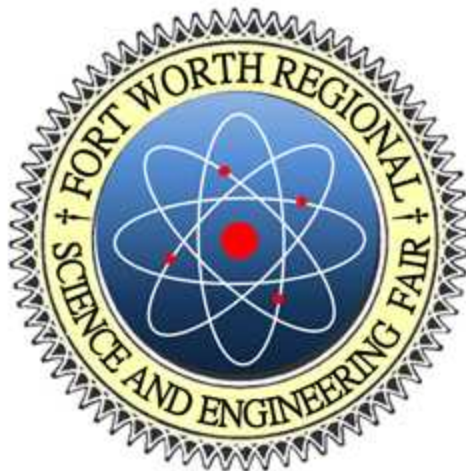
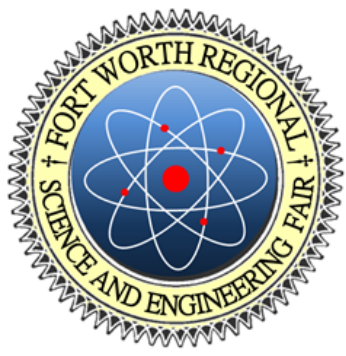




2021 Fort Worth Regional Science and Engineering Fair

Category Awards Senior Division





Fort Worth Regional Science and Engineering Fair

Animal Sciences

Senior Division

1st Place: The Effect of Red 40 Lake of the Aggression of Subsequent Generations of *D. melanogaster*

Project ID: 153563

School: GRANBURY HIGH SCHOOL

Students: Isabella Sanchez

2nd Place: Aquatic Toxicity Abraham Model Correlations Between Aquatic Organisms and Organic Solvents

Project ID: 148697

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

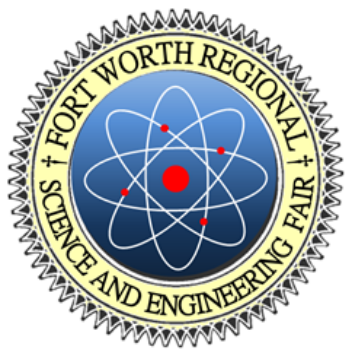
Students: Sophia Cai, Angelina Xu

3rd Place: CrossNET: A Cross-Species Deep Learning Model to Predict Human H3K4me3/H3K27Ac Peak Expression

Project ID: 139225

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Anay Gupta



Fort Worth Regional Science and Engineering Fair

Behavioral & Social Sciences Senior Division

1st Place: Don't trip; TRIPP! The Effect of a Virtual Reality Meditation Environment on Stress and Mindfulness.

Project ID: 147093

School: Colleyville Heritage High School

Students: Stefan Salaices

2nd Place: Get Your Head in the Game: The Effects of Social Facilitation and Extrinsic Incentives on Academic Performance

Project ID: 143514

School: Colleyville Heritage High School

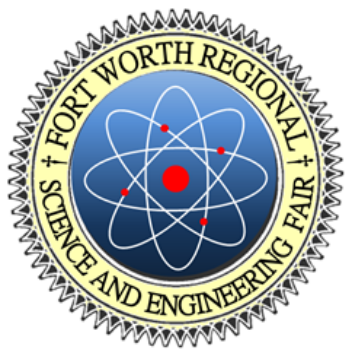
Students: Ryen Scott-Lewars, Elise Nackley

3rd Place: Comparing the Effects of Positive Subliminal Evaluative Conditioning on Implicit and Explicit Self-Esteem in Teens

Project ID: 143709

School: Colleyville Heritage High School

Students: Reagan Brown



Fort Worth Regional Science and Engineering Fair

Biochemistry, Cellular, & Molecular Biology

Senior Division

1st Place: Molecular Dynamics Investigation of Poly [ADP-Ribose] Polymerase 1 Inhibitors as Treatment for V762A Single-Nucleotide Polymorphism Correlated with Lung and Ovarian Cancer

Project ID: 149256

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Neel Shanmugam

2nd Place: Methods to Control the Pore Sizes and Shapes of Electrospun Nanofibers for Cell Study

