



**Davidson Fellow  
Jason Karelis**

(\$25,000 Scholarship Recipient)



**Personal Info**

Age: 17

East Setauket, New York

**School, College and Career Plans**

A graduate of Ward Melville High School, Jason is attending Brandeis University this fall and will pursue a major in biochemistry or biophysics. Jason plans to continue his work in science research.

**Davidson Fellows Submission** (*Science*)

In his project, "Mechanistic Studies of MenD, a Novel Drug Target for Methicillin-resistant *Staphylococcus aureus*," Jason studied an enzyme called MenD that plays a role in the biosynthesis of a lipid called menaquinone in *Staphylococcus aureus*, the bacterium that causes staph infections. Menaquinone is an electron carrier crucial to *S. aureus*. Jason constructed a mutant strain of *S. aureus* with a disrupted MenD gene and observed its growth on media only with menaquinone added, evidence that MenD is vital for *S. aureus*. Staph infections are a major public health concern and Jason's work provides a platform for a new class of antibiotics.

**Biography**

At an early age, Jason was fascinated by science and mathematics. He was selected to join his high school's InSTAR science research program, which he says opened his eyes to the many opportunities to learn and become involved in research at a university. Jason took Advanced Placement classes and also enrolled in courses at Stony Brook University through the Young Scholars Program. It was a series of seminars by university professors and doctors that piqued his interest in biomolecular research.

Jason conducted his research at the Institute for Chemical Biology and Drug Discovery at Stony Brook University. He trained diligently for a period of months, mastered complicated and detailed laboratory techniques, pieced together new bits of extremely complicated and detailed information, and implemented it all in his Davidson Fellows project. Along the way he learned that there is no such thing as a "failed experiment," and that sometimes the experience can be more important than the results.

Jason was a member of the Science Olympiad, math team, and academic team. He was also the news editor of the school paper. In his spare time, Jason enjoys reading, playing piano and saxophone, biking and playing tennis with friends.

*Please see next page.*



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(Cont.)

**Honors/Awards**

- 2009 Davidson Fellow
- 2009 Robert G. Porter Scholars Program Winner
- 2009 National Advanced Placement Scholar
- 2009 Ward Melville High School Honor Graduate
- 2009 Intel Science Talent Search Semifinalist
- 2009 Robert C. Byrd Honors Scholarship Recipient
- 2009 National Spanish Exam, Silver Medal
- 2009 Proclamation, Suffolk County Legislature, for devotion to scientific research
- 2009 Honor for Educational Excellence
- 2009 Ward Melville High School PTSA Award
- 2009 Ward Melville High School Community Service Award
- 2008 Young Scholars Program at Stony Brook University
- 2008 Advanced Placement Scholar with Distinction
- 2008 Toshiba/NSTA ExploraVision Science Competition, National Honorable Mention
- 2008 National Honor Society
- 2008 Spanish Honor Society
- 2008 International Honorary Society for High School Journalists

**Community Activities**

Jason began playing the piano at age 7, and since fifth grade has played at nursing homes in addition to leading other recreational activities. Jason was a teaching assistant for the Science Olympiad Summer Program for elementary and middle school children. Through his high school's Honor Society, Jason assisted with the organization of school service activities, fundraising for charities, beach clean-ups and community events. He also volunteers at the local soup kitchen.

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