



Davidson Fellow
Sarah Walianny

(\$10,000 Scholarship Recipient)



Personal Info

Sarah Walianny
Age: 16
Arcadia, California

School, College and Career Plans

A rising senior at Flintridge Preparatory School, Sarah plans to major in Biomedical Engineering and become a physician.

Davidson Fellows Submission (*Science*)

In her project, "Role of t-Darpp in P13K/Akt/Bcl-2 Pathway in Causing Resistance in Herceptin-Sensitive Breast Tumors," Sarah discovered that expression of the gene t-Darpp can make Her-2 positive breast tumor cells become resistant to the drug Herceptin. Sarah demonstrated that t-Darpp alters a critical signaling pathway that regulates growth and survival in cells. Her-2 positive breast tumor cells are very aggressive and Herceptin-resistance is found in 50 to 70 percent of cancer patients with Her-2. Sarah's work shows that blocking the t-Darpp gene can eventually lead to more effective breast cancer treatment.

Biography

At age 13, Sarah took Advanced Placement (AP) Calculus and at age 15, she took college-level Multivariable Calculus.

In her sophomore year, Sarah started a club called the Desi Geestman Club, based on a foundation of the same name in Los Angeles that raises money for children with cancer whose parents cannot afford treatment.

Sarah enjoys leading her schoolmates in different science- or non-science-related activities. In her junior year, she started a journal at her school called the *Current Science Journal* in order to share her passion for science with others. The journal currently has a 13-member editorial and writing staff. During the upcoming school year, Sarah plans to include students from other schools in the Los Angeles School District to write for the journal to encourage them to take an active interest in science research.

Sarah has been on the yearbook staff since seventh grade and as copy and managing editor since ninth grade. Her senior year she will be the Editor-in-Chief. Sarah has served as president of the Science Club and president of the Mu Alpha Theta Math Club. She has also been the opinion and news editor of the Flintridge Press School Newspaper since tenth grade.

Please see next page.



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(Cont.)

Honors/Awards

- 2008 Davidson Fellow
- 2008 Siemens Competition for Math, Science, and Technology : Regional Winner and National Finalist with \$10,000 undergraduate scholarship
- 2008 Rensselaer Science and Math Award with \$60,000 undergraduate scholarship
- 2008 Occidental Book Award for Excellence in Academics, Community Service, and Extracurricular Activities
- 2008 California State Science Fair, first place in Pharmacology/Toxicology and Patricia Beckman Scholarship Award for Best of Fair Project with \$10,000 Scholarship
- 2008 Los Angeles County Science Fair, first place in Pharmacology and Best of Fair
- 2008 School Science Fair, Best of Fair Award and Teacher Award
- 2007 High School Valedictorian
- 2007, 2006, 2005 The Yee Siu King Tom Award for Excellence in Mathematics
- 2007 Amherst Book Award for Intellectual Curiosity and Passion for Learning
- 2007 California State Science Fair, second place in Pharmacology/Toxicology
- 2007 Los Angeles County Science Fair, first place in Pharmacology
- 2007 School Science Fair, Best of Fair Award and Teacher Award
- 2006 Los Angeles County Science Fair, second place in Pharmacology
- 2006 School Science Fair, Best of Fair Award
- 2005 Siemens Westinghouse Semifinalist
- 2005 California State Science Fair, second place in Plant Biology
- 2005 Southern California Horticultural Society, special award
- 2005 Los Angeles County Science Fair, first place in Plant Biology and Best of Fair

Community Activities

Sarah volunteers at the San Gabriel Medical Center, Desi Geestman Foundation, and Foothill Unity Center.

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