

May 17, 2019

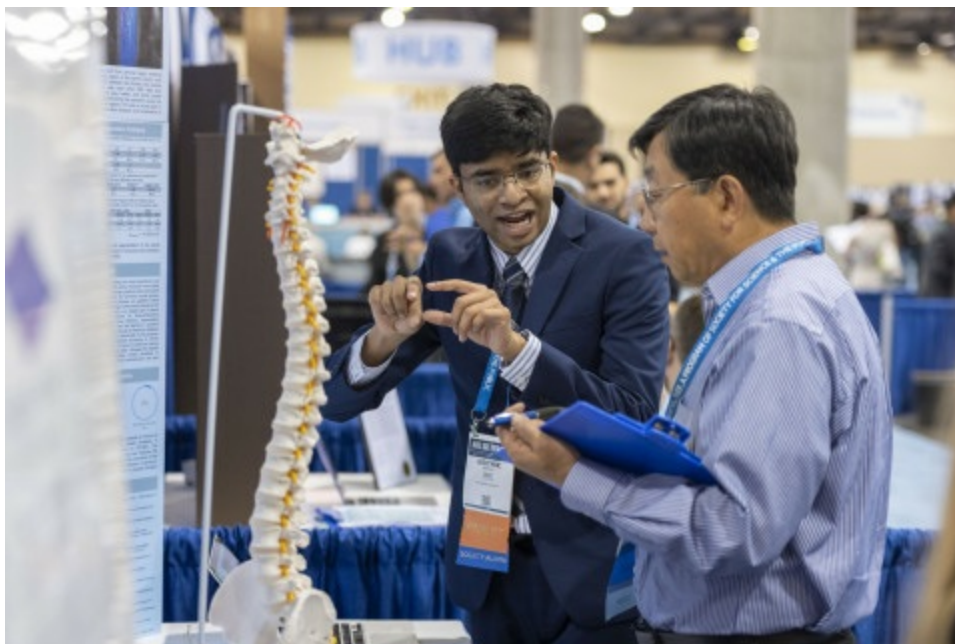


16-Year-Old Engineer Works to Improve Spinal Surgery Using Machine Learning and Computer Vision

Krithik Ramesh of Greenwood Village, Colorado, Wins \$75,000 Top Prize at Intel International Science and Engineering Fair

PHOENIX--(BUSINESS WIRE)-- Krithik Ramesh, 16, of Greenwood Village, Colorado, was awarded first place for developing a machine learning technology for orthopedic surgeons at this year's Intel International Science and Engineering Fair (ISEF), a program of Society for Science & the Public. Intel ISEF is the world's largest international pre-college science competition. The competition featured over 1,800 young scientists selected from 423 affiliate fairs in more than 80 countries, regions and territories.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20190517005479/en/>



Krithik Ramesh, 16, of Greenwood Village, Colorado, received top honors with the Gordon E. Moore Award of \$75,000 on Friday, May 17, 2019, at the 2019 Intel International Science and Engineering Fair, a program of Society for Science & the Public and the world's largest international pre-college science competition. He used augmented reality, machine learning and computer vision to help orthopedic surgeons achieve greater accuracy for screw placement during spinal surgery. (Credit: Chris Ayers/Society for Science & the Public)

Using machine learning and computer vision, the project helps orthopedic surgeons achieve greater accuracy for screw placement during spinal surgery. Based on Ramesh's tests, this method has the potential to decrease operating time by at least 30 minutes, reduce physical therapy recovery time by four weeks and diminish the negative side effects associated with traditional medical imaging. Ramesh received the \$75,000 Gordon E. Moore Award, named in

honor of the Intel co-founder and fellow scientist.

Press Kit: [Intel International Science and Engineering Fair 2019: Inspiring the Next Generation of Innovators](#)

Allison Jia, 17, of San Jose, California, received one of two Intel Foundation Young Scientist Awards of \$50,000 for her investigation into toxic tau protein aggregates, which spread in neurons in the human brain and are associated with neurodegenerative diseases such as Alzheimer's.

Rachel Seevers, 17, of Lexington, Kentucky, received the other Intel Foundation Young Scientist Award of \$50,000 for designing, building and testing a rigid, energy-efficient prototype of an underwater propulsion device that mimics the way jellyfish move through the water. This could allow for greater access to the world's unexplored oceans.

