



**Davidson Fellow**  
**Anarghya Vardhana**  
( $\$10,000$  Scholarship Recipient)



**Personal Info**

Anarghya Vardhana  
Age: 17  
Beaverton, Oregon

**School, College and Career Plans**

Anarghya recently graduated from Jesuit High School and will attend Stanford University in the fall. She is leaning towards a major in physics or biology combined with a math major or minor.

**Davidson Fellows Submission** (*Mathematics*)

In her project, "Novel Method of Computing Jacobi Symbols for Mersenne Numbers," Anarghya worked in the field of number theory to develop new starting values for the Lucas-Lehmer primality test. Her theorem can be used to further understand Mersenne primes and their properties through simple and efficient computation of Jacobi symbols. By allowing for easy computation, Anarghya's method can directly contribute to the pharmaceutical, chemical, materials, financial and information technology industries. Her theory also has broad implications in cryptography, specifically enhancing encryption systems to protect against identity theft.

**Biography**

Anarghya was exposed to mathematics and science from a young age; she has always been fascinated with their precise logic. Mathematics specifically interested Anarghya because of its structured nature and now she believes the extension of human knowledge and small mathematical breakthroughs can have many direct and indirect connections to social progress.

Anarghya's main challenge in completing her Davidson Fellows project was the proof of her theorem. She had constant support from her family and mentors and received many hours of editing and review of her work. She hopes her theorem will contribute to the limited, but growing knowledge and understanding of Mersenne numbers.

Anarghya's other interests include literature, music, cars, motorcycles and Indian classical dance. She has been participating in Indian classical dance for 13 years and continues to learn, teach and perform. Anarghya also truly enjoys watching and participating in sports, she was a varsity member of her high school's swim team and will be on Stanford's cycling team in the fall.

*Please see next page.*

**The Davidson Institute for Talent Development**

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(Cont.)

**Honors/Awards**

- 2006 Davidson Fellow
- 2006 Intel International Science and Engineering Fair Finalist, 2<sup>nd</sup> Place Mathematics
- 2006 Siemens Westinghouse Semifinalist
- 2006 Oregon Junior Academy of Science, 1<sup>st</sup> Place
- 2005 United States Department of Homeland Security Award
- 2005 National Junior Science and Humanities Symposium, 3<sup>rd</sup> Place
- 2005 Presidential Award for Service
- 2004 United States Army Award at the Intel International Science and Engineering Fair

**Community Activities**

Anarghya is very dedicated to community service; she spent over 200 hours working, teaching and living with children in an orphanage in India. She also is an Intel SOLV community clean-up team member. Anarghya coaches the Youth Science Bowl team and is a Jesuit High School Special Olympics volunteer. She rode in the Lance Armstrong Cancer Foundation Ride and is a Hillsboro Optimist Club community service volunteer.

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