

**Davidson Fellow Laureate**  
**Jonathan Rajaseelan**  
\$50,000 Scholarship Recipient



**Personal Info**

Age: 17  
Millersville, Pennsylvania

**School, College and Career Plans**

A rising senior at Lancaster Country Day School, Jonathan plans to study chemistry, biomedical engineering, piano performance and orchestral conducting. He would like to pursue a M.D./Ph.D. degree and go on to teach and continue research in medicine.

**Davidson Fellows Submission (Science)**

In his project, "Novel Rhodium N-heterocyclic Carbene Complexes for Green Chemistry," Jonathan synthesized six new carbene complexes of the metal Rhodium. Rhodium complexes act as catalysts in multiple organic synthesis reactions, including the manufacturing of pharmaceuticals and industrial chemicals. The catalytic effects of his complexes make these processes safer, inexpensive and less environmentally hazardous by eliminating the need for large quantities of hydrogen gas, a dangerous explosive. Jonathan's work has the potential to contribute to greener methods of making medicines, pharmaceuticals, and other chemical products.

**Biography**

Since kindergarten, Jonathan has attended Lancaster Country Day School, an independent college preparatory school. He was accelerated in math and science and completed general biology and advanced chemistry before entering high school. Jonathan took many advanced level science classes including inorganic, physical and organic chemistry, as well as college courses in math.

Jonathan's strong background in chemistry and math set the stage for his Davidson Fellows project. Even so, his research led him to uncharted territory and he recognized that his lab skills needed refining. One such example was using silver tetrafluoroborate, a hygroscopic substance whose properties required quick measurement. Through trial and error, Jonathan eventually redesigned the experiment to adapt and move forward with his project. He also had guidance from his mentors who helped him with experimental procedure and research in related fields.

Jonathan's other passion is music. He has played both violin and piano for many years and has been a piano soloist at Carnegie Hall. He also enjoys music theory, composition and conducting. Jonathan is the captain of his school's quiz bowl team and co-president of the Free the Children benefit club.

*Please see next page.*



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*cont.*

**Honors/Awards**

- 2010 Davidson Fellow Laureate
- 2010 Pennsylvania Science Talent Search Outstanding Junior Award
- 2010 Pennsylvania Junior Academy of Science: Eberly College of Science The Pennsylvania State University Scholarship
- 2010-2007 Pennsylvania Junior Academy of Science: Chemistry First Place
- 2010 College Board Advanced Placement Scholar with Distinction
- 2010 Lancaster Country Day School Jarvis Scholar
- 2010 Bausch & Lomb Honorary Science Award
- 2010 Deborah A. Altman Community Service Award
- 2010 Rensselaer Medal Award Rensselaer Polytechnic Institute
- 2010 SEPSAC Outstanding Chemistry Student Award
- 2010 National Spanish Honor Society
- 2009 Helen Powilson Memorial Prize
- 2009 Intel ISEF Chemistry Third Place Grand Award
- 2009 North Museum Science and Engineering Fair Grand Champion
- 2008 Brossman Science Lectureship Competition Second Place Award
- 2007, 2006 Johns Hopkins Center for Talented Youth, Talent Search State Award
- 2007 Lancaster Newspapers Science and Engineering Fair Junior Champion

**Community Activities**

Jonathan has played the piano in fundraisers for the American Red Cross the past three years. He also plays in benefit concerts, raising money for organizations including, "Free The Children." Jonathan is a volunteer at Southeast Lancaster Health Services, The American Red Cross, and tutors younger students at his school. He is the accompanist of the Calvary Church children's choir and is an alumnus of the National Youth Leadership Forum on Medicine.

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