Project ID: 148729

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

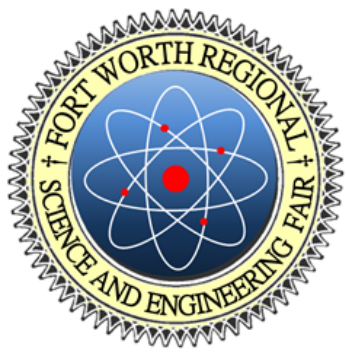
Students: Cindy Liang

3rd Place: Using Machine Learning to Predict Blood Glucose Based on Physiological Factors

Project ID: 144728

School: Colleyville Heritage High School

Students: Shelby Phillips



Fort Worth Regional Science and Engineering Fair

Chemistry Senior Division

1st Place: Pressure-Driven C-H Activation via Non-Bonding Interactions

Project ID: 147982

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Carly Yang

2nd Place: Modeling the Solubilities for Benorilate and Domperidone Drug Molecules
Across Biological Tissues

Project ID: 148919

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

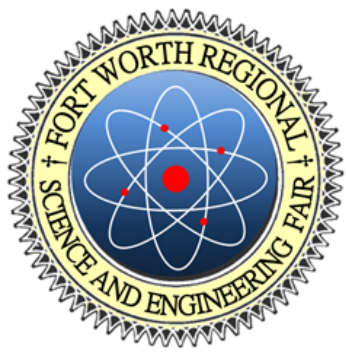
Students: Kelly Kim, Pranavi Garlapati

3rd Place: Mobile Device Accurately Identifies Toxins Using an Artificial Support Vector
Machines Neural Network

Project ID: 147919

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Shreyas Shridharan



Fort Worth Regional Science and Engineering Fair

Computer Science Senior Division

1st Place: Talk to Me: A Translating Device for the Deaf

Project ID: 153561

School: GRANBURY HIGH SCHOOL

Students: Zachary Massey

2nd Place: Symbiotic Neural and Graph-based Question Answering

Project ID: 147115

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Yifan Guo

3rd Place: Computer Vision based approach to Conversational AI

Project ID: 148772

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

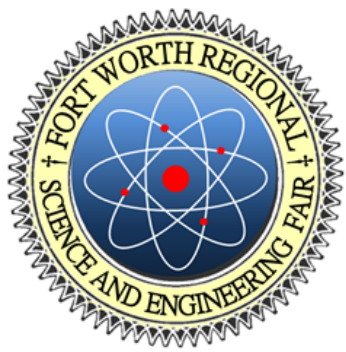
Students: Kapil Yadav

3rd Place: Algorithmic Detection of COVID-19 through CT-Scans

Project ID: 151332

School: Colleyville Heritage High School

Students: Vishaka Varshney, Aribah Hoque



Fort Worth Regional Science and Engineering Fair

Earth & Planetary Sciences Senior Division

1st Place: A Hybrid Bioplastic and Its Properties

Project ID: 153775

School: GRANBURY HIGH SCHOOL

Students: Scout Skaggs

2nd Place: Using Abraham Model to Determine Solubility of Agrochemicals in Natural Substances

Project ID: 150363

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Evonne Huang

3rd Place: Burn Baby Burn: A Study of Catalytic Pyrolysis of Polystyrene and the Search for the Most Efficient Catalyst

Project ID: 144460

School: Colleyville Heritage High School

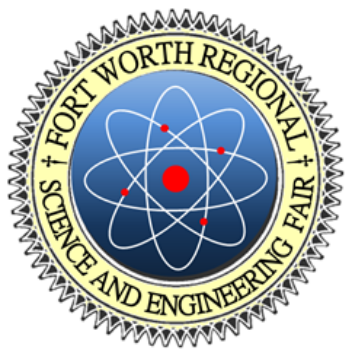
Students: Jiho Lee, Jacob Chen

3rd Place: Coral Reef Crisis: The Evaluation of Pentamerous Limestone with Various Aquatic Plants and their Effects on Coral Reefs

Project ID: 144572

School: Colleyville Heritage High School

Students: Naomi Carleo



Fort Worth Regional Science and Engineering Fair

Energy & Transportation Senior Division

1st Place: What flammable thing should you use if you don't have wood?

