



Davidson Fellow
Avanthi Raghavan

(\$10,000 Scholarship Recipient)



Personal Info

Avanthi Raghavan

Age: 17

Orlando, Florida

School, College and Career Plans

Avanthi is a recent graduate of Lake Highland Preparatory School and will attend the University of Pennsylvania where she plans on majoring in biochemistry. She eventually hopes to pursue a career as a physician or medical researcher.

Davidson Fellows Submission (Science)

In her project, "Characterization of Novel Protein Trafficking Pathways in *Plasmodium falciparum*," Avanthi studied mechanisms of protein transport critical to the survival and pathogenicity of the malaria parasite, *Plasmodium falciparum*, which infects human red blood cells. *Plasmodium falciparum* is the most virulent causative agent of malaria and causes an estimated two million deaths annually. By using confocal microscopy, Avanthi characterized the role of the SNARE proteins PfSec22 and PfBet1, thus identifying potentially exploitable targets for the future development of parasite-specific drugs.

Biography

Avanthi was stunned to learn that high school students could engage actively in "real life" research next to undergraduate and graduate students in a university lab. Avanthi feels there is something powerful about being part of a lab and doing research that has the potential to alleviate human suffering. When she learned of the ASPIRE research program through her school, she knew she had found the avenue to do something real, something here and now that would make her feel like she was making a difference.

Throughout Avanthi's childhood, her parents, both physicians from India, frequently mentioned the prevalence of malaria infections in their homeland. The leading problem, they told her, was awareness; the disease had been eradicated from the United States decades ago and therefore few realize the enormous toll it takes in underdeveloped countries.

When Avanthi is not in the lab she is playing piano and learning Carnatic music, a traditional South Indian art form. She has also been involved in a number of community service initiatives.

Please see next page.



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(Cont.)

Honors/Awards

- 2008 Davidson Fellow
- 2008 Valedictorian of graduating high school class
- 2008 Intel Science Talent Search Finalist
- 2008 Siemens-Westinghouse Competition Semifinalist
- 2008 National Merit Scholarship Winner
- 2008 Certificate of Merit—Highest Honor from the Society of Women Engineers
- 2008 Inducted into Cum Laude Society
- 2007 National Advanced Placement Scholar
- 2007 Intel International Science and Engineering Fair Finalist
- 2007 Best of Show at the Dr. Nelson Ying Orange County Science Exposition
- 2007-2008 Mu Alpha Theta Mathematics Honor Society Member
- 2006-2008 National Honor Society Member
- 2005-2008 National Spanish Honor Society Member

Community Activities

Avanthi was a volunteer for Give Kids the World, a non-profit organization dedicated to fulfilling the wishes of children with terminal illnesses. She was also a member of her school's Red Cross Club and Knitting for the Needy, a community service organization dedicated to knitting clothing items for the homeless. During Avanthi's senior year, she joined the Key Instructional Leadership Team (KILT) at her school, in which she worked as a teaching assistant for her Spanish instructor. As a member of KILT, she created lesson plans, graded papers, and assumed an active role as a secondary instructor in the Advanced Placement Spanish class.

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