

Northern Virginia Regional Science & Engineering Fair Entries



March 4, 2023

Dat Le
Fair Director

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NORTHERN VIRGINIA REGIONAL SCIENCE & ENGINEERING FAIR

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Animal Sciences

7 AS	100	Lorenzen-Schmidt, Luca <i>How Wolves Adapt to Different Environments</i>	George Washington
7 AS	101	Tregaskis Gordon, Karsten <i>Observation of Squirrels in an Urban Habitat Without Disruption</i>	George Washington
7 AS	102	Weber, Ryan <i>Does Temperature Affect the Migration Routes of the American Golden Plover?</i>	Hammond
7 AS	103	Komlodi, Kira; Seyran, Zeynep <i>The Effect of Global Warming on the Percent Loss of Honeybee Colonies (TEAM)</i>	Jefferson
8 AS	104	Finnegan, Sean <i>The Effect of Different Scents on Worms' Activity</i>	Swanson
9 AS	105	Ellis, Christabel <i>Watch Your Step!</i>	Alexandria City HS
9 AS	106	Gooden, Elisha <i>Bird Call Frequency Variations Within Five Common Eastern Songbirds</i>	H-B Woodlawn

7 Total Projects in Animal Sciences

Behavioral and Social Sciences

7 BE	200	Hazlett, Amelia <i>Name That...Color??? Testing the Stroop Effect</i>	George Washington
7 BE	201	Wondim, Noemi <i>How Do Different Types of Music Affect a Person's Concentration</i>	Jefferson
7 BE	202	Dudley, Devenair; Tejan-Bah, Amad <i>Sleep, Music and Mood (TEAM)</i>	Patrick Henry
8 BE	203	Kiamie, Faris <i>The Effect of the Amount of Flights at IAD on the Amount of Accidents/Incidents on the Road</i>	Williamsburg
8 BE	204	LaGarde, Catherine <i>The Effect of Different Music Genres on Concentration</i>	Jefferson
8 BE	205	Lester, Siena <i>The Effect of Age on the Accuracy of Eyewitness Testimony</i>	George Washington
8 BE	206	Singh, Aman; Cocker, George <i>The Effect of Age on Reaction Time to a Visual Stimulus (TEAM)</i>	Williamsburg
10 BE	207	Marcy, Ava <i>How Music Affects Testing Speed</i>	Alexandria City HS
11 BE	208	Stroud, Lanyi <i>A Cross-Racial Study of Level of Confidence in Federal Government Management of COVID-19 Vaccines</i>	Yorktown

9 Total Projects in Behavioral and Social Sciences

Biochemistry

7 BI	300	Siddiqi, Husna; Assadi, Rayhana <i>Slimy Glue (TEAM)</i>	Hammond
8 BI	301	Thulson, Benjamin <i>Does Rough Treatment of DNA Samples Cause Fragments to Be Shorter in Gel Electrophoresis?</i>	George Washington
8 BI	302	Casadaban, Lorraine; Stout, Lily <i>The Effect of Different Acne Medications on the Size of the Inhibition Zone (TEAM)</i>	Williamsburg
10 BI	303	Babic, Harlow <i>How Does the Type of Starch Affect the Water Solubility of Bioplastic?</i>	Alexandria City HS
11 BI	304	Bartrum, Olivia <i>Analysis of Anti-Inflammatory Compounds in Drug Absorption and Calculated Transdermal Permeability Utilizing the Parallel Artificial Membrane Permeability Assay (PAMPA)</i>	Wakefield

5 Total Projects in Biochemistry

Chemistry

7 CH	400	Cordon, William <i>The Effect of Different Substances on Mummification</i>	Kenmore
7 CH	401	Menta, Rahil <i>The Effect of the Type of Sports Beverage on the Electrolyte Concentration</i>	Williamsburg
7 CH	402	Oberkirsch, Purvi <i>Comparison of Electrolytes in Sports' Drinks and Juices</i>	Gunston
7 CH	403	Perez Castanaza, Fatima <i>Elephant Toothpaste</i>	Patrick Henry
7 CH	404	Butler, Leah; LaGarde, Laurel <i>Electrolytes in Sports Drinks (TEAM)</i>	H-B Woodlawn
8 CH	405	Adhi, Romeesa <i>The Effect of Acidic Beverages on the Mass of Eggshells</i>	Jefferson
8 CH	406	Barua, Preontee <i>What is the Effect of Solvents on the Surface Tension of Water?</i>	Jefferson
8 CH	407	Ganzorig, Ronald <i>The Effect of Type of Orange Juice on Amount of Iodine Solution</i>	Swanson
8 CH	408	Hjerstedt, Gabriel <i>The Effect of the Number of Homemade Batteries Run in Series on the Amount of Energy Generated</i>	Williamsburg