Project ID: 153600

School: iCAN Homeschool (HS)

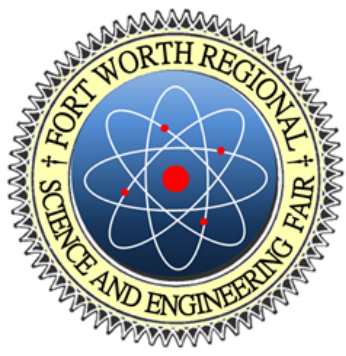
Students: Shyanne Shrake

2nd Place: Thermodynamics of Intermolecular Bonding Insulations

Project ID: 141976

School: Grapevine High School

Students: Grant Ghormley



Fort Worth Regional Science and Engineering Fair

Engineering: Materials & Bioengineering Senior Division

1st Place: The Analysis of Chitosan in Reducing the Initial Burst Effect in Electrospun Nanofiber-Based Drug Delivery Systems (DDS)

Project ID: 146041

School: Colleyville Heritage High School

Students: Sunehra Chowdhury

2nd Place: Constructing and analyzing the efficiency of an adhesive based triboelectric nanogenerator

Project ID: 147178

School: Colleyville Heritage High School

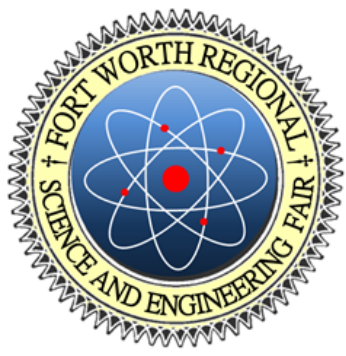
Students: Moid Meghani

3rd Place: Building a Better Battery: A Novel Implementation of Homemade, Low-cost Graphene in a Supercapacitor Analyzing Efficiency and Real-World Application

Project ID: 146717

School: Colleyville Heritage High School

Students: Augene Chung, Daniel Kim, Tyler Lane



Fort Worth Regional Science and Engineering Fair

Environmental Management & Sciences Senior Division

1st Place: Developing a Free Energy Parameter Model for the Prediction and Mapping of the Uptake of Hazardous Organic Pollutants by Plant Cuticle Membranes

Project ID: 148406

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Jennifer Huang, Shrika Eddula

2nd Place: Material Detector: Detecting the Material of Items through Photoelectric, Inductive, and Force Pressure Sensors

Project ID: 153630

School: The Oakridge School

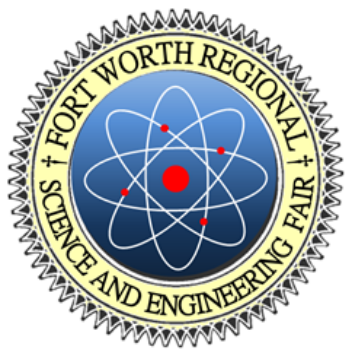
Students: Eshan Singhal

3rd Place: Construction of a Water Purification Device Using Various Filtration Methods

Project ID: 144459

School: Colleyville Heritage High School

Students: Jakin Lee



Fort Worth Regional Science and Engineering Fair

Mathematical Sciences

Senior Division

1st Place: Optical Character Recognition of Chemical Equations for Operation

Project ID: 147409

School: Colleyville Heritage High School

Students: Gavin Casey

2nd Place: Is It A Small World After All?

Project ID: 146053

School: Colleyville Heritage High School

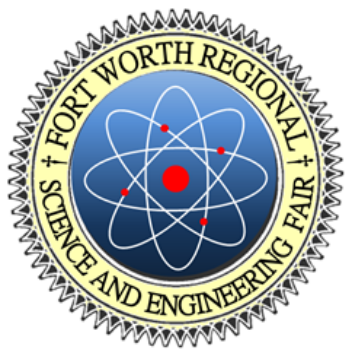
Students: Pranav Veera, Jonathan Chekelea

