Davidson Institute for Talent Development

Davidson Fellow Laureate

Philip Streich

($50,000 Scholarship Recipient)

Personal Info

Philip Streich
Age: 17
Platteville, Wisconsin

School, College and Career Plans

Philip will apply to colleges this fall and hopes to pursue studies in molecular biology, chemistry, and physics possibly creating a special concentration, Biomolecular Nanoscience. He plans to minor in political science and run for office some day. As a career, Philip looks to pair research with teaching at a university.

Davidson Fellows Submission *(Science)*

In his project, "Determining Carbon Nanotube Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?," Philip proved that carbon nanotubes, among the strongest and most conductive materials in the world, are thermodynamically soluble, contradicting the generally held assumption that they were universally insoluble. Using the Debye light scattering theory, Philip determined the Flory Huggins parameter to calculate solubility. To accurately detect the light scattered, he designed and custom-built a unique photon-counting spectrometer, more sensitive and precise than any commercially available. Philip's work has broad applications in the field of nanotechnology engineering.

Biography

Born in New Jersey, Philip currently lives in rural southwest Wisconsin where he is homeschooled, and his family grows corn and soybeans while raising sheep, chickens and heifers. Despite being accelerated several grades in math and science, Philip switched to homeschooling in the seventh grade. When he was 14, Philip began taking courses at the University of Wisconsin in Platteville where he was introduced to scientific research. Since then, he has taken undergraduate and graduate courses in science, math, history and German, in addition to online courses through Stanford's Education Program for Gifted Youth (EPGY) and the John Hopkins Center for Talented Youth (CTY). This summer, Philip attended the Research Science Institute (RSI).

His research has been published in *Advanced Materials* and written about in the "Editor's Choice" section of *Science*. Recently, Philip co-founded Graphene Solutions to sell the instrument and solvents he discovered which have patents pending; his company won the 2008 Wisconsin Governor's Business Plan top award.

Philip won Wisconsin's top high school music award, Solo Exemplary Honors, for piano and voice, and he has performed with the Dubuque Symphony by singing in Verdi's Rigoletto. In his spare time, Philip enjoys biking, fishing, reading, playing the guitar and spending time with friends.

Please see next page.

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(Cont.)

Honors/Awards

- 2008 Davidson Fellow Laureate
- 2008 WiSys Innovative Scholar of the Year 2008 Award
- 2008 Siemens AP Scholar in Math and Science $2,000 Scholarship
- 2008 National German Test Top Student Division Winner
- 2007 International Science and Engineering Fair Finalist Awards:
    - Intel Foundation Young Scientist $50,000 Scholarship Award
    - Best in Category $5,000 Award
    - First Place Grand Award in Chemistry $3,000 Award
    - China Association for Science and Technology Award
    - First Place U.S. Air Force $3,000 Award
    - First Place U.S. Army Gold Medallion $3,000 Award
    - Sandia National Laboratories Best Application of Nanotechnology $2,500 Award
    - United Technologies Corporation Excellence in Science $2,000 Award
    - Second Place AVS Science and Technology Society $500 Award
    - Second Place Patent and Trademark Office Society's $250 Award
    - Third Place American Chemical Society $2,000 Award
- 2008 International Science and Engineering Fair Finalist Awards:
    - Office of Naval Research $8,000 Scholarship
    - First Place American Chemical Society $4,000 Award
    - First Place U.S. Air Force $3,000 Award
    - First Place U.S. Army $3,000 Award
    - United Technologies Corporation Excellence in Science $2,000 Award
    - First Place Patent and Trademark Office Society $1,000 Award
    - Second Place Grand Award in Chemistry $1,500 Award
- 2007 National Junior Science and Humanities Finalist and Presenter
- 2007 U.S. Physics Olympiad Finalist and Team Member 2007
- 2007 Physics Bowl National Top Student Winner Division II
- 2006 Physics Bowl National Top Student Winner Division I
- 2006 National Chemistry Olympiad Finalist

Community Activities

For the past two years, Philip served as the elected Treasurer of the Democratic Party of Grant County. He was elected President of the Platteville Youth Commission three years in a row and interned at the State Capitol. Philip volunteers at the Senior Center.

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