8 CH	409	Jones, Delanie <i>The Effect of Conditions on Yeast Fermentation</i>	Dorothy Hamm
8 CH	410	Keane, Taogh <i>The Effect of Reactant on Battery Output</i>	H-B Woodlawn
8 CH	411	Lawler, Catherine <i>The Effect of the Type of Cleaning Method Used on the Amount of Gluten Cross-Content</i>	Williamsburg
8 CH	412	Seaver, Aelwen <i>The Effect of the Type of Battery on the Amount of Voltage</i>	Swanson
9 CH	413	Sidahmed, Gaia <i>Baking Powder's Effect on Leavening</i>	Alexandria City HS
10 CH	414	DeMots, Avery <i>The Effect of Combined Catalysts on the Efficiency of Water Splitting Reactions</i>	Washington-Liberty
10 CH	415	Freeman, Anna <i>The Effect of the Amount of Gelling Agent on the Density of Marshmallows</i>	Washington-Liberty
10 CH	416	O'Toole, Gabriel <i>The Effect of Preparation Method of Various Foods on Iron Content</i>	Yorktown
10 CH	417	Schiaffino, Elizabeth <i>Measuring Electrolyte Content of Sports Drinks</i>	Wakefield

10 CH	418	Scharnweber, Lillian; White, Seamus <i>The Effect of the Amount of Carbon in Nails on the Amount of Rust Produced (TEAM)</i>	Alexandria City HS
11 CH	419	Opshara, Afifa <i>Does the Amount of Baking Powder Affect the Height of a Muffin?</i>	Alexandria City HS

20 Total Projects in Chemistry

Engineering

7 EN	500	Dementi, Kye <i>Strength in Shapes</i>	Hammond
7 EN	501	Leaning, Alexandra <i>The Peltier Tile Watch</i>	Gunston
7 EN	502	Nizami, Hennah <i>Fun Flying</i>	Patrick Henry
7 EN	503	Robasson, Sydney <i>Why You So Dense: The Effect of Density on the Strength of Buildings</i>	Hammond
8 EN	504	Ainspan, Isaac <i>Mechanical Keyboards: How to Build and Change the Sound of Them</i>	H-B Woodlawn
8 EN	505	Anderson-Sprecher, Isaac <i>The Effect of Changing the Sweep Frequency on How a Wave Form is Displayed</i>	Kenmore
8 EN	506	Lyon, Nora <i>The Effect of the Length of a Trebuchet's Short Arm on the Distance the Ammunition Travels When I Launch It</i>	Swanson
8 EN	507	McComis, Matthew <i>The Effect of Propeller Shape on Peak Voltage Generated</i>	Kenmore
8 EN	508	Miller, Peter <i>The Impact of Surface Area on Lift</i>	Swanson

8 EN	509	Tarpley, Michael <i>C++ Retro Gaming Console</i>	H-B Woodlawn
8 EN	510	Vasisht, Janak <i>Python Password Cracker</i>	H-B Woodlawn
8 EN	511	Ward, Benjamin <i>How Does the Angle of a Solar Panel Affect the Amount of Energy Produced?</i>	Kenmore
8 EN	512	Kwan, Alexander; Kwan, Benjamin <i>The Effect of Viscosity on Hydroelectric Power (TEAM)</i>	Dorothy Hamm
8 EN	513	Shewchuk, Abigail; Gannon, Ella <i>Which Wing? (TEAM)</i>	George Washington
9 EN	514	Kambhampaty, Kedar <i>The Effect of Algorithm Choice on Automated Face Detection in Images of Occluded Faces</i>	Washington-Liberty
9 EN	515	Kiesel, Emily <i>The Effect of the Distance Between Coils on a Three-Stage Mass Driver</i>	Washington-Liberty
9 EN	516	Hettinger, Grace; Espiritu, Arianna <i>Sun Seeker; Mechanical Sunflower (TEAM)</i>	Alexandria City HS
10 EN	517	Anderson, Karin <i>The Effect of Metallic Foil and Different Geometric Shapes on Light Reflection</i>	Washington-Liberty

