REGENERON   **SOCIETY FOR SCIENCE**

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FOR IMMEDIATE RELEASE

Teen Scientists and Engineers Win $5 Million at Largest Global High School STEM Competition

$75,000 Top Award Goes to 16-year-old Michelle Hua for Novel Human Action Recognition Algorithm in Regeneron International Science and Engineering Fair 2021

TARRYTOWN, N.Y. and WASHINGTON, D.C. (May 21, 2021) – Regeneron Pharmaceuticals, Inc. (NASDAQ: **REGN**) and Society for Science (the Society) announced that Michelle Hua, 16, of Troy, Michigan, won the **$75,000 top award** in the 2021 Regeneron International Science and Engineering Fair (Regeneron ISEF), the world's largest global high school competition. Historically held in person, 2021 marks the first time in its more than 70-year history that the competition took place virtually.

The top finalists were honored during two virtual award ceremonies, the first of which aired on the evening of May 20 and featured Special Award winners. The Grand Awards Ceremony was held on the morning of May 21 and featured the announcement of the top prize of $75,000. In total, more than U.S. $5 million was awarded to the finalists, who were evaluated based on their projects' creativity, innovation and level of scientific inquiry. The competition featured over 1,800 young scientists representing 49 states and 64 countries across the world.

Michelle Hua 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, for her discovery of an artificial intelligence-based algorithm used for human action recognition. Using human silhouettes, she designed and implemented a novel deep learning framework that outperforms all similar state-of-the-art algorithms.

Catherine Kim, 18, of **Jericho, New York**, received one of two Regeneron Young Scientist Award of **$50,000** for creating a novel hierarchical machine learning model that is able to predict adverse drug reactions with 91% accuracy, along with their underlying biological mechanisms.

Daniel Shen, 17, of **Cary, North Carolina**, also received the Regeneron Young Scientist Award of **$50,000** for his development of an AI-powered facial-cue control module. Its high speed accelerates scientific discoveries, medicine research, and many other fields driven by large amounts of temporal data. The new algorithm has been adopted by researchers in Sepsis Shock diagnosis and Hurricane predictions.

"Congratulations to the Regeneron International Science and Engineering Fair 2021 winners," said Maya Ajmera, President and CEO of Society for Science and Publisher of *Science News*. "Every single Regeneron ISEF finalist has persevered in their pursuit of science in the face of the myriad challenges of the COVID-19 pandemic, and we could not be prouder to showcase their work on a global stage. We look forward to seeing the contributions these young leaders continue to make to their fields and the world."

Regeneron ISEF provides a global stage for future leaders in STEM – bringing together the best and brightest young minds to present their original research ideas to leading scientists and peers. Founded by the belief that advances in science are key to solving global challenges, Regeneron ISEF works to support and invest in young scientists who are generating ideas and acting as catalysts for the change needed to improve the well-being of all people and the planet.

"The Regeneron ISEF finalists form the next generation of remarkable STEM talent and deserve special commendation for their ability to complete and showcase their research during an

unprecedented pandemic," said George D. Yancopoulos, M.D., Ph.D., co-founder, President and Chief Scientific Officer of Regeneron. "The COVID-19 crisis and amazing global response have demonstrated the critical role that science and technology play in keeping people safe and healthy around the world. Regeneron ISEF recognizes the young scientists who are well-equipped and unafraid to tackle the existential threats facing our society. To all the participants: we need you more than ever, and congratulations on your achievements."

Other top honors from the competition include:

John Benedict Estrada, 16, of **Fresno, California**, received The Gordon E. Moore Award of **$50,000** for Positive Outcomes for Future Generations for his discovery of a novel computer program to accurately predict drought stress in plants using images from a custom-built robotic camera that captures infrared (IR) and visible light reflected off the leaves.

Arya Tschand, 17, of **Marlboro, New Jersey** received the **Craig R. Barrett Award for Innovation** of **$10,000** for his development of an artificial intelligence model that inter-communicates to collect and analyze environmental data to give each crop its unique ideal irrigation volume. With accessible, affordable, and efficient technology, Arya believes that developing nations can leverage this solution to save trillions of gallons of water yearly.

