

Congratulations to the Virginia winners of the Regeneron top 300 students today. Science Supervisors and Science Research teachers are encouraged to seize this opportunity and to actively participate in the Virginia Academy of Science sponsored Virginia Junior Academy of Science Symposium each year. Your involvement can inspire and support the next generation of young scientists. The Regeneron Science Talent Search offers students a national platform to showcase their original research, celebrating the dedication and innovative discoveries of young scientists who bring fresh perspectives to major global challenges. Each of the 300 scholars and their schools will receive \$2,000, which is to be used for STEM-related activities. Scholars were selected for their exceptional research, leadership skills, community involvement, academic commitment, creativity in posing scientific questions, and outstanding potential as STEM leaders, as demonstrated through their original, independent research projects, essays, and recommendations. Among the 300 Regeneron Top Seniors, 15 are from Virginia, including six students involved with VJAS, such as the VJAS Junior Officer of President. The VJAS member schools are Lightridge High School in Loudoun County, Albemarle High School in Albemarle County, Governor's School @ Innovation Park in Prince William County, and Mathematics and Science Center at Ocean Lake High School in Virginia Beach City. Thomas Jefferson High School for Science and Technology in Alexandria is listed as an independent school in VJAS.

Vidya Ambati, Age: 17

Albemarle High School, VA

Project Title: Haloperidol Inhibits Inflammasome Activation via the Novel Receptor LAMTOR1 and Reduces the Risk of Rheumatoid and Gouty Arthritides. VJAS Winner

Sanchali Banerjee, Age: 18

Thomas Jefferson High School for Science and Technology, VA

Project Title: LUSO-GenAI: A Novel Framework Using Conditional Generative Adversarial Networks (cGANs) To Synthesize Spatial Land Use Strategy Through Economic-Environmental Payoff Optimization. VJAS

Kate Choi, Age: 18

The Potomac School, VA

Project Title: Improving Racial Equity in Skin Cancer Detection: Leveraging Artificial Intelligence-Driven Synthetic Image Generation, Cascading Convolutional Neural Networks and Affordable Diagnostic Hardware for Accurate Cancer Screening Across All Skin Tones

Anaahita Kaashyap, Age: 18

The Potomac School, VA

Project Title: Development and Evaluation of HMPB-Cur-Pip Nanoparticles as a Novel, Cost-Effective, Anti-Inflammatory Therapy for Rheumatoid Arthritis

Rania Sophia Lateef, Age: 18

The Governor's School @ Innovation Park, VA

Project Title: Rhythms and Blues: Evaluating the Impact of Artificial Light Exposure and Circadian Disruption on Biobehavioral Systems in *Drosophila melanogaster*.
VJAS winner and Junior Officer President.

Rockwell T. Li, Age: 18

Ocean Lakes High School Mathematics and Science Magnet Center, VA

Project Title: A Clearer Lens to the NanoWorld: Scanning Tunneling Microscope Super Resolution. VJAS

Marina Lin, Age: 18

Thomas Jefferson High School for Science and Technology, VA

Project Title: A Carbon-Aware Ant Colony System Algorithm for the Sustainable Generalized Traveling Salesman Problem.

Erim Ozcan, Age: 18

The Potomac School, VA

Project Title: Parametric Optimization and Discovery of a Low-Noise Toroidal Quadrotor Propeller with a Leading Blade Height Offset for Responsible Wildlife Research.

Phoebe Pan, Age: 18

Thomas Jefferson High School for Science and Technology, VA

Project Title: Data Augmentation Strategies for Improved PM_{2.5} Forecasting Using Transformer Architectures

Kabilan Prasanna, Age: 17

Lightridge High School, VA

Project Title: MasterMind: A Novel Multi-Output Model Approach to Detecting Mental Illnesses Through Natural Language Processing. VJAS Winner

Samvrit Vasudev Rao, Age: 17

Thomas Jefferson High School for Science and Technology, VA

Project Title: A Novel AI Framework for Personalized COPD Treatment Planning: Integrating EHR Analytics and Phenotype-Based Weighted Predictions. VJAS Winner

Patrick Shi, Age: 17

Thomas Jefferson High School for Science and Technology, VA

Project Title: Integrative Genomic Analysis Identifies Novel Causal Genes of Hodgkin's and Non-Hodgkin's Lymphoma

Jaydon Shuan Sun, Age: 17

Thomas Jefferson High School for Science and Technology, VA

Project Title: Synthesis, Crystal Structures and Hirshfeld Surface Analysis of 18-Crown-6 Stabilized Potassium and Ammonium Salt of Oxalatotriphenylstannate

Avnith Vijayram, Age: 17

Thomas Jefferson High School for Science and Technology, VA

Project Title: Graph Networks and Game Theory to Predict Gene Expression Pathways and Cardiotoxicity in Cardiac Cells

Ray Zhang, Age: 17

Thomas Jefferson High School for Science and Technology, VA

Project Title: Biofilm Composition in Clinical Isolates of Fungal *Fusarium* and Development of a Multi-Targeted Antifungal Treatment to Inhibit Proliferation

Quotes from VJAS Alum....

Rania S. Lateef

Thank you so much! I'm so grateful for the role that VJAS has played as in my journey as a scientist.

Samvrit Rao

Thank you so much! VJAS has greatly helped me with my scientific writing and presentation skills, and I'm looking forward to representing Virginia at AJAS in February!

Kabilan Prasanna

Thank you so much! I could not have gotten here without all of your support throughout the VJAS symposium — I am honored to be a part of this community.

On January 23, 2025 Regeneron Pharmaceuticals, Inc. and Society for Science today announced the [top 40 finalists](#) in the 2025 [Regeneron Science Talent Search](#) (STS), the U.S.'s longest-running and most distinguished science, technology, engineering and math (STEM) competition for high school seniors. The finalists were selected from 300 top scholars and nearly 2,500 total entrants, reflecting the exceptional magnitude and caliber of this year's competition, and underscoring the importance of nurturing STEM education, along with supporting accessibility for programs that promote scientific literacy and career readiness. Each finalist will be awarded at least \$25,000, with the top 10 awards ranging from \$40,000 to \$250,000.

We wish the three Virginia top 40 finalists' success in being named to the top 10!

Vidya Ambati



School: Albemarle High School, Charlottesville, VA

Project Title: Haloperidol Inhibits Inflammasome Activation via the Novel Receptor LAMTOR1 and Reduces the Risk of Rheumatoid and Gouty Arthritides

Rania Sophia Lateef

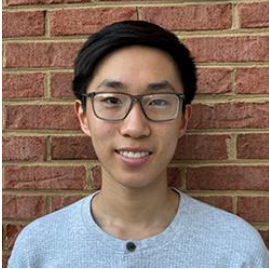


School: The Governor's School @ Innovation Park, Manassas, VA

Project Title: Rhythms and Blues: Evaluating the Impact of Artificial Light Exposure and Circadian Disruption on Biobehavioral Systems in *Drosophila melanogaster*

Student President of Virginia Junior Academy of Science

Ray Zhang



School: Thomas Jefferson High School for Science and Technology, Alexandria, VA

Project Title: Biofilm Composition in Clinical Isolates of Fungal *Fusarium* and Development of a Multi-Targeted Antifungal Treatment to Inhibit Proliferation