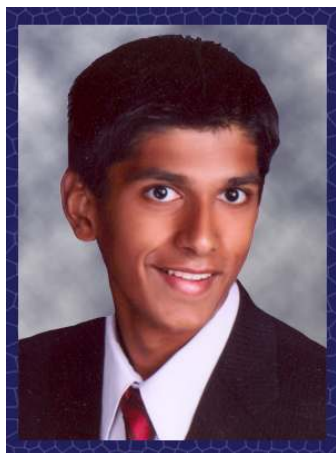




**Davidson Fellow  
Rahul Pandey**

(\$10,000 Scholarship Recipient)



**Personal Info**

Age: 17  
Rochester, Michigan

**School, College and Career Plans**

A graduate of Stoney Creek High School, Rahul is attending Stanford University this fall where he will pursue a degree in physics or electrical engineering. He hopes to utilize his passion for science in academia or industry to create a positive change.

**Davidson Fellows Submission (Science)**

In his project, "A Microwave Metamaterial Lens with Negative Index of Refraction," Rahul created a negative index refraction lens made of metamaterials. Metamaterials have the unique property to bend electromagnetic waves of a certain frequency backward, so an image is possible on the opposite side of a lens. He modeled the energy flow of negative index materials in terms of lens geometry, refractive index, focal length and source distance, finding a linear relationship with  $n = -1$ . Rahul's work has applications in stealth technology, antenna elements, radio frequency signal switching, and lenses that do not adhere to the diffraction limit.

**Biography**

Throughout his education in public schools, Rahul always sought the most advanced coursework possible. He took Advanced Placement Calculus during his freshman year of high school, and has attended local colleges to take eight higher level math courses, from Calculus III to Abstract Algebra.

In his desire to use his advanced knowledge of physics, Rahul began pursuing his Davidson Fellows project as a high school sophomore. One of the first things he learned as a researcher was perseverance; Rahul continued forward with his plans despite a period of fruitless investigation. He also had to become accustomed to technical writing in the process of preparing a formal research report.

Rahul was president of his school's Science Olympiad and Math Club organizations. As part of the Stoney Creek Chamber Singers, a select vocal ensemble, he has sung with the Detroit Symphony Orchestra. Rahul received a Division I superior rating for solo and ensemble performances.

In his spare time, Rahul enjoys watching and playing tennis, serving as captain on his school's varsity team. He also played soccer for two years.

*Please see next page.*



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Rahul Pandey**

(Cont.)

**Honors/Awards**

- 2009 Davidson Fellow
- 2009 Intel Science Talent Search Semifinalist
- 2009 Intel International Science and Engineering Fair Finalist
- 2009 Intel International Science and Engineering Fair IEEE President's Scholarship
- 2009 Stoney Creek High School Valedictorian
- 2009 National Merit Finalist
- 2009 Advanced Placement Scholar with Distinction
- 2009 Science and Engineering Fair of Metro Detroit Grand Award
- 2009 and 2008 American Mathematics Competition School Winner
- 2009, 2008, 2007 American Invitational Mathematics Examination Qualifier
- 2009, 2008, 2007 Stoney Creek High School Award of Excellence Recipient
- 2009, 2007, 2006 Oakland University Summer Math Institute
- 2008 Published in the November 2008 issue of *Microwave and Optical Technology Letters*
- 2008 Intel International Science and Engineering Fair Finalist
- 2008 Intel ISEF, Second Place Award from the Ashtavadhani Vidwan Ambati Subbaraya Chetty Foundation
- 2008 Science and Engineering Fair of Metro Detroit Grand Award

**Community Activities**

Rahul has volunteered for several years at Crittenton Hospital assisting various departments, and has volunteered in community activities through the National Honor Society. As a member of Brahman Samaj of North America, Rahul served as a youth leader and organized a forum for children to ask member adults about their heritage, and discuss the problems of growing up "in between" Indian and American cultures.

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