



High School Seniors Win \$1.8 Million at Regeneron Science Talent Search 2024 for Innovative Scientific Research on Artificial Intelligence, Cancer Metabolism and Mathematical Optimization

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\$250,000 top award goes to Achyuta Rajaram in the nation's oldest and most prestigious Science, Technology, Engineering and Math (STEM) competition for high school seniors

TARRYTOWN, N.Y. and WASHINGTON, D.C., March 12, 2024 (GLOBE NEWSWIRE) -- [Regeneron Pharmaceuticals, Inc.](#) (NASDAQ: **REGN**) and [Society for Science](#) (the Society) announced that Achyuta Rajaram, 17, of Exeter, NH, won the top award in the [Regeneron Science Talent Search](#) (STS) 2024, America's oldest and most prestigious science and math competition for high school seniors.

The competition, now in its 83rd year, has consistently identified young innovators who become tomorrow's STEM leaders. The 2024 finalists demonstrated extensive scientific knowledge through research and interviews while showcasing their commitment to addressing societal issues, passion for discovery, noteworthy leadership and community involvement.

Forty finalists, including Achyuta, were honored this evening during an award ceremony emceed by American Broadcaster Soledad O'Brien. More than \$1.8 million was awarded to the finalists, who were selected from among the largest entrant pool since the 1960s through a holistic evaluation process.

- **Achyuta Rajaram** won first place and **\$250,000** for developing an automatic method to discover which parts of a computer model are involved in decision-making. This knowledge sheds light on what these algorithms are "thinking," which can help make them more effective, fair and safe.
- Second place and **\$175,000** went to **Thomas Cong, 17, of Ossining, NY** for investigating the rapid growth of certain cancers and whether information controlling metabolism is primarily controlled by the expression of genetic information. He found that immune cancers have pronounced differences in metabolism and gene expression, which suggests that a more complex landscape of metabolic variation exists and gives further insight into cancer studies.
- Third place and **\$150,000** went to **Michelle Wei, 17, of San Jose, CA** for finding that second-order cone programming problems can be solved more quickly than previously thought by converting the original problem into a modified form. Problems of this type appear frequently in areas ranging from supply chain optimization to electrical power distribution to financial portfolio management or machine learning, and she hopes her research may lead to process optimizations across various industries.

"Congratulations to the winners of this year's Regeneron Science Talent Search," said Maya Ajmera, President and CEO, Society for Science and Executive Publisher, Science News. "The remarkable intellect and ingenuity of these students serves as an inspiration for us all. Their groundbreaking innovations are vital in uncovering the crucial solutions we need now to address our most intractable challenges."

The Regeneron Science Talent Search empowers young people who are passionate about innovation and using scientific discovery to contribute to improving our world. By providing a national stage to present new ideas and challenge old ways of thinking, the competition encourages and rewards a culture of idea sharing, critical thinking and continuous improvement. It also serves as a catalyst to discovering sustainable solutions to the world's most pressing challenges. The judging panel considers how these research endeavors, innovative thinking and leadership qualities demonstrate the students' potential to become future leaders in critical STEM fields.

"Congratulations to the winners of this year's Regeneron Science Talent Search and to all the brilliant finalists," said George D. Yancopoulos, M.D., Ph.D., co-Founder, Board co-Chair, President and Chief Scientific Officer of Regeneron, and a top winner in the 1976 STS. "My own participation in the Science Talent Search during my high school years sparked a lifelong commitment to science and set me on my path of inventing and developing new medicines for previously untreatable diseases. Our finalists are only beginning their journeys, and their extraordinary achievements at such a young age give me hope that they will go on to deliver major innovative breakthroughs that will greatly benefit humanity."

Other top honors from the competition include:

- **Fourth Place: Nathan Wei, 17, of Gainesville, FL** received a \$100,000 award for developing a more sustainable way to create strong and durable plastic polymers that are also recyclable. He believes this approach should also work with

biologically based raw materials, which would make the process even more sustainable.