10 EN	518	Hemsch, Emma <i>The Effect of the Catholyte on the Power Produced by a Microbial Fuel Cell</i>	Washington-Liberty
10 EN	519	Hoganson, Taylor <i>Warren Truss Bridges: Is Bigger Better?</i>	Alexandria City HS
10 EN	520	Khanna, Evan <i>The Black Hole Project</i>	Alexandria City HS
10 EN	521	Shah, Jaya <i>The Effect of Weather Condition on Autonomous Vehicle Sensor Accuracy</i>	Washington-Liberty
10 EN	522	Shiffer, Andrei <i>The Power of Excel: Can Excel Be Used as an Easier, More Friendly Game Engine?</i>	Alexandria City HS
10 EN	523	Volpe, Claudia <i>The Effect of the Type of Heat Source on the Number of Volts It Can Produce Using a Thermoelectric Generator</i>	Washington-Liberty
10 EN	524	Rami, Rayyan; Curry, Norah <i>Retractable XC Spikes (TEAM)</i>	Alexandria City HS

25 Total Projects in Engineering

Environmental and Earth Sciences

7 EV	600	Bell, Daisy <i>The Effect of Radiation on Seed Germination</i>	Dorothy Hamm
7 EV	601	Bryant, Andrew <i>Water Quality Experiment</i>	Hammond
7 EV	602	Gennarelli, Evelyn <i>To Make Water From Energy</i>	George Washington
7 EV	603	Ghosh, Siddharth <i>The Effect of APS Schools on Stormwater Quality</i>	Williamsburg
7 EV	604	Gomez Crummett, Candela <i>The Effect of the Type of Preservative on the Mass of a Cut Flower</i>	Williamsburg
7 EV	605	Procida, Eliana <i>Turning Food Waste Into Paper</i>	H-B Woodlawn
7 EV	606	Snipe, Amelia <i>The More Eco-Friendly Plastic</i>	George Washington
8 EV	607	Burks, Thomas <i>Monte Carlo Model of Wind-Assisted Container Ships</i>	George Washington
8 EV	608	Pines, Asher <i>The Effect of Filtration Methods on Environmental Water Sources</i>	Williamsburg

8 EV	609	Schroeder, Zoe <i>The Effect of the Type of Method on the Amount of Oil Cleaned Up</i>	Kenmore
8 EV	610	Shoffner, Sophia <i>The Effect of the Type of Filter on the Phosphorus Levels of Simulated Fertilizer Runoff</i>	Swanson
8 EV	611	Tulgaa, Anu-Ujin <i>Earthquake</i>	Gunston
8 EV	612	Waterhouse, Reese <i>An Analysis of Water Quality in Alexandria</i>	George Washington
8 EV	613	Wunderlich, Caleb <i>The Effect of Drought on Soil's Ability to Retain Water</i>	Kenmore
8 EV	614	Bu, Matthew; Decker, Carson <i>The Relationship Between Water Filtration Method and Contaminants Removed (TEAM)</i>	Dorothy Hamm
8 EV	615	Kammerman, Noa; Jacob, Erin <i>The Relationship Between the Age of a Tree and Its Soil Quality (TEAM)</i>	Dorothy Hamm
8 EV	616	Umerov-Todoroki, Maya; Louis, Raika <i>The Effect of Nitrogen or Phosphate on Dissolved Oxygen Levels (TEAM)</i>	Williamsburg
9 EV	617	Dorotheo, Sloane <i>The Effect of Carbon Dioxide on Temperature</i>	Yorktown

