



## High School Scientists from Around the World Win Nearly \$8M in Awards, Scholarships at Regeneron International Science and Engineering Fair

May 13, 2022

**\$75,000 Top Award Goes to 17-year-old Robert Sansone for pioneering invention to improve electric motor efficiency in the largest international STEM competition for teens**

TARRYTOWN, N.Y. and WASHINGTON, May 13, 2022 /PRNewswire/ -- [Regeneron Pharmaceuticals, Inc.](#) (NASDAQ: REGN) and [Society for Science](#) (the Society) announced that Robert Sansone, 17, of Fort Pierce, FL, won the **\$75,000 top award** in the 2022 [Regeneron International Science and Engineering Fair](#) (Regeneron ISEF), the world's largest global high school competition, for a project that explored high-efficiency alternatives to induction motors. Other top prizes went to projects in the fields of energy storage, biomedical engineering and robotics.

The top winners were honored during two hybrid award ceremonies, the first of which took place on the evening of May 12 and featured Special Award winners. The Grand Awards Ceremony was held on the morning of May 13 and featured the announcement of the top prize of \$75,000. In total, awards valued at nearly U.S. \$8 million were awarded to the finalists, who were evaluated based on their projects' creativity, innovation and level of scientific inquiry. The competition featured 1,750 young scientists representing 49 states and 63 countries, regions and territories across the world.

**Robert Sansone** won first place and received the **\$75,000 [George D. Yancopoulos Innovator Award](#)**, named in honor of the pioneering drug discoverer and Regeneron co-founder, President and Chief Scientific Officer. Robert's research improved the torque (force) and efficiency of synchronous reluctance motors, which are rugged, efficient, magnet-free alternatives to traditional induction motors. He hopes his research will lead to sustainable manufacturing of electric vehicles that do not require magnets made from strategically important rare-earth elements.

**Abdullah Al-Ghamdi**, 17, of **Dammam, Saudi Arabia**, received one of two [Regeneron Young Scientist Awards](#) of **\$50,000** for modifying a metal-organic material so it could be used to both extract hydrogen from water and safely store it for clean energy production. Because the materials he added are relatively inexpensive, his work could significantly reduce the cost of hydrogen extraction and storage.

**Rishab Jain**, 17, of **Portland, Oregon**, received the second [Regeneron Young Scientist Award](#) of **\$50,000** for developing an AI-based model to enable rapid and cost-effective production of drugs, such as mRNA COVID-19 vaccines, using recombinant DNA technology. His model is trained to optimize the selection of genetic codes used to instruct the mRNA.

"Congratulations to the Regeneron International Science and Engineering Fair 2022 winners," said Maya Ajmera, President and CEO of Society for Science and Publisher of *Science News*. "Every single Regeneron ISEF finalist has shown true dedication, passion, and grit. Their commitment to their research, and perseverance throughout the continued challenges of COVID-19 are an inspiration to us all. We are eager to watch the impact they are sure to make in their communities and chosen fields."

Regeneron ISEF provides a global stage for the best and brightest young scientists and engineers around the world. Founded on the belief that advances in science are key to solving global challenges, Regeneron ISEF supports and invests in the next generation of leading STEM thinkers who are generating ideas and acting as catalysts for the change needed to improve the well-being of all people and the planet.

"These exceptionally talented Regeneron ISEF finalists are some of the brightest minds from around the world and our greatest hope for addressing global challenges in the future," said George D. Yancopoulos, M.D., Ph.D., co-founder, President and Chief Scientific Officer of Regeneron. "Science is critical to the survival of our society, and these finalists have limitless potential to make a positive impact on the world. I congratulate them for their hard work and am eager to see what they achieve in their scientific journeys."

For the first time since 2019, ISEF finalists competed in person. More than half of the finalists gathered in Atlanta, GA at the Georgia World Congress Center and the remaining finalists participated virtually.