- **Fifth Place: Zeyneb Kaya, 17, of Saratoga, CA** received a \$90,000 award for creating a natural language processing algorithm, similar to ChatGPT, that could help preserve endangered languages. She found a way to enhance the small training datasets of lesser-known languages by creating accurate translation pairs of words to generate grammatically correct sentences.
- **Sixth Place: Christopher Zorn, 17, of Irvington, NY** received a \$80,000 award for investigating the relationship between RET, a gene involved in cellular signals, and MYC, a set of genes that regulate cell growth and death. He created genetically altered lung cancer cell lines, exposed them to various drugs and measured the MYC protein levels, which appeared at elevated levels and were shown to lead to treatment resistance. His findings suggest paths for further drug research targeting both RET and MYC.
- **Seventh Place: Ella Pilacek, 17, of Oviedo, FL** received a \$70,000 award for researching ways to teach non-native honeybees how to pollinate an endangered native species of orchid. By mixing the compounds of the flower's scent with a sugar solution that bees naturally love, Ella was successfully able to train the bees to be attracted to the scent, potentially making increased pollination and species survival more likely.
- **Eighth Place: Selina Zhang, 18, of Annandale, NJ** received a \$60,000 award for designing and field-testing an eco-conscious, A.I.-powered artificial tree that uses machine learning to selectively lure, identify and kill the destructive and invasive spotted lanternfly. Her eco-friendly prototype tree cost her just under \$200 to build and she hopes it may be a useful tool in controlling invasive species.
- **Ninth Place: Arnav Chakravarthy, 18, of Cupertino, CA** received a \$50,000 award for comparing the genetic origins of a type of immune cell, known as macrophages, in the brain, liver and bone marrow to learn more about how they replenish themselves. Most cells could be traced back to their embryonic beginnings, however, Arnav found evidence that certain brain cells may also be replenished from our bone marrow as we age. His findings may shed light on future targeted therapies for age-related diseases like Alzheimer's.
- **Tenth Place: Alan Bu, 17, of Exeter, NH**, received a \$40,000 award for a math project that gave precise limits on how many spanning trees a planar graph can have. A spanning tree is the connecting point of vertices in a graph. His key insight was to connect the spanning tree counting problem to a separate problem in linear algebra, a different field of math, which he could then attack. His results shed light on the structure of planar graphs.
- **Aditi Avinash, 17, of Highlands Ranch, CO**, was named the Seaborg Award winner and given the opportunity to speak on behalf of the Regeneron Science Talent Search Class of 2024. The 40 finalists chose Aditi as the student who most exemplifies their class and the extraordinary attributes of nuclear chemist Glenn T. Seaborg, who won the Nobel Prize for Chemistry in 1951 and served on the Society's Board of Trustees for 30 years.

All other finalists received \$25,000. All 40 finalists will join the ranks of other STS alumni, many of whom have gone on to have world-changing careers in STEM fields, and some of whom have earned the most esteemed honors in science and math, including the Nobel Prize, National Medal of Science and MacArthur Foundation Fellowships. In total, Regeneron awarded \$3.1 million in prizes through the Regeneron Science Talent Search 2024, including \$2,000 to each of the top 300 scholars and their schools.

Learn more about Regeneron Science Talent Search at <https://www.societyforscience.org/regeneron-sts/>.

For media resources, visit <https://www.societyforscience.org/2024-regeneron-science-talent-search-media-kit>.

About Society for Science

Society for Science is a champion for science, dedicated to promoting the understanding and appreciation of science and the vital role it plays in human advancement. Established in 1921, Society for Science is best known for its award-winning journalism through Science News and Science News Explores, its world-class science research competitions for students, including the Regeneron Science Talent Search, the Regeneron International Science and Engineering Fair and the Thermo Fisher Scientific Junior Innovators Challenge, and its outreach and equity programming that seeks to ensure that all students have an opportunity to pursue a career in STEM. A 501(c)(3) membership organization, Society for Science is committed to inform, educate and inspire. Learn more at www.societyforscience.org and follow us on Facebook, Twitter, Instagram and Snapchat (Society4Science).

About Regeneron

Regeneron (NASDAQ: REGN) is a leading biotechnology company that invents, develops and commercializes life-transforming medicines for people with serious diseases. Founded and led for over 35 years by physician-scientists, our unique ability to repeatedly and consistently translate science into medicine has led to numerous FDA-approved treatments and product candidates in development, almost all of which were homegrown in our laboratories. Our medicines and pipeline are designed to help patients with eye diseases, allergic and inflammatory diseases, cancer, cardiovascular and metabolic diseases, hematologic conditions, infectious diseases and rare diseases.

Regeneron believes that operating as a good corporate citizen is crucial to delivering on our mission. We approach corporate responsibility with three goals in mind: to improve the lives of people with serious diseases, to foster a culture of integrity and

excellence and to build sustainable communities. Regeneron is proud to be included on the Dow Jones Sustainability World Index and the Civic 50 list of the most “community-minded” companies in the U.S. Throughout the year, Regeneron empowers and supports employees to give back through our volunteering, pro bono and matching gift programs. Our most significant philanthropic commitments are in the area of early science education, including the [Regeneron Science Talent Search](#) and the [Regeneron International Science and Engineering Fair \(ISEF\)](#).

For more information about Regeneron, please visit www.Regeneron.com or follow Regeneron on [LinkedIn](#).

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