9 EV	618	McCommons, Margaret <i>Rainfall Impact on Stream Health</i>	Alexandria City HS
9 EV	619	Mukhtar, Ayah <i>Powering the Future: Comparing Renewable and Non-renewable Fuels in Heat Production</i>	Wakefield
9 EV	620	Batenhorst, Maya; Hardwick, Katie <i>The Effect of the Location of the Sediment Near the Potomac River on the Level of pH and the Textural Classification (TEAM)</i>	Yorktown
9 EV	621	Bright, Eleanor; Verhoeven, Gaetanina <i>Bigger Storms Ahead: How Does the Increasing Temperature in the Oceans Affect the New Hurricanes? (TEAM)</i>	Alexandria City HS
10 EV	622	Adhi, Roayba <i>The Effect of Food-Grade Flocculants on the Aggregation of Simulated Microplastics in Polystyrene-Contaminated Water</i>	Washington-Liberty
10 EV	623	Akay, Peter <i>Effect of Material Used to Filter Water on Amount of Filtration</i>	Yorktown
10 EV	624	Beaumont, Nicola <i>The Effects of Salinity on the Growth of Chlorella</i>	H-B Woodlawn
10 EV	625	Cozette, Olivia <i>The Effect of Different Locations of the Susquehanna River Relative to the Conowingo Dam on the Concentrations of Different Chemicals</i>	Washington-Liberty
10 EV	626	Docena, Nico <i>The Effect of the Material Used as an Oil/Water Separation Membrane on Separation Efficiency</i>	Washington-Liberty

10 EV	627	Eichers, Julian <i>The Effect of Harmful Algal Events on the Population of North Atlantic Right Whales from 1990-2021</i>	Arlington Tech
10 EV	628	Encinas Mendoza, Melanie <i>The Effect of Different Types of Rocks on Saltwater Absorption</i>	Wakefield
10 EV	629	Pickard, Elle <i>Determination of Per- and Polyfluoroalkyl Substances, Nitrates, and Phosphates in Different Locations on the Potomac River</i>	Washington-Liberty
10 EV	630	Sagatov, Alina <i>What Time Period Creates the Most Amount of Biofuel in the Least Amount of Time?</i>	Washington-Liberty
10 EV	631	Shapiro, Frances <i>The Effect of the Type of Cover Crop on Water Runoff and Soil Erosion</i>	Washington-Liberty
10 EV	632	Sjetnan-Day, Erika <i>The Effect of Chloroplast Pigmentation in Marine Algae on the Amount of Dissolved Oxygen Produced</i>	Washington-Liberty
10 EV	633	Tomanio, Braelynn <i>The Effect of Artificial Turf on Our Waterways</i>	Alexandria City HS
10 EV	634	Witmer, Skye <i>Where Are We Most Vulnerable to Electromagnetic Radiation Within our Community?</i>	Alexandria City HS
10 EV	635	Ariunbayasgalan, Maral; Abdelbagi, Hanan <i>The Effect of Different Levels of Moisture in Grass on the Absorption Rate (TEAM)</i>	Washington-Liberty

11 EV	636	Baron, Bridget <i>Measuring Ventilation via Carbon Dioxide</i>	Alexandria City HS
11 EV	637	Beasley, Marion <i>The Effect of Different Numbers of Oysters on River Water Quality</i>	Yorktown
11 EV	638	Silva, Leila <i>The Effect of Green Roofing on Solar-Cell Performance</i>	Yorktown
12 EV	639	Ermovick, Ryan <i>The Effect of Cement Type on Concrete Strength</i>	Yorktown

40 Total Projects in Environmental and Earth Sciences

Mathematics and Computer Science

10 MC	700	Jemaneh, Zechariah <i>How Accurate Can a Novel Advanced NBA Statistic Be When Compared to the Player Efficiency Rating?</i>	Alexandria City HS
10 MC	701	Song, Sicheng <i>A Deep Learning-Oriented AI Solution to Fire Detection and Recognition for Wildfires</i>	Episcopal
10 MC	702	Hardies, Alexander; Andersen, Elias <i>Comparing Efficiency Between ATX and 12-volt Computer Power Systems (TEAM)</i>	Alexandria City HS
10 MC	703	Sayre, Julia; Winn, Mia <i>Simulating the Effects of Poison on the Human Body (TEAM)</i>	Alexandria City HS

