



TAMS
ALUMNI

**TEXAS ACADEMY OF MATHEMATICS AND SCIENCE
ALUMNI ASSOCIATION**

For Immediate Release

Date: November 13, 2015

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**TEXAS ACADEMY OF MATHEMATICS AND SCIENCE (TAMS) ALUMNI ASSOCIATION
CONGRATULATES TAMS ALUMNI DR. EDWARD BOYDEN ON 2016 BREAKTHROUGH
PRIZE IN LIFE SCIENCES AWARD**

Denton, TX (November 13, 2015) — The Texas Academy of Mathematics and Science (TAMS) Alumni Association proudly congratulates Dr. Edward Boyden (Class of 1995) for being awarded one of the most prestigious STEM awards – the 2016 Breakthrough Prize in Life Sciences. Ed was recognized for his groundbreaking work to develop light-sensitive genetic control of neuronal activity, or optogenetics.

“TAMS alumni everywhere take pride in now sharing part of their pedigree with the recipient of such a prestigious award,” says TAMS Alumni Board President Brandon Hansen. “The TAMS Alumni Association is honored to have the opportunity to count Dr. Boyden as one of its own.”

TAMS is a two-year residential program located at the University of North Texas in Denton, Texas. High school juniors, selected by a rigorous admissions process, are enrolled full-time in university coursework to fulfill high school curriculum requirements while simultaneously earning approximately 60 units of university credit. Many graduates transfer these two years of credit to complete university studies at other institutions.

Ed entered TAMS as a 14-year old high school junior, and did chemistry research in a group studying the origins of life. Upon graduation in 1995, he transferred to complete his university studies at the Massachusetts Institute of Technology where he double majored in electrical engineering/computer science and physics, and also earned a master’s in electrical engineering/computer science. He then continued his academic path to Stanford University, where he earned his PhD from the Program in Neurosciences with research focused on the neuronal mechanisms of motor learning and memory storage.

In parallel to his PhD work, Ed pursued an independent side collaboration with Karl Deisseroth, co-recipient of the Breakthrough Prize. Ed had recognized the field of neuroscience would be transformed by the ability to precisely and rapidly control the activity of individual neurons. Ed and Karl worked together to develop optogenetic tools, which use genes from algae and bacteria to make neurons respond precisely to pulses of light.

Ed returned to MIT in 2006 and is currently an Associate Professor at the MIT Media Lab and Investigator at the MIT McGovern Institute, and holds joint appointments in the MIT Departments of Biological Engineering and Brain and Cognitive Sciences. In addition to further refining the power of optogenetics and engineering techniques for nanoscale neural mapping, Ed and his research team are applying these methods in hot pursuit of a comprehensive understanding of brain function and dysfunction that includes the existential question, “What confers the consciousness that makes us who we are?”

Though still relatively early in his career, Ed has already published more than 80 research articles, holds dozens of patents, and has won countless awards. His lab openly distributes materials and resources to the broader scientific community. As a testament to the impact of his research on many areas of the biological sciences, his landmark 2005 paper on the development of the first exquisitely controllable optogenetics approach has been referenced in more than 1,200 subsequent publications. There is no doubt Ed will continue to flourish and serve as a role model for current and future TAMS students. We, the TAMS alumni, look forward to following the news of his successes.

[TAMS Alumni Association](#) is a registered non-profit 501(c)3 organization dedicated to raising money to support TAMS and its students. We are an organization run by alumni volunteers, and we count on the support of other alumni to help us achieve our goals. Connect with us on [Facebook](#) and [Twitter](#) today.