Shriya Reddy, 15, of Northville, Michigan, received the newly announced \$10,000 Craig R. Barrett Award for Innovation, funded through Society for Science and the Public, for her novel, noninvasive approach for rapidly diagnosing melanoma lesions.

"Intel is proud to honor Krithik Ramesh, Rachel Seevers, Allison Jia, Shriya Reddy and all of the ISEF finalists on their innovative work, which is helping to advance key research areas and provide solutions to global challenges that are critical today. The work they are doing has the potential to make a better tomorrow for all of us," said Pia Wilson-Body, president of the Intel Foundation. "And I would be remiss if I didn't highlight the communities of support surrounding these students every day: parents, teachers, mentors, administrators, supporters and organizations like SSP who provide opportunities for students to engage and explore the world of STEM, and ultimately reach their full potential."

In addition to the top winners, approximately 600 finalists received awards and prizes for their innovative research, including 22 "Best of Category" winners, who each received a \$5,000 prize in addition to their \$3,000 first-place award. The Intel Foundation also awarded a \$1,000 grant to each winner's school and to the affiliated fair they represent.

The following lists the 22 Best of Category winners, from which the top three were chosen:

Category	Name	City	State/Country
Animal Sciences	Dylan Bagnall and Richard Beattie	Dublin	Ireland
Behavioral and Social Sciences	Giovanni Santucci	Ossining	New York
Biochemistry	Annika Morgan	Redding	Connecticut
Biomedical and Health Sciences	Shriya Reddy	Northville	Michigan
Biomedical Engineering	Krithik Ramesh	Greenwood Village	Colorado
Cellular and Molecular Biology	Allison Jia	San Jose	California
Chemistry	Helena Jiang	Gainesville	Florida

Computational Biology and Bioinformatics	Jason Ping	Hackensack	New Jersey
Earth and Environmental Sciences	Katie Lu	Springfield	Missouri
Embedded Systems	Max von Wolff	Mayen	Germany
Energy: Chemical	Shicheng Hu	Shanghai	China
Energy: Physical	Joonyoung Lee and Mincheol Park	Busan	South Korea
Engineering Mechanics	Rachel SeEVERS	Lexington	Kentucky
Environmental Engineering	Adyant Shankar	Nashua	New Hampshire
Materials Science	Adrien Jathe	Frankfurt	Germany
Mathematics	AnaMaria Perez	Albuquerque	New Mexico
Microbiology	Poojan Pandya and Leo Takemaru	Dix Hills and East Setauket	New York
Physics and Astronomy	Kaylie Hausknecht	Lynbrook	New York
Plant Sciences	Amara Ifeji	Bangor	Maine
Robotics and Intelligent Machines	Kevin Meng	Plano	Texas
Systems Software	Adam Kelly	Dublin	Ireland
Translational Medical Science	Hannah Herbst	Boca Raton	Florida

“The Intel International Science and Engineering Fair is the world’s most powerful STEM talent pipeline and I am inspired by all of the ingenuity on display this week,” said Maya Ajmera, president and CEO of Society for Science & the Public and publisher of *Science News*. “Congratulations to our winners and all our finalists who are demonstrating that world-changing ideas can come from anywhere in the world.”

The Intel International Science and Engineering Fair provides opportunities for students to explore their passion for developing innovations that improve the way we work and live. All finalists are selected by an affiliated, local competition and receive an all-expenses-paid trip to the Intel International Science and Engineering Fair in Phoenix. At the competition, finalists are judged by hundreds of science, engineering and industry professionals who have a Ph.D. or equivalent (six years of related professional experience) or are senior graduate students with doctoral-level research in one of the 22 scientific disciplines above.

A full listing of finalists is available in the [event program](#). The Intel International Science and Engineering Fair 2019 is funded jointly by Intel and the Intel Foundation with additional support from dozens of corporate, academic, government and science-focused sponsors. This year, approximately \$5 million was awarded.

About Intel

Intel (NASDAQ: INTC), a leader in the semiconductor industry, is shaping the data-centric future with computing and communications technology that is the foundation of the world’s innovations. The company’s engineering expertise is helping address the world’s greatest

challenges as well as helping secure, power and connect billions of devices and the infrastructure of the smart, connected world – from the cloud to the network to the edge and everything in between. Find more information about Intel at newsroom.intel.com and intel.com.

About the Society

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).

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