



## Davidson Fellow Benjamin Schwartz

(\$10,000 Scholarship Recipient)



### Personal Info

Benjamin Schwartz

Age: 17

Westport, Connecticut

### School, College and Career Plans

Beginning classes at the Massachusetts Institute of Technology (MIT) this fall, Benjamin plans to continue his language and liberal arts studies while also taking physics, bio-technology and computer science courses. He would like to apply his interest and knowledge in science on a national level, helping advise leaders on their decisions concerning the use of scientific discoveries.

### Davidson Fellows Submission (*Mathematics/Science/Technology*)

In his project, *A New Tool for the Measurement & Analysis of Grain Boundary Energy with the Atomic Force Microscope*, Benjamin developed a computer program, *AFMetric*, which uses data from an Atomic Force Microscope to accurately measure grain boundary energy. An accurate measurement of grain boundary energy is necessary to produce the next generation of microchips, superconductors, corrosion-resistant alloys and materials with directional strength characteristics.

### Biography

Benjamin began programming when he was 8 after attending "Computer Camp" at a local college. During the next nine years, Benjamin continued taking advanced math and science courses during his summer breaks.

In the summer of 2000, Benjamin was selected to travel to the Sci-Tech program at Technion University in Haifa, Israel where he worked on his award-winning Grain Boundary Energy research. During the summer of 2001, Benjamin attended the Research Science Institute at MIT and developed a tool for Fermilab that has been integrated into their distributed supercomputer software toolkit. In June 2002, Benjamin earned a gold medal and a spot on the U.S. Physics Olympics International Squad as one of the top-five physics students in the nation.

Benjamin is a recent graduate of Staples High School, where he studied Spanish and Latin, swam on the varsity swim team, was captain of the Math Team, played the tuba and co-founded the National Engineering and Design Challenge Team. Benjamin also finds time to sail and ski, as well as act in local plays.

*Please see next page.*

**The Davidson Institute for Talent Development**

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## **Davidson Fellow Benjamin Schwartz**

*(Cont.)*

### Honors/Awards

- 2002 Davidson Fellow (September)
- 2002 National Merit Scholar
- 2002 National Youth Science Camp, Delegate
- 2002 Presidential Scholar, Semi-finalist
- 2002 Scientific American, Award of Excellence in Education
- 2002 World Language Honor Society for Spanish
- 2002 World Language Honor Society for Latin
- 2002, 2001 National Honor Society
- 2002 - 2001 Staples High school, Scholar Athlete
- 2002, 2001 U.S. Physics Olympiad, Team Gold Medal
- 2001 Bausch and Lomb Science Award

### Community Activities

Benjamin is a local volunteer and fundraiser for “Builders Beyond Borders,” an organization that builds community centers and housing for people in impoverished areas all over the world. In April 2000, Benjamin spent two weeks in Cuba building apartments for homeless families with other teens from his Connecticut community.

From the fall of 1998 to the spring of 2001, Benjamin worked at Temple Israel in Wesport as a media coordinator teaching fourth and fifth graders history and Hebrew language skills with the use of computers.

This past year, Benjamin’s synagogue was short-handed in the intensive special needs class. He volunteered to assist the Special Education teacher, helping learning-disabled and emotionally- challenged children each Sunday.

“Volunteering in this area was especially rewarding, because I made a difference to these kids in a way I had never experienced,” said Benjamin. “I wasn’t passing on information I had learned, but lending a hand and offering patience and encouragement. I felt a great sense of satisfaction helping in such a personal and human capacity.”

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