Davidson Institute for Talent Development

**Davidson Fellow**

# Divya Nag

($10,000 Scholarship Recipient)

## Personal Info

Divya Nag
Age: 17
El Dorado Hills, California

## School, College and Career Plans

This fall Divya will be a senior in Mira Loma High School's International Baccalaureate program and hopes to pursue a career in research as an M.D. and Ph.D. She also plans to continue her geoscience studies and research in this field.

## Davidson Fellows Submission *(Science)*

In her project titled, "Thermal Analysis and Thermogravimetry Techniques to Quantify and Prevent Forest Fires," Divya Nag developed a thermal analysis technique to quantify the effects of forest fires and a novel ratio to determine organic matter loss in on-site situations. Wildfires have proven to be a problem of high economic loss and great environmental impact. By using differential scanning calorimetry, thermogravimetry and x-ray diffraction, Divya determined soil ignition temperatures and soil compositions before and after burning. These techniques can be used in evaluating the efficacy of prescribed burning and forest management.

## Biography

Divya's quest for knowledge began in the eighth grade when she began taking math classes as the youngest student to ever attend Folsom Lake Community College. By ninth grade, she began taking Earth Science courses at the junior college where she became interested in geology and was recommended for Stanford's Geology summer program. At this summer program, Divya's interest in Geology continued to grow.

After her time at Stanford, she continued to take Physical Geology courses at Folsom Lake Community College, and was admitted to the Accelerated College Entrance Program at California State University. At Sacramento State, she carried a college-level workload in addition to her high school's rigorous International Baccalaureate program. While researching her Davidson Fellows project, Divya felt that the Thermochemistry laboratory at University of California-Davis became her home away from home spending more than 20 hours a week (during the school year) and 40 hours a week (during the summer) at the lab.

Divya enjoys playing field hockey, listening to a variety of music and working on art pieces. She has served as the editor-in-chief of her high school's yearbook for three years, been an active member of Girl Scouts for more than 10 years, served as captain of League's Girls Field Hockey for two years and held various leadership positions in the high school Spanish Club.

*Please see next page.*

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## Divya Nag

*(Cont.)*

### Honors/Awards

- 2008 Davidson Fellow
- 2008 Published Author and Presentation of Findings at 36th North American Thermal Analysis Society Conference (Atlanta, GA)
- 2008 University of California- Davis, Submission of Record of Invention
- 2008 Girl Scout Gold Award
- 2008 California State Science Fair, Second Place, Earth and Planetary Sciences
- 2008 Sacramento Regional Science and Engineering Fair, First Place, Earth and Planetary Science
- 2007 – Ongoing Research Group Member, Nanomaterials in the Environment, Agriculture and Technology (NEAT) under direction of Professor Alexandra Navrotsky, UC Davis Department of Thermochemistry
- 2007 Intel International Science and Engineering Fair (ISEF), Finalist
- 2007 Sacramento Regional Science and Engineering Fair, Overall First Place, Senior Division
- 2007 Sacramento Regional Science and Engineering Fair, First Place, Materials and Bioengineering
- 2007 Intel's Excellence in Computer Science Award
- 2007 Navy Medal and Plaque for Outstanding Scientific Discovery

### Community Activities

Originating from a ninth grade research report a few years ago, Divya began community service projects in dementia care homes, children abuse shelters and schools for the blind and deaf.

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