



Davidson Fellow Kavita Shukla

(\$10,000 Scholarship Recipient)



Personal Info

Kavita Shukla

Age: 17

Ellicott City, Maryland

School, College and Career Plans

A class of 2002 graduate from Centennial High School, Kavita begins classes at Harvard this fall and will major in biology and economics.

Davidson Fellows Submission (*Science*)

Kavita recognized the antibacterial and antifungal properties of the ancient Indian herb fenugreek, and translated her inquisitiveness into a multidisciplinary science study resulting in a patent for a fenugreek food packaging paper. In her project, *Food Preservation Technology Utilizing Fenugreek (Trigonella Foenum Graecum)*, Kavita discovered multiple uses for the plant as a cost-effective, safe and natural way to preserve fresh fruits and vegetables, as well as a non-toxic water purifier.

Biography

Kavita has always been inquisitive with a drive for invention. Kavita invented her first device, a special egg slicer, when she was in the fourth grade.

According to a recent article about her in the July 2002 edition of *Popular Science*, Kavita's idea to use the herb fenugreek as a food preserver initiated from an incident that occurred while she was visiting her grandmother in Bhopal, India. The tap water in Bhopal is full of bacteria, and one day Kavita accidentally drank some of the water while brushing her teeth. Her grandmother told her to take some fenugreek powder, an ancient culinary and medicinal herb. During the next day, Kavita never became sick, and she began to think about the antibacterial properties of fenugreek.

When Kavita returned to the United States, she began laboratory experiments using fenugreek as a water purifier. As her research progressed, she started experiments to investigate the food preservation aspects of fenugreek on fresh fruits and vegetables. Kavita's experiments led to a patent for fenugreek-treated paper to preserve food.

Kavita was president of her school's Speech/Debate Team and received first place at the 2002 Howard Community College Speech Tournament. She also held a number of officer positions within the Harvard Model Congress. In her spare time, Kavita enjoys playing the violin, performing at benefit concerts and playing field hockey.

Please see next page.

The Davidson Institute for Talent Development

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(Cont.)

Honors/Awards

- 2002 Davidson Fellow (September)
- 2002 Coca-Cola National Scholar
- 2002 Intel Science Talent Search, Semi-finalist
- 2002 Lemelson-MIT Invention Apprenticeship Award Recipient
- 2002 USA Today Academic, First Team
- 2002 Weizmann Institute in Israel Summer Research Program
- 2002, 2001 Intel International Science and Engineering Fair , Finalist
- 2001 Baltimore Orioles/Deer Park Environmental Service Scholarship Program
- 2001 International Science and Engineering Fair (ISEF), First Grand Award in Environmental Sciences
- 2001 National Gallery for America's Young Inventors, Inductee
- 2001 National Inventors Hall of Fame, Young Inventors Award
- Awarded United States Patent for "Botanical Extract-Coated Material for the Preservation of Perishable Substances"
- Awarded United States Patent for "Smart Lid", a lab safety sensor device
- National Honor Society

Community Activities

Kavita co-founded Safe H₂O, a student-run non-profit residential water testing company that has tested more than 500 residential water samples. As chief executive officer, finance and marketing manager of Safe H₂O, Kavita supervised a staff of 53 students, ten departments and managed an annual budget of \$11,500. She wrote and presented the Safe H₂O business plan and grant proposals. This organization received the 2000 Top Youth Entrepreneurs Award from the Maryland Chamber of Commerce.

When Kavita was 10 and 11 years old, she founded Bring Hope and Opportunity to a Kid (BOOK) and raised funds to purchase books for homeless shelters in the United States and needy schools in India. Kavita also founded Kids Helping Kids to raise funds to purchase toys for children with terminal illnesses at Johns Hopkins Children's Hospital.

Kavita volunteered as an instructor at a summer art camp for young children between the ages of 4 and 12. She has also served as an Algebra, PreCalculus and Chemistry tutor for her peers through the National Honor Society.

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