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## **LOS ANGELES TEEN AWARDED \$10,000 FOR DEVELOPING METHOD TO IMPROVE OPTICAL SIGNAL PROCESSING FOR USE IN HIGH-SPEED DATA TRANSMISSION AND ANALYSIS**

### **Ari Willner to be Named a 2019 Davidson Fellow Scholarship Winner**

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Los Angeles – The Davidson Institute for Talent Development has announced the 2019 Davidson Fellows Scholarship winners. Among the honorees is 17-year-old Ari Willner of Los Angeles. Willner won a \$10,000 scholarship for his project, *Scalable and Reconfigurable Optical Tap-Delay-Line for Multichannel Equalization and Correlation of 20-Gbaud QPSK Signals Using Nonlinear Wave Mixing and a Microresonator Kerr Frequency Comb*. He is one of only 20 students across the country to be recognized as a scholarship winner.

“I am honored to be recognized as a Davidson Fellow, which puts me in company with many outstanding and talented laureates,” said Willner. “As a Davidson Fellow, I hope to further my passion in science and research while helping the world around me.”

Data generation is growing exponentially; it is increasingly difficult to process raw data into usable knowledge and information, such as in artificial intelligence, or to analyze massive video files, gene sequences, and dynamic databases in real-time. Optical signal processing can operate “at the speed of light” and holds the promise of processing and analyzing massive amounts of data at tremendous speeds. Willner’s research is a first step towards more compacted, integrated circuits for functional use by stripping unnecessary optical components from the tapped-delay-line, a processing function common in electronics.

Besides academics, Willner loves playing violin, including playing with the Los Angeles Youth Orchestra in Austria, Italy, and the Walt Disney Concert Hall in Los Angeles.

Willner graduated as valedictorian from Yeshiva University High School of Los Angeles and will be taking a gap year to study in Israel before attending Columbia University’s Fu Foundation School of Engineering and Applied Science as an Egleston Scholar. He plans to major in applied mathematics and hopes to further his passion in science and research while helping the world around him.

“We are proud to announce the 2019 Davidson Fellows Scholarship recipients and applaud them for their hard work and achievement in their fields of study,” said Bob Davidson, founder of the Davidson Institute. “By being awarded this recognition, these students have shown immense skill and work ethic, and they should be commended as they continue their educational and research journeys while continuing to work to solve some of the world’s most vexing problems.”

The 2019 Davidson Fellows will be honored at a reception in Washington, D.C., on Friday, September 27, 2019.

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, literature and music. The Davidson Fellows Scholarship has provided more than \$7.5 million in scholarship funds to more than 300 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 for Talent Development, 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 for Talent Development 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 2019 Davidson Fellows, please visit [www.DavidsonGifted.org/Fellows-Scholarship](http://www.DavidsonGifted.org/Fellows-Scholarship).

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*High-resolution photos are available at [www.DavidsonGifted.org/Fellows-Scholarship](http://www.DavidsonGifted.org/Fellows-Scholarship).*