

2021 Metro Richmond STEM Fair

Senior Division Category Results

Senior Behavioral and Social Sciences

1st Place Ashley Hagan

The Effect of Online and In-Person Learning on Grades

Senior Biochemistry

1st Place Aadhira Gopalan

The effect of storage conditions on the effectiveness of α -galactosidase enzyme supplements

Senior Botany

1st Place Maria Angel Zamora

*The effect of lipid second messenger Phosphatidic Acid (PA) on Spinach (*Spinacia oleracea*) under salt stress*

2nd Place Perisa Ashar

Development of a Novel Biomarker Panel and Investigation of Plasma and Tumor miRNAs for Rapid Identification of Lung Cancer by Blood Tests Utilizing Next-Generation Sequencing, Bioinformatics, and In-Vitro Analyses

2nd Place Bhavana Adhikari

*The Effect of Various Allelopathic Plants on the Suppression of *Taraxacum officinale**

3rd Place Nivriti Vanga

*The Effect of Magnesium Sulfate on *Epipremnum Aureum*'s Radicle Growth*

Senior Chemistry

1st Place Daniel Philip

The Effect of Type of Catalyst on Efficiency of Water-Splitting with an Application Towards Solar Energy

Senior Computer Science

1st Place Laasya Konidala

A Novel Integrative WSI-Based Deep Learning Framework For Breast Cancer IMS Classification

Senior Earth & Space Sciences

1st Place Hemansh Adunoor

Comparing Exoplanet Detection Techniques Using Various Exoplanet Distances

2nd Place Thanvi Parupati

The Effect of the Form of Heat Resistant Product on the Heat Damage of the Hair

2nd Place Anooshka Pendyal

*Determining Relatedness of *L. Kempii* Nesting Sites Using Bioinformatics*

2nd Place Anvita Korrapati

The Effect of Coronal Mass Ejection Acceleration (km/s^2) In Relevance of Earth's Orbital Position on Gamma Ray Dose Equivalent Rate ($n\text{Sv/H}$) in Virginia

3rd Place Yash Saxena

The Effect of Using Multiple Languages on Parkinson's Disease Detection with Machine Learning

Senior Engineering

1st Place Chirayu Nimonkar

The Effect of Rat Brain Phantom Construction on Mimicry of the True Brain Model

Senior Environmental Science

1st Place Tamas Gal

The Effect of Soil Quality on The Viability of Earthworms

Senior Mathematics

1st Place Mahin Atturu

Using Transit Light Curves for Ground-Truthing the Orbital Radius and Planet Radius of Exoplanets Examined by the Kepler Space Telescope

2nd Place Ojas Joshi

The Effect of Conditional Processing on Atlantic Hurricane Prediction Accuracy

2nd Place Sania Jain

Multiple Regression Modeling to Predict Changes in US GDP Using Stock Market Volatility and Unemployment Rates.

3rd Place Aryan Mhaskar

The Effect of Bio-compatible Coagulants on Reduction of Microplastics in Water

3rd Place Nikki Kumar

Statistical Analysis of United States Alzheimer's Disease Data 2010-2020

Honorable Mention Philip Naveen

Hydrocortisone-Induced Decay Predicted via an Automated Computing Nexus

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Senior Medicine and Health

1st Place **Annabel Tang**

Correlation of the National Institute of Health Stroke Scale (NIHSS) with Emergent Large Vessel Occlusion (ELVO) in Stroke Alert Patients – A Single-Center Experience

2nd Place (TIE) **Saniya Sangle**

The Effect of Vitamin Supplements on the pH of Stomach Acid

2nd Place (TIE) **Aashka Shah**

The Effect of Early Monocyte Reconstitution on CD4+ and CD8+ T Cell Populations after Allogeneic Stem Cell Transplantation

Senior Zoology

1st Place **Mrunal Kute**

*Analyzing Blue Light on *Dugesia tigrina* Regeneration to Model Human Epidermal Growth Processes*

2nd Place **Emily Lionberger**

*The Effect of Oxygenator Design on the Survival Rate of *Culex tarsalis* Larvae*

3rd Place **Akul Miriyala**

The Effect of The pH of Water On The Bioluminescence of Bioluminescent Dinoflagellates

Senior Microbiology

1st Place **Monona Zhou**

The Effect of Coronavirus Species on the Binding Strength to a Neutralizing Antibody

2nd Place **Avirat Raj**

*The Effect of Water-Soluble Vitamins on *S. Cerevisiae* Growth Rate*

Senior Physics

1st Place **Cameron Sharma**

The Effect of Surface Dynamics on Atmospheric Water Harvesting

2nd Place **Erum Vohra**

The Effect of Various Wavelengths on the Detection of Point Sources in the Galactic Center

3rd Place **Shrinidhi Nadgouda**

Analyzing Viscosity Uniformity in Non-Newtonian Fluids