Neha Mani, 17, of **Bronx, New York** received the **H. Robert Horvitz Prize for Fundamental Research** of **$10,000** for her quantitative research of microbiology, which uses a diagnostic method to distinguish bacterial motion to diagnose Inflammatory Bowel Disease (IBD) by mathematically separating swarming from swimming.

Franklin Wang, 17, of **Palo Alto, California** received the **Peggy Scripps Award for Science Communication** of **$10,000** for his project engineering machine learning to analyze public telescope data. Through his research, he discovered six never-before-seen near-Earth asteroids. His approach can be applied to any observatory to substantially improve the detection of and search speed for fast moving asteroids (FMAs.)

For a full list of finalists who won awards, please visit HERE and HERE.

In addition to the Top Award winners, more than 450 finalists received awards and prizes for their innovative research, including "First Award" winners, who each received a $5,000 prize. 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	Varun Raj Madan	Orlando, Florida
Behavioral and Social Sciences, sponsored by Society for Science	Emilin Maria Mathew	Plantation, Florida
	Sarah Elise Hens	Illawong, Australia
Biochemistry, sponsored by Regeneron	Maya Sonal Butani	Moorestown, New Jersey

Biomedical and Health Sciences, sponsored by Regeneron	Ashwika Agrawal	Cupertino, California
	Isabella Mary Lillian Heffernan	Warwick, Rhode Island
Biomedical Engineering, sponsored by Johnson & Johnson	Ishaan S. Brar	Bakersfield, California
	Keyu Wan	Shanghai, China
Cellular and Molecular Biology, sponsored by Regeneron	Parisa Aryana Vaziri	Plano, Texas
Chemistry, sponsored by Society for Science	Omer Eyal	Jerusalem, Israel
Computational Biology and Bioinformatics, sponsored by Regeneron	Catherine Kim	Jericho, New York
	Natthakan Saengnil, Puri Virakarin	Rayong, Thailand
Earth and Environmental Sciences, sponsored by National Geographic Foundation	Ellery Alice Barngrove McQuilkin	Lee Vining, California
	Shrey Joshi, Ishaan Javali	Plano, Texas
Embedded Systems, sponsored by Microsoft Azure Sphere	Vadim Sannikov	Kemerovo, Russian Federation
Energy: Sustainable Materials and Design, sponsored by King Abdulaziz and His Companions Foundation for Giftedness Creativity	Margaret Yang	Bloomfield Hills, Michigan
Engineering Mechanics, sponsored by Society for Science	Arya Tschand	Lincroft, New Jersey
	Brian Minnick	Leesburg, Virginia
Environmental Engineering, sponsored by Jacobs	Haoyu Bradley Wang	Las Cruces, New Mexico
	Sahil Azad	Durham, North Carolina
Materials Science, sponsored by West Pharmaceutical Services	Ethan Mark Zentner	Glendale, Wisconsin
Mathematics, sponsored by Akamai Foundation	Alexander Zhang	San Jose, California
Microbiology, sponsored by Regeneron	Neha Mani	New York, New York
Physics and Astronomy, sponsored by Richard F. Caris Foundation	Franklin Wang	Palo Alto, California
	Ryan A Clairmont	San Diego, California
Plant Sciences, sponsored by Society for Science	John Benedict Allasas Estrada	Fresno, California
Robotics and Intelligent Machines, sponsored by Siegel Family Endowment	Michelle Hua	Bloomfield Hills, Michigan
	Ella Yue Wang	Chandler, Arizona
Systems Software, sponsored by Microsoft	Daniel Shen	Raleigh, North Carolina

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. $5 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, National Geographic Society, Akamai Foundation, Jacobs, King Abdulaziz & his Companions Foundation for Giftedness & Creativity, Microsoft, Microsoft Azure Sphere, Richard F Caris Foundation, Rise, Siegel Family Foundation, West Pharmaceutical Services, Cesco Linguistic Services, Gordon and Betty Moore Foundation, Insaco and Zeiss. Previously, ISEF was sponsored for 20 years by Intel.

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 and National Academy of Engineering Inductees and a range of entrepreneurs.

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 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 over 30 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 or follow @Regeneron on Twitter.

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