Other top honors from the competition include:

**Napassorn Litchiwong**, 17; **Chris Tiditjumreonpon**, 16; and **Wattanapong Uttayota**, 17, of **Mueang Chiang Mai, Thailand** received the **Gordon E. Moore Award** of **\$50,000** for Positive Outcomes for Future Generations for their creation of a faster and more accurate way to diagnose a type of liver fluke infection that can lead to bile duct cancer in humans. The team built and trained neural network software to identify the parasite's eggs in microscopic fecal images with 98% accuracy and then developed a rapid screening questionnaire that was 91% accurate.

**Amon Schumann**, 17, of **Berlin, Germany**, received the **Craig R. Barrett Award for Innovation** of **\$10,000** for developing balloon-borne, light-weight solar-powered instruments that transmit aerial images, telemetry and climate data to a website he created. His device can stay aloft for several weeks circumnavigating the Earth at a consistent altitude and greatly reduces instrumentation costs.

**Rebecca Cho**, 17, of **Jericho, New York**, received the **H. Robert Horvitz Prize for Fundamental Research** of **\$10,000** for creating a geological model that incorporates the effects of changing landscapes, climate, sea level and erosion. Her model can be used to investigate ecological changes over 20 million years in the western U.S. and potentially predict the effects of climate change on the area's biodiversity.

**Anika Puri**, 17, of **Chappaqua, New York**, received the **Peggy Scripps Award for Science Communication** of **\$10,000** for her low-cost machine learning software that can analyze night-time infrared videos taken by a drone flown over the African wilderness to spot elephant poachers in real time. In tests, her \$300 system worked with 91% accuracy, a fourfold improvement over current systems, without needing high-resolution thermal cameras that can cost up to \$10,000.

More information about the top winners and visual assets can be found at <https://www.societyforscience.org/isef-2022-media-kit/>

**Asmi Kumar**, 18, of Milton, Georgia; **Emirhan Kurtulus**, 18, of Istanbul, Turkey; and **Joshua Shunk**, 17, of Gilbert, Arizona received the **Dudley R. Herschbach SIYSS Award**, which provides the finalists with an all-expense paid trip to attend the Stockholm International Youth Science Seminar, which includes attendance at the Nobel Prize Ceremonies in Stockholm, Sweden.

**Varun Madan**, 17, of Orlando, Florida; and **Saan Cern Yong**, 16, and **Shen Ze Yeoh**, 15, both of Petaling Jaya, Malaysia, received the **EU Contest for Young**

**Scientists Award**, which is presented to two projects that will represent Regeneron ISEF at the EU Contest for Young Scientists to be held in Leiden, Netherlands, September 12-18, 2022.

For a full list of finalists who won awards, please visit [HERE](#) and [HERE](#).

In addition to the Top Award winners, 442 finalists received awards and prizes for their innovative research, including "First Award" winners, who each received \$5,000. The following lists the First Award winners for each of the 21 categories, from which the Top Awards were chosen:

