REGENERON

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# Teen Scientist Researches New Approach to Neurological Damage; Wins Regeneron Science Talent Search 2017

## Indrani Das of New Jersey Wins $250,000 Top Award in Nation's Oldest and Most Prestigious High School Science and Mathematics Competition
## Forty Finalists From Across U.S. Take Home More Than $1.8 Million in Awards Provided by Regeneron

WASHINGTON, March 14, 2017 /PRNewswire/ -- Society for Science & the Public and Regeneron Pharmaceuticals, Inc. (NASDAQ: **REGN**) announced that **Indrani Das**, 17, of **Oradell, New Jersey**, won the top award in the Regeneron Science Talent Search, the nation's oldest and most prestigious science and math competition. Forty finalists, including Indrani, were honored tonight at the annual Regeneron Science Talent Search Awards Gala for their research projects demonstrating exceptional scientific and mathematical ability, taking home more than $1.8 million in awards provided by Regeneron.

**Indrani Das**, 17, of **Oradell, New Jersey**, won the top award of **$250,000** for her study of a possible approach to treating the death of neurons due to brain injury or neurodegenerative disease. A contributor to neuron death is astrogliosis, a condition that occurs when cells called astrocytes react to injury by growing, dividing and reducing their uptake of glutamate, which in excess is toxic to neurons. In a laboratory model, she showed that exosomes isolated from astrocytes transfected with microRNA-124a both improved astrocyte uptake of glutamate and increased neuron survival. Indrani mentors younger researchers and tutors math in addition to playing the piccolo trumpet in a four-person jazz ensemble.

Second place honors and **$175,000** went to **Aaron Yeiser**, 18, of **Schwenksville, Pennsylvania**, for his development of a new mathematical method for solving partial differential equations on complicated geometries. Partial differential equations are ubiquitous in science and engineering and are currently solved using computers. He developed a more efficient way to do this and applied it to the challenging field of computational fluid dynamics. Aaron is a distance runner who competes in cross country and track. During the summer, he teaches sailing in Maine.

Third place honors and **$150,000** went to **Arjun Ramani**, 18, of **West Lafayette, Indiana**, for blending the mathematical field of graph theory with computer programming to answer questions about networks. Typically, these questions require statistical comparisons to hundreds or thousands of random graphs, a process that can take a relatively long time. He developed an algorithm that greatly accelerated the process by reducing the time required to generate these graphs. Arjun is an award-winning debater and accomplished tennis player and coach, and also volunteers at a local science museum.

This year, Regeneron became only the third sponsor of the Science Talent Search, following previous sponsors Westinghouse and Intel. As part of its 10-year, $100 million commitment, Regeneron significantly increased awards to better reward the nation's brightest young scientists and encourage their continued pursuit of scientific innovation. In total, this year's finalists received over $1.8 million in awards provided by Regeneron, which distributed $3.1 million in awards overall to Regeneron Science Talent Search 2017 finalists, scholars and their schools. Regeneron is also supporting efforts to increase nationwide student and school participation in the Science Talent Search.

"Now more than ever, we need our nation's best and brightest young minds to pursue their interest in science and use their talents to solve our world's most intractable problems," said Maya Ajmera, President and CEO of Society for Science & the Public and Publisher of *Science News*. "I congratulate our finalists, who are all poised to become our future scientific leaders." Society for Science & the Public has organized and produced the Science Talent Search since it was founded in 1942.

"Congratulations to the Regeneron Science Talent Search 2017 top winners," said George D. Yancopoulos, M.D., Ph.D., President and Chief Scientific Officer of Regeneron. "My experience as a Science Talent Search winner led me to embark on a career in science, and I hope it will inspire these exceptional young scientists to become the next generation of innovators that will improve the world and solve some of our most pressing challenges as a society."

Other top honors from the competition include:

**Fourth Place:** Byron Xu, 17, of Sugar Land, Texas, received a $100,000 award for his examination of marine seismic data - the reflections of sound waves - with the goal of calculating ocean water temperatures in more detail than current techniques allow.

**Fifth Place:** Archana Verma, 17, of Jericho, New York, received a $90,000 award for her study of the molecular orbital energy dynamics of dyes, which may someday result in windows that produce solar energy.

**Sixth Place:** Laura Pierson, 17, of Oakland, California, received an $80,000 award for her use of theoretical algebra to study the representation theory of mathematically symmetric groups.

