



**Davidson Fellow
Nathan Georgette**

(\$10,000 Scholarship Recipient)



Personal Info

Nathan Georgette

Age: 17

Ponte Vedra Beach, Florida

School, College and Career Plans

Nathan is a rising senior in the International Baccalaureate Diploma program at Nease High School. He hopes to attend a research university and study a multi-disciplinary program combining mathematics, biology and international relations. Nathan plans to become a research medical scientist and pursue a career with Doctors Without Borders and the World Health Organization.

Davidson Fellows Submission (*Science*)

In his project, "Novel Herd Immunity Threshold Analysis Incorporating Population Dynamics and Gradual Immunization," Nathan developed a novel mathematical model intended to reduce the costs of stopping viral disease outbreaks in impoverished nations. He used mathematical modeling to generate a formula with which the minimum number of vaccines needed to stop a measles outbreak can be calculated in real time during the outbreak. His research represents a new approach to understanding the dynamic effects of infectious disease spread and gradual immunization.

Biography

Nathan participated in a full-time gifted educational program from second through eighth grade. In addition, he was accelerated in math beginning with algebra in fifth grade through completing multi-variable calculus via dual enrollment in 11th grade. Nathan taught himself the more advanced mathematics needed for his research.

Nathan became interested in global and public health after reading about the inordinate number of children who die from vaccine-preventable diseases around the world. The shocking death tolls of measles, a vaccine-preventable disease, became the impetus for Nathan's research. He hopes his equations and work will improve immunization campaigns.

Nathan also has a deep interest in international relations because public health's multidisciplinary nature mandates that its professionals be well-versed in both natural and social sciences.

In Nathan's free time he enjoys writing, video games, poker, hiking and his dog, Che.

Please see next page.

The Davidson Institute for Talent Development

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(Cont.)

Honors/Awards

- 2008 Davidson Fellow
- 2008 Second Place, Florida Junior Science, Engineering & Humanities Symposium
- 2008 Speaker, National Junior Science, Engineering & Humanities Symposium
- 2007 Second Place, Regional Gandhi Peace Essay Contest
- 2008 National Society of High School Scholars National Scholars Award
- 2006, 2007, 2008 National Honor Society
- 2007, 2008 National Science Honor Society
- 2008 Superior, Piano Solo and Duo, Florida Federation of Music Clubs
- 2007 Published Article: "The Quantification of the Effects of Changes in Population Parameters on the Herd Immunity Threshold." *The Internet Journal of Epidemiology*. Volume 5, Number 1.
- 2007 Department of Homeland Security Intel International Science and Engineering Fair Scholarship
- 2007 Fourth Grand Award, Medicine and Health, Intel International Science and Engineering Fair
- 2007 Overall Winner, Senior Division, St. Johns County Regional Science Fair
- 2006 Third Place, Senior Mathematics, Florida State Science and Engineering Fair

Community Activities

Nathan's passion for aiding the underprivileged extends beyond the realm of scientific inquiry. He founded his high school's Habitat for Humanity Club, through which he organizes monthly trips to volunteer at construction sites, fundraising activities, essay contests, and other educational opportunities for children living in Habitat homes. Nathan also enjoys writing about the movement toward free access to published scientific research on the blog he founded, www.openaccessblog.com.

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