kaushik Akula	Division: S	124680
Project: Diagnosing Heart Conditions Using Artificial Intelligence Driven Sleep Analysis		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Third Place: Ranak Bansal	Division: S	124680
Project: Diagnosing Heart Conditions Using Artificial Intelligence Driven Sleep Analysis		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Fort Worth Regional Science Fair

Winners Directory

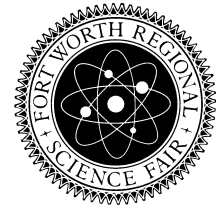


Award: ENVIRONMENTAL MANAGEMENT & SCIENCES

First Place: Shrika Eddula	Division: S	123054
Project: Using the Abraham Model as a Novel Predictor in the Replacement of Hazardous Organic Solvents		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
First Place: Jennifer Huang	Division: S	123054
Project: Using the Abraham Model as a Novel Predictor in the Replacement of Hazardous Organic Solvents		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Second Place: Aly Moosa	Division: S	110846
Project: Mimicking Spathiphyllum Wallisii and Chlorella air filtration properties in order to convert excess CO2 from e-fluid into profitable O2		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Second Place: Ana Assaad	Division: S	110846
Project: Mimicking Spathiphyllum Wallisii and Chlorella air filtration properties in order to convert excess CO2 from e-fluid into profitable O2		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Jehil Mehta	Division: S	128504
Project: Detection of Pyridine and BTEX Solvents in Aqueous Media via a Novel Luminescent Metal-Inorganic Framework		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Third Place: Nikhil Vicas	Division: S	128504
Project: Detection of Pyridine and BTEX Solvents in Aqueous Media via a Novel Luminescent Metal-Inorganic Framework		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Third Place: Rohan Maheshwari	Division: S	128504
Project: Detection of Pyridine and BTEX Solvents in Aqueous Media via a Novel Luminescent Metal-Inorganic Framework		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Fort Worth Regional Science Fair

Winners Directory



Award: **MATHEMATICAL SCIENCES**

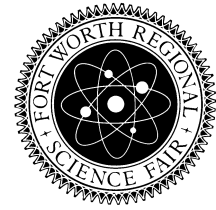
First Place: Rhythm Garg	Division: S	120987
Project: Coordinating Fleet of Autonomous Drones: Geodesics in Configuration Spaces of Connected Manifolds		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Kendrick Yamamoto	Division: S	110817
Project: Calculating Chaos: Simulating a Double Pendulum		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Third Place: Jaiden Baliga	Division: S	110330
Project: A Meta-analysis of experimental design		
School: Grapevine High School	Advisor: Erin Smith	

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Winners Directory



Award: **MEDICINE & HEALTH SCIENCES**

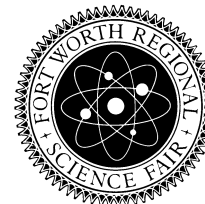
First Place: Khyathi Thallapureddy	Division: S	124853
Project: Human genetic variant OtpQ153R causes excessive weight gain and glucose intolerance in mice		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Second Place: Safaa Hassan	Division: S	113778
Project: Non-invasive Glucose Biosensor for Diabetics		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Third Place: Manasa Sripati	Division: S	110304
Project: Biosensor		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

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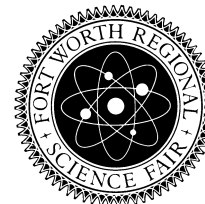


Award: **MICROBIOLOGY**

First Place: Jordan Wallace	Division: S	111559
Project: Synergistic Effect of Carbon Nanotubes with Different Antibiotics		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
First Place: Emma Adkins	Division: S	111559
Project: Synergistic Effect of Carbon Nanotubes with Different Antibiotics		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Second Place: Alana Gaughan	Division: S	110629
Project: The effects of lysozyme and metal salts on different species of cyanobacteria		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Areeba Shaikh	Division: S	106501
Project: Natural Antibiotics vs Drug-Resistant Bacteria		
School: Grapevine High School	Advisor: Erin Smith	

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Award: **PHYSICS & ASTRONOMY**

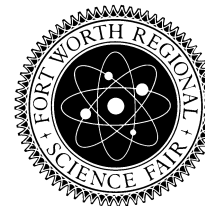
First Place: Jay Upadhyaya	Division: S	110844
Project: An Energy Scavenging Thermoelectric Microprocesor Implementation for the Conversion of Waste Heat to Electrical Power		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
First Place: Ashwin Katta	Division: S	110844
Project: An Energy Scavenging Thermoelectric Microprocesor Implementation for the Conversion of Waste Heat to Electrical Power		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	

Second Place: Ernest Lu	Division: S	124144
Project: Optimization of Electronics by Removing the Degradation of MoS2		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	
Second Place: Mihir Khare	Division: S	124144
Project: Optimization of Electronics by Removing the Degradation of MoS2		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	

Third Place: Keegan Vogel	Division: S	135809
Project: Under Pressure		
School: Northstar High School	Advisor: Kimberly Desrosiers	

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Winners Directory



Award: **PLANT SCIENCES**

First Place: Itbaan Nafi	Division: S	112721
Project: Biodegradable water bottle with plant xylem filter		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
First Place: Faiz Charanyia	Division: S	112721
Project: Biodegradable water bottle with plant xylem filter		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Second Place: Britney Chong	Division: S	110338
Project: Using Novel Machine Learning Algorithms to Detect Magnaporthe Grisea		
School: Colleyville Heritage High School	Advisor: Sonya Loughran	
Third Place: Sai Sarnala	Division: S	127760
Project: Genetic Modification of Medicago sativa plants to increase the production of proanthocyanidins in the epidermal tissues		
School: Texas Academy Of Mathematics And Sciences H S	Advisor: Samuel Earls	