**Seventh Place:** Prathik Naidu, 18, of Potomac Falls, Virginia, received a $70,000 award for his creation of a new machine learning software to study 3-D interactions of the human genome in cancer.

**Eighth Place:** Ethan Novek, 18, of Greenwich, Connecticut, received a $60,000 award for his development of a new carbon capture process powered entirely by abundant low-temperature waste heat.

**Ninth Place:** Vrinda Madan, 17, of Orlando, Florida, received a $50,000 award for her study of 24 potential compounds for the treatment of malaria, in which she found two potential candidates that appear to target the disease-causing organism in a novel way and may warrant further study.

**Tenth Place:** Stefan Wan, 17, of Wellington, Florida, received a $40,000 award for his development of a new material to remove phosphate from wastewater and storm runoff and then recycle it to enrich farm soil.

The remaining 30 finalists each received $25,000.

Of more than 1,700 high school seniors who entered the Regeneron Science Talent Search 2017, roughly 300 were named scholars in January. Of those scholars, 40 students were named finalists and invited to Washington, D.C. to compete for the top 10 awards, meet with national leaders and share their projects with the public at the National Geographic Society. These students join the ranks of other Science Talent Search alumni who have gone on to receive more than 100 of the world's most esteemed science and math honors, including the Nobel Prize and the National Medal of Science.

**About the Regeneron Science Talent Search**
The Regeneron Science Talent Search, a program of Society for Science & the Public since 1942, is the nation's oldest and most prestigious science and math competition for high school seniors. Each year, approximately 1,700 student entrants to the Science Talent Search submit original research in critically important scientific fields of study and are judged by leading experts in their fields. Unique among high school competitions in the U.S. and globally, the Regeneron Science Talent Search focuses on identifying the next generation of scientists and engineers who will provide critical leadership in solving some of the world's most pressing challenges while shaping the future of research and development for our nation and the world.

As part of its 10-year, $100 million commitment, Regeneron has significantly increased awards to better reward the best and brightest young talent and encourage their continued pursuit of scientific innovation. Regeneron has nearly doubled the overall award distribution to $3.1 million annually, and increased the top award to $250,000. As a key component of the Regeneron sponsorship, $30 million will be dedicated to supporting initiatives focused on increasing outreach and equity for students across the United States to nurture their interest in the sciences. This funding will support programming designed to reach new and underprivileged communities, support teachers and inspire more students to pursue science research and STEM careers.

Program alumni include recipients of the world's most coveted science and math honors, including eleven National Medals of Science, four Breakthrough Prizes, eighteen MacArthur Foundation Fellowships, two Fields Medals and twelve Nobel Prizes. Distinguished Science Talent Search alumni include Society Trustees Mary Sue Coleman (president emeritus, University of Michigan), Tom Leighton (co-founder and CEO, Akamai Technologies), Paul Maddon (founder of Progenics) and Frank Wilczek (2004 Nobel Prize in Physics), among many others.

Intel was the title sponsor of the Science Talent Search from 1998-2016. For the first 55 years (1942-1997) of the Science Talent Search, Westinghouse was the title sponsor.

Learn more at https://student.societyforscience.org/regeneron-sts and https://medium.com/regeneron-science-talent-search.

**About Society for Science & the Public**
Society for Science & the Public is dedicated to the achievement of young scientists in independent research and to public engagement in science. Established in 1921, Society is a nonprofit whose vision is to promote the understanding and appreciation of science and the vital role it plays in human advancement. Through its world-class competitions, including the Regeneron Science Talent Search, the Intel International Science and Engineering Fair, and the Broadcom MASTERS, and its award-winning magazine, Science News and Science News for Students, Society for Science & the Public 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 Pharmaceuticals, Inc.**
Regeneron (NASDAQ: REGN) is a leading science-based biopharmaceutical company that discovers, invents, develops, manufactures and commercializes medicines for the treatment of serious medical conditions. Regeneron commercializes medicines for eye diseases, high LDL cholesterol and a rare inflammatory condition and has product candidates in development in other areas of high unmet medical need, including rheumatoid arthritis, atopic dermatitis, asthma, pain, cancer and infectious diseases. For additional information about the company, please visit www.regeneron.com or follow @Regeneron on Twitter.

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