Category and Sponsor	Winner	Location
Animal Sciences, sponsored by Society for Science	Yi-Shan Hung	Taipei City, Taiwan
	Varun Madan	Orlando, FL
Behavioral and Social Sciences, sponsored by Society for Science	Asmi Kumar	Milton, GA
	Vivek Kogilathota	Frisco, TX
Biochemistry, sponsored by Regeneron	Maya Butani	Moorestown, NJ
Biomedical and Health Sciences, sponsored by Regeneron	Jonathan Crawford	Milwaukee, WI
	Ambika Grover	Greenwich, CT
Biomedical Engineering, sponsored by Johnson & Johnson	Rishab Jain	Portland, OR
	Emirhan Kurtulus	Istanbul, Turkey
Cellular and Molecular Biology, sponsored by Regeneron	Shivani Babu	Auburn, AL
Chemistry, sponsored by Dow	Dana Al Aithan	Al Hofuf, Saudi Arabia
	Nishant Lahiri	Corning, NY
Computational Biology and Bioinformatics, sponsored by Regeneron	Wutthipong Chongchareansanti	Nakhon Pathom, Thailand
	Pawit Kaewnuratchadasorn	
	Nattawin Yamprasert	
	Kevin Zhu	Jericho, NJ
Earth and Environmental Sciences, sponsored by National Geographic Society	Rebecca Cho	Jericho, NJ
	Anika Puri	Chappaqua, NY
Embedded Systems, sponsored by Microsoft Azure Sphere	James Nagler	Garden City, NY
Energy: Sustainable Materials and Design, sponsored by King Abdul-Aziz & his Companions Foundation for Giftedness & Creativity	Abdullah Al-Ghamdi	Dammam, Saudi Arabia
Engineering Technology: Statics and Dynamics, sponsored by Howmet Aerospace Foundation	Robert Sansone	Fort Pierce, FL
	Amon Schumann	Berlin, Germany
Environmental Engineering, sponsored by Jacobs	Yanbing Jin	Shanghai, China
	Vedant Srinivas	Sammamish, WA
Materials Science, sponsored by Howmet Aerospace Foundation	Sohi Patel	The Woodlands, TX
Mathematics, sponsored by Akamai Foundation	Akilan Sankaran	Albuquerque, NM
Microbiology, sponsored by Regeneron	Shriya Bhat	Plano, TX
Physics and Astronomy, sponsored by Richard F. Caris Charitable Trust II	Ayush Nayak	San Diego, CA
	Alexander Plekhanov	Hillsboro, OR
Plant Sciences, sponsored by Society for Science	John Benedict Estrada	Fresno, CA
	Pauline Estrada	
Robotics and Intelligent Machines, sponsored by Siegel Family Endowment	Joshua Shunk	Gilbert, AZ
	Sheng Ze Yeoh	Petaling Jaya, Malaysia
	Saan Cern Yong	
Systems Software, sponsored by Microsoft	Andrei Florian	Dublin, Ireland
Translational Medical Science, sponsored by Regeneron	Napassorn Litchiowong	Mueang Chiang Mai, Thailand
	Chris Tiditjumnreonpon	
	Wattanapong Uttayota	

View all the finalists' research [here](#).

#### About the Regeneron International Science and Engineering Fair

The Regeneron International Science and Engineering Fair (Regeneron ISEF), a program of Society for Science for over 70 years, is the world's largest global science competition for high school. Through a global network of local, regional and national science fairs, millions of students are encouraged to explore their passion for scientific inquiry. Each spring, a group of these students is selected as finalists and offered the opportunity to compete for approximately U.S. \$8 million in awards and scholarships.

In 2019, Regeneron became the title sponsor of ISEF to help reward and celebrate the best and brightest young minds globally and encourage them to pursue careers in STEM as a way to positively impact the world. Regeneron ISEF is supported by a community of additional sponsors, including Broadcom Foundation, Johnson & Johnson, Gordon and Betty Moore Foundation, Akamai Foundation, Dow, Howmet Aerospace Foundation, Jacobs, King Abdulaziz & his Companions Foundation for Giftedness & Creativity, Microsoft, Microsoft Azure Sphere, National Geographic Society, Richard F. Caris Charitable Trust II, Rise, Siegel Family Endowment, Arconic Foundation, Cesco Linguistic Services, Georgia Institute of Technology, and Insaco. Previously, Intel sponsored ISEF for 20 years.

ISEF alumni have gone on to have world-changing careers in science and engineering and earn some of the most esteemed honors, including National Medal of Science recipients, MacArthur Foundation Fellows, National Academy of Sciences Members and National Academy of Engineering Inductees.

Learn more at <https://www.societyforscience.org/isef/>.

#### About Society for Science

Society for Science is dedicated to the achievement of young scientists in independent research and to public engagement in science. Established in 1921, the 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 Regeneron International Science and Engineering Fair, the Broadcom MASTERS, and its award-winning magazine, *Science News* and *Science News* for Students, Society for Science is committed to inform, educate, and inspire. Learn more at [www.societyforscience.org](http://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 life-transforming medicines for people with serious diseases. Founded and led for nearly 35 years by physician-scientists, our unique ability to repeatedly and consistently translate science into medicine has led to nine FDA-approved treatments and numerous 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, pain, 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 United States. 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 science education, including the [Regeneron Science Talent Search](#) and [Regeneron International Science and Engineering Fair](#).

For additional information about the company, please visit [www.regeneron.com](http://www.regeneron.com) or follow @Regeneron on Twitter.

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