



**Davidson Fellow
Nolan Kamitaki**

(\$25,000 Scholarship Recipient)



Personal Info

Age: 16
Hilo, Hawaii

School, College and Career Plans

Nolan is a senior at Waiakea High School. After high school, he plans to pursue a medical or other science degree. He hopes to have a career merging biological processes and computer science.

Davidson Fellows Submission (*Science*)

In his project, "Programming a Network Approach to Contain the Spread of Epidemic," Nolan designed a computer simulation to determine how viral characteristics and medical supply distribution patterns affect an epidemic's spread across a social network. Starting with a particle-based simulation to analyze basic interaction rates, he moved to a small world network, modeling an epidemic's spread across a population. Nolan's findings showed that children, due to their greater degree of social connection, are most useful for prevention and are the most effective recipients of medical processes.

Biography

Nolan has long felt a deep fascination with natural phenomena and mathematics. He realized that he wanted science and math to play a role in his future so he began engaging in an increasing number of science and math-based classes and extracurricular hobbies. In seventh grade he created a science fair project about arsenic in the soil and has been in scientific pursuit ever since.

Nolan's Davidson Fellows project was initiated with his interest in the idea that a mathematical model and computer simulation could predict the response to a viral outbreak. He pursued his research by organizing various source code files and programs he generated on weekly basis. Nolan also presented his research at science competitions, forcing him to revise explanations and conclusions as his work evolved.

Nolan was the captain of his school's Hawaii State Math Bowl team and currently serves as captain of his school's math league team. He has been a member of the science bowl team for three years, serving as captain for two. Nolan has played the piano for 12 years and the clarinet in the school band for six years.

Nolan participated in Japan's International Micro Robot Maze Contest and a national Botball competition, which combines robotics with science, technology and math.

Please see next page.



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(Cont.)

Honors/Awards

- 2009 Davidson Fellow
- 2008, 2009 National Honor Society
- 2009, 2008 Big Island Math League, Second Place Team
- 2009, 2008 U.S. National Chemistry Olympiad State Qualifier
- 2009 American Mathematics Competition AMC12
- 2009 Hawaii District Science and Engineering Fair First Place
- 2009 Hawaii State Science and Engineering Fair: Second Place
- 2009 Intel International Science and Engineering Fair Finalist
- 2008 International Simulation/Modeling Conference High School Presenter First Place
- 2009 Pacific Symposium for Science & Sustainability Second Place
- 2009 National Junior Science & Humanities Symposium Medicine and Health Run-Off Qualifier
- 2008 Selected speaker at Hawaii Academy of Science
- 2008 Hawaii Junior Artist Piano Audition
- 2008, 2009 National Piano Teacher's Guild
- 2008 USA Biology Olympiad Semifinalist
- 2008 State History Day Third Place
- 2008 Intel International Science and Engineering Fair Medicine and Health Second Place
- 2008 Pacific Symposium for Science & Sustainability Second Place 2008 National Junior Science & Humanities Symposium Presenter

Community Activities

Nolan is one of the elected student representatives for his school's Student Community Council and a member of the Student Government Association. He has been a member of his school's Leo Service Club since his freshman year, and a member of the Student Sierra Coalition since his sophomore year. Since the sixth grade, he has participated in a short segment on a local TV access channel and hosts a monthly segment, "Living in Paradise."

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