



Davidson Institute
Fellows Scholarship

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SAN DIEGO TEEN AWARDED \$25,000 SCHOLARSHIP FOR TRANSISTOR DESIGN TO INCREASE COMPUTING SPEED

Ayush Nayak Named A 2022 Davidson Fellows Scholarship Winner

San Diego – The Davidson Fellows Scholarship Program has announced the 2022 scholarship winners. Among the honorees is 17-year-old Ayush Nayak of San Diego. Nayak won a \$25,000 scholarship for his project, *Utilization of InSb/Si Quantum Dots for Next-generation Multivalued High-transport Transistor Technology*. He is one of only 21 students across the country to be recognized as a 2022 scholarship winner.

“To me being named a Davidson Fellow is an incredible recognition of my work and effort in pursuing new science,” said Nayak. “I feel extremely honored to have my project recognized among groundbreaking research projects from other young scientists, and being elevated to this level is truly a dream come true. I’m excited to meet many other passionate scientists and can’t wait to keep pushing forward.”

For his project, Nayak designed a new type of CPU transistor capable of utilizing a third value in addition to existing binary code’s use of one and zero, allowing significantly faster computing. Nayak optimized a QDFET transistor with machine learning and other mathematical techniques to create a viable way to expand beyond the current silicon transistor designs that have been in use for more than 50 years.

Nayak is a rising senior at Westview High School in San Diego and plans to continue his studies in theoretical physics and astrophysics. In his free time, he enjoys being outdoors on his bike or looking at the night sky with his telescope and camera.

“This year’s class of Davidson Fellows Scholarship recipients continue to find new and innovative ways to pursue their educational and research journeys while striving to solve some of the world’s most vexing problems,” said Bob Davidson, founder of the Davidson Institute. “These students have not just overcome the challenges of doing significant work during a pandemic; our Fellows have embraced the new opportunities that have come from creative, outside-the-box thinking to use technology to expand their networks of mentors and access new sources of information and data, resulting in a very diverse portfolio of projects.”

The 2022 Davidson Fellows will be honored during a reception at the Massachusetts Institute of Technology and with a virtual project presentation ceremony in September 2022.

The Davidson Fellows Scholarship program offers \$50,000, \$25,000 and \$10,000 college scholarships to students 18 or younger, who have completed significant projects that have the potential to benefit society in the fields of science, technology, engineering, mathematics,

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literature and music. The Davidson Fellows Scholarship has provided more than \$9 million in scholarship funds to 407 students since its inception in 2001, and has been named one of the most prestigious undergraduate scholarships by [U.S. News & World Report](#). It is a program of the Davidson Institute, a national nonprofit organization headquartered in Reno, Nev. that supports profoundly gifted youth.

About the Davidson Institute

Founded by Bob Davidson in 1999, the Davidson Institute recognizes, nurtures and supports profoundly intelligent young people, and provides opportunities for them to develop their talents to make a positive difference. The Institute offers support through a number of programs and services, including the Davidson Fellows Scholarship and the [Davidson Academy of Nevada](#). For more information about the 2022 Davidson Fellows, please visit: [DavidsonFellows.org](#).

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High-resolution photos are available at
[DavidsonFellows.org](#)