4 Total Projects in Mathematics and Computer Science

Medical and Health Sciences

7 ME	800	Butler, Katherine <i>What is the Effect of Antacids on the pH Levels of Stomach Acid?</i>	H-B Woodlawn
7 ME	801	DeFilippi, Georgia <i>The Effect of Distance on the Circumference of a Splatter</i>	Jefferson
8 ME	802	Cunningham, Josephine <i>What Is the Best Drink to Get Electrolytes?</i>	Hammond
9 ME	803	Anwar, Ayesha <i>BLASTing Flu Viruses</i>	Alexandria City HS
9 ME	804	Dieguez, Kenshu <i>The Effect of the Type of Pre-Trained CNN Model on the Accuracy of Classifying Covid-19 from Lung X-rays</i>	Yorktown
9 ME	805	South, Caroline <i>The Effect of Over-the-Counter Medicine Coating on the Release Time in a Low pH Environment</i>	Washington-Liberty
10 ME	806	Martah, Sara <i>The Effect of Cook Time on the Amount of Vitamin C Present in Broccoli</i>	Washington-Liberty
10 ME	807	Mohanty, Anna <i>The Effect of Axon Diameter on Heart Rate Variability</i>	Washington-Liberty
10 ME	808	Yang, Lihao <i>Transcriptomic and Epigenomic Analysis of Regenerating and Non-Regenerating Axonal Injury Models Reveals STAT2 as a Potential Drug Target</i>	Episcopal

9 Total Projects in Medical and Health Sciences

Microbiology

7 MI	900	St. Clair, Lauriston <i>Genetic Probability</i>	George Washington
7 MI	901	Kamens, Harper; Keeton, Annalena <i>How is Our Pollution Affecting Diatoms? (TEAM)</i>	George Washington
9 MI	902	Goody, Claire <i>The Effect of the Type of Mouthwash on the Inhibition of Escherichia coli (E. coli)</i>	Washington-Liberty
9 MI	903	Lach-Hab, Nadia <i>Effect of Treatment Type of Escherichia coli on E. coli Zone of Inhibition (mm)</i>	Washington-Liberty
9 MI	904	Muldoon, Aidan <i>How Well Do Mainstream Cleaning Products Actually Work on Bacteria?</i>	Alexandria City HS
10 MI	905	Goldener, Sylvia <i>What is the Effect of Common Metals on Bacterial Growth?</i>	Washington-Liberty
10 MI	906	Hubbard, Leia <i>Can Yogurt Inhibit the Growth of K-12 Escherichia coli (E. coli)?</i>	Alexandria City HS
10 MI	907	Smaragdis, John <i>The Effect of Different Concentrations of Isopropyl Alcohol in Homemade Hand Sanitizer on Reducing the Growth of Bacteria Commonly Present on Hands</i>	Washington-Liberty
10 MI	908	Levin, Nate; Khani, Cambyses <i>The Effect of Reproductive Method and Rate of Food Generation on the Population Size and Genetic Evolution of Computer-Simulated Choanoflagellate-like Unicellular Organisms (TEAM)</i>	Yorktown

12 MI 909 Westwater Brodsky, Julia
Characterization of Novel Acinetobacter baumannii Phages EAb3 and EAb7 H-B Woodlawn

10 Total Projects in Microbiology

Physics and Astronomy

6 PH	1000	Ayalew, Maedot <i>The Effect of Distance on Light Intensity</i>	Kenmore
7 PH	1001	Carpenter, Kylie <i>The Effect of Playground Surface on Maximum Fall Height of Egg Without Breaking</i>	Williamsburg
7 PH	1002	Hopkins, Vivienne <i>Measuring Skyglow</i>	George Washington
8 PH	1003	Beckner, Colin <i>Airplane Wingtips</i>	Swanson
8 PH	1004	La, Myriam <i>What is the Relationship Between Plam Width and the Amount of Weight a Crocheted Swatch Can Bear While Stretching 2 cm?</i>	Williamsburg
8 PH	1005	Moran-Uriona, Tomas <i>The Effect of Temperature on the Magnetism of Neodymium Magnets</i>	Swanson
8 PH	1006	Yoo, Andrew <i>The Effect of Magnesium Carbonate Chalk on Friction</i>	H-B Woodlawn
8 PH	1007	Hutchison, Ronan; Burducea, Stephan <i>The Best Material for Soundproofing (TEAM)</i>	H-B Woodlawn
9 PH	1008	Hogans, Catherine <i>What Material of Metal Wire Will Create the Strongest Electromagnet?</i>	Washington-Liberty