3rd Place: Analysis of COVID-19 Trends in Texas Schools

Project ID: 152591

School: Grapevine High School

Students: Michael Wong



Fort Worth Regional Science and Engineering Fair

Medicine & Health Sciences Senior Division

1st Place: Using Post-Illumination Pupil Response as a Novel Biomarker for Parkinson's Disease

Project ID: 148731

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Allen Chau, Brianna Chan

2nd Place: The Effect of Methylprednisolone and D-methionine on Noise-induced Hearing Loss

Project ID: 148691

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

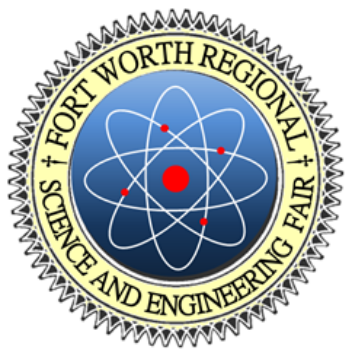
Students: Savannah Cheng

3rd Place: Implications of Internal Factors on Catalytic Lactase Enzymes in Association with Lactose Malabsorption

Project ID: 144296

School: Colleyville Heritage High School

Students: Cindey Xiao



Fort Worth Regional Science and Engineering Fair

Microbiology

Senior Division

1st Place: Nature's Power: Predicting Substrate Specificity of the Adenylation and Condensation Domains in PKS-NRPS Enzymes for the Identification of Novel Secondary Metabolites

Project ID: 150594

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

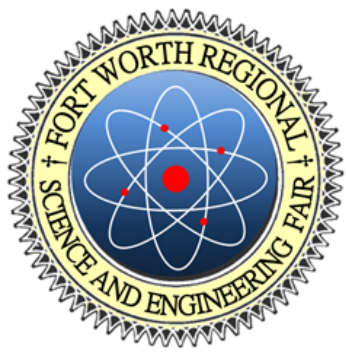
Students: Bhavik Tadigotla

2nd Place: The Effectiveness of Different Anti Bacterial Products in Killing E. coli

Project ID: 149440

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Ajeong Kim



Fort Worth Regional Science and Engineering Fair

Physics & Astronomy Senior Division

1st Place: FerroFilter: A novel one-step ferrofluid-based water filtration mechanism for efficient removal of metals, microbes and microplastics

Project ID: 151511

School: Colleyville Heritage High School

Students: Ashwin Katta

2nd Place: The Podium Rocket Fallacy?

Project ID: 153823

School: NORTHSTAR HIGH SCHOOL

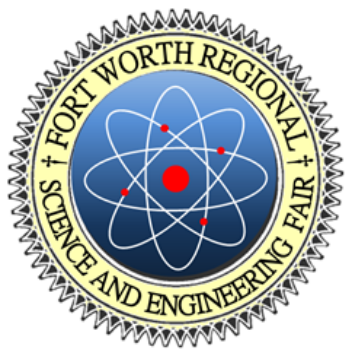
Students: Owen McGilberry

3rd Place: Blood Spatter Analysis Physics

Project ID: 141972

School: Grapevine High School

Students: Palmer Riley



Fort Worth Regional Science and Engineering Fair

Plant Sciences

Senior Division

1st Place: Clean water is appealing: The Analysis of Citrus sinensis, Persea americana, and Musa Peels as a Biocoagulant in Water Purification

Project ID: 146057

School: Colleyville Heritage High School

Students: Afrah Sulthar

2nd Place: Genetic Modification of Medicago sativa to increase the Production of Proanthocyanidins in Epidermal Tissues

Project ID: 150770

School: TEXAS ACADEMY OF MATHEMATICS AND SCIENCES H S

Students: Sai Sarnala

3rd Place: Analyzing the Impact of Carbonic Acid in Strengthening the Resistance of Pyrocystis Fusiformis

Project ID: 144582

School: Colleyville Heritage High School

Students: Elizabeth Hotchkiss

3rd Place: Assessing The Impact of Melatonin and Acetic Acid on Phytoremediation in Elodea canadensis

Project ID: 144824

School: Colleyville Heritage High School

Students: Samantha Zelling, Grace Nguyen