



Davidson Fellow
Graham Van Schaik
(\$10,000 Scholarship Recipient)



Personal Info

Graham Van Schaik
Age: 16
Columbia, South Carolina

School, College and Career Plans

Graham is a rising senior in the Discovery Math and Science Program at Spring Valley High School. He is still considering his college choices and plans to major in a science/research related field. Graham hopes to be an environmental or medical researcher.

Davidson Fellows Submission (*Science*)

In his project, "Pyrethroid Pesticides and Their Potential to Promote Breast Cancer and Neurodegeneration," Graham researched exposure to pyrethroids, chemicals found in common household and agricultural pesticides. More than 30 commercial crops are treated with pyrethroids and they have been found in meats, seeds and baby food. Graham determined the residual amounts of pyrethroids found in tomatoes and possible inhalation when used in a home environment. By extrapolating human consumption and inhalation, he found pyrethroids were retained in both cases and promoted statistically significant cellular proliferation in human breast cells, a sign of cancer, and significant neurite retraction in neurons, a sign of neurodegenerative diseases.

Biography

Graham has always tried to maintain balance in his life, and has divided his time between research, athletics and community service. He was drawn to science because of the beneficial impact it can have on the world.

Graham began his research project in Pyrethroid chemicals when he found out the home-use pesticide his grandmother used in her garden made her feel ill. The main difficulty Graham had to overcome in his research process was finding a lab where he could work. By persisting, the South Carolina Department of Agriculture and the University of South Carolina let him conduct his research in their facilities.

Graham's education began in private school until third grade, when his parents felt Graham would be better challenged in a larger school setting. The rigor and content were disappointing however, so Graham moved to another school to finish his elementary education. In middle school he was in a magnet program and in high school, a math and science program.

Please see next page.



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(Cont.)

Honors/Awards

- 2007 Davidson Fellow
- 2007 Best of Category – Environmental Science, Intel International Science and Engineering Fair
- 2007 First Place, Environmental Science, South Carolina Junior Academy of Science Symposium
- 2007 and 2008 Selected as a Presenter at the American Association for the Advancement of Science meetings in Boston and San Francisco
- 2007 Winner at the South Carolina Junior Science and Humanities Symposium
- 2007 Harvard Book Award Winner
- 2007 State Prudential Sprit of Communities Award
- 2007 Golden Palmetto Leadership Award
- 2007 United States President's Volunteer Service Award
- 2007 President of National Honor Society
- 2006-2007 Statewide Vice President for the South Carolina Junior Academy of Science
- 2006 Member National Latin Honor Society
- 2006 Selected to present research to National Governors Conference
- 2006 Second Place, Environmental Science, Intel International Science and Engineering Fair
- 2006 Winner of US Air Force Scholarship at Intel International Science and Engineering Fair
- 2005 Southeast 1X Rowing Champion
- 2004 Selected as the youngest rower to compete in the Head of the Charles Regatta in Cambridge, Massachusetts

Community Activities

Graham developed, solicits funding and leads the Science Captivates Minds Program for Boys & Girls Clubs in Columbia, his hands-on summer science camp for at-risk students. He also created and produced a multimedia presentation for rising freshmen at his high school. Graham has been a builder for Habitat for Humanity for six years and won the Order of Thor Award, his school's top service award.

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