9 PH	1009	Leighton, Declan <i>The Effect of Electrode Spacing on the Force Generated by Magnetohydrodynamic Drive</i>	Yorktown
9 PH	1010	Miller, Andrew <i>The Effect of 3D Print's Extrusion Temperature on its Compression Strength</i>	Yorktown
9 PH	1011	Monroy, Sebastian <i>The Effect of Flap Deflection Angle on an Airplane's Takeoff Time and Speed</i>	Washington-Liberty
9 PH	1012	Pericak, Ryan <i>The Effect of the Voltage of the Battery on the Strength of an Electromagnet</i>	Yorktown
9 PH	1013	Ilie, Victor; Meydenbauer, Luke <i>The Effect of Different Materials on the Dampening of Sound (TEAM)</i>	Washington-Liberty
9 PH	1014	Iov, Sebastian; Keene, Massey <i>UV Radiation: What Can Stop Ultraviolet? (TEAM)</i>	Alexandria City HS
10 PH	1015	Wiley, Claire <i>The Effect of Temperature on the Bounce of a Tennis Ball</i>	Wakefield

16 Total Projects in Physics and Astronomy

Plant Sciences

6 PS	1100	Zee, Rebecca <i>The Effect of Different Light Sources on the Height of Bean Plants</i>	Kenmore
7 PS	1101	Foerster, Nolan <i>The Effects of Pollution on Algae</i>	Jefferson
7 PS	1102	Oakey, Graham <i>The Effect of Local Waters on the Growth of Bean Plants</i>	George Washington
7 PS	1103	Vogel, Page <i>The Effect of Invasive Species on Native Northern Virginia Plants</i>	George Washington
8 PS	1104	Carestio, Blake <i>The Effect of Soil pH Level on Radish Seed Germination</i>	Kenmore
8 PS	1105	Grajales, Olivia <i>What Conditions Best Preserve Your Fruit?</i>	George Washington
8 PS	1106	Quinones, Mia <i>Artificial vs. Natural: Which Will Win?</i>	George Washington
8 PS	1107	Sherman, Lila <i>The Effect of Sunscreen on Aquatic Plant Growth</i>	Dorothy Hamm
8 PS	1108	Fallon, Alexandra; Swartz, Lydia <i>The Effect of the Color of Light on How Tall a Plant Grows (TEAM)</i>	Dorothy Hamm

9 PS	1109	Dalley, Lilah <i>The Effect of Different Growing Techniques on the Growth of a Basil Plant Over Time</i>	Yorktown
9 PS	1110	Mendoza, Alessandra <i>The Effect of Different Wavelengths on the Growth of Radishes</i>	Washington-Liberty
9 PS	1111	Snyder, Elliana <i>Plant Paper Chromatography</i>	Washington-Liberty
9 PS	1112	Uddin, Maqsuda; Lopez, Emely <i>The Effect of Different Solutions to Determine Which Rose Survives the Longest (TEAM)</i>	Wakefield
10 PS	1113	Collard, Megan <i>The Effects of Different Liquids on Plant Growth</i>	Alexandria City HS
10 PS	1114	Edsall, Alba <i>The Effect of the Percentage of Polystyrene Microplastics in Soil on the Root Length of Raphanus sativus Over a Four-Week Period</i>	Washington-Liberty
10 PS	1115	FitzHarris, Olie <i>The Effect of Water pH on Mung Bean Length and Mass</i>	Washington-Liberty
10 PS	1116	Wearmouth, Isla <i>The Effect of Aquaponic Farming, in Comparison to Nitrate-Fertilized Soil, on the Growth of Lettuce Plants</i>	Washington-Liberty
11 PS	1117	Fitzgerald, Lia; Enow, Madison <i>Bleach Leach (TEAM)</i>	Alexandria City HS

11 PS 1118 Rizzo, Amelia; Helms, Helena
The Effect of Water Temperature on Algae Growth (TEAM) Wakefield

19 Total Projects in Plant Sciences