

Davidson Fellow
Meredith Lehmann
\$25,000 Scholarship Recipient



Personal Info

Age: 14
La Jolla, California

School, College and Career Plans

Meredith is a junior at The Bishops School and also takes classes at UCSD. For college, she hopes to find a good match for her combination of interests: science, mathematics, music and Classics, continuing to develop these and other yet undiscovered passions.

Davidson Fellows Submission (Science)

In her project, "*Transportation Networks and the Propagation of Novel H1N1 Swine Flu-Like Epidemics*," Meredith researched the spread of epidemics. Using trip data from all 3076 counties in the continental United States, she found long distance auto travel, which accounts for five times as many passenger-miles as air travel, governs simulated epidemic evolution. Large hub airports near population centers are not disproportionately more important in contrast to existing research. Meredith's findings suggest epidemic models should incorporate automobile and air travel data but transportation network restrictions are unlikely to be effective.

Biography

Meredith has always had numerous and diverse interests, making her as comfortable with Latin and Homeric Greek as she is with science and pure and applied math. After one semester of first grade, she transferred to a combined 2nd/3rd grade class in a Montessori school, then qualified for San Diego's full-time gifted program, the Seminar Program. She attended Seminar schools through seventh grade, and spent the next year in Los Angeles at a small independent school for eighth grade before returning to San Diego.

For her eighth grade science fair project, Meredith examined how well epidemiological models accounted for deaths during the Spanish flu pandemic of 1918-1919. She has been interested in epidemiology ever since, and when the novel H1N1 swine flu broke out, she knew she had found her next research project.

In addition to her studies at The Bishops School, Meredith is enrolled in Latin literature, calculus and chemistry at UCSD. She recently began work in a bioengineering lab at UCSD, is co-president of her school's math club and participates in the San Diego Math Circle. Meredith plays cello in her school's chamber orchestra and with the University of San Diego Symphony Orchestra, and will participate in the national Math Prize for Girls competition this year.

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cont.

Honors/Awards

- 2010 Davidson Fellow
- 2010 California State Science Fair, Second Place Mathematics and Software
- 2010 Southern California Junior Science and Humanities Fair, First Runner-up
- 2010 Greater San Diego County Science and Engineering Fair, First Place Medicine
- 2010 Senior Sweepstakes Runner-up
- 2010 Professional Engineers in California Government Award
- 2010 SAB Honor Society Award
- 2010 Kaiser Permanente Award
- Present - 2008 Varsity Academic League
- 2009 American Society of Microbiology First Place
- 2009 COSMOS Summer Program
- 2008 Center for Talented Youth, Johns Hopkins University
- 2007-2008 Speech and Debate Club
- 2008 California State Science Fair First Place Mathematics and Software
- Member, American Society of Microbiology, Southern California Chapter

Community Activities

Meredith is on the student advisory board of the Greater San Diego County Science and Engineering Fair. For the past four years, she has given instrumental and vocal music benefit performances with different orchestras and choirs for senior centers, schools and churches. Meredith has also volunteered at Las Madres, providing support for young mothers and their children.