

**Davidson Fellow
Laurie Rumker**

\$25,000 Scholarship Recipient



Personal Info

Age: 17
Portland, Oregon

School, College and Career Plans

Laurie is a rising senior at Oregon Episcopal School. She is examining possible colleges and majors, and her long-range goal is to explore and improve the human condition.

Davidson Fellows Submission (Science)

In her project, "Biodegradation of Organoclay Surfactants by Straight-Chain Hydrocarbon-Degrading Microbial Isolates and Potential Implications for Treatment of Contaminated Sediments," Laurie investigated the susceptibility of organoclay to biodegradation by microorganisms within river sediments. Organoclay is a chemically-modified clay material used to prevent hydrophobic pollutants from rising into the water ecosystem. Through spectrophotometric analyses and oxygen uptake tests, Laurie found biodegradation of the chemical structures within organoclay, which could impair the ability of the organoclay to adsorb and retain pollutants. Laurie's work has important implications for the treatment of contaminated sediments.

Biography

Laurie's research project idea arose from her avid interest in the environment, concern about pollution and enchantment with water systems and marine studies. She is fascinated with the natural world, an underlying reason why she enjoys the rewarding challenge of scientific work. Laurie's research addresses a critical question for her hometown of Portland, as well as for other areas around the world grappling with sediment contamination.

Laurie has attended Oregon Episcopal School (OES) for her entire academic career. OES provided her with many opportunities for learning beyond the core academic curriculum of Math, Sciences, English, History, Comparative Religion and Arts. Through school programs, she has traveled to Southern India, Mexico and Costa Rica to explore other cultures and to participate in home-stay and Spanish language immersion programs.

Laurie has been training in classical piano for 12 years and cello for five years. She sings in her high school's concert choir and selectively-auditioned a cappella group, and sang with the Oregon Repertory Singers Youth Choirs, pre-professional community youth choirs, for eight years. Laurie has played on the OES varsity soccer team for four years and varsity lacrosse team for three years. She enjoys spending time with family and friends as well as outdoor activities including hiking, biking, swimming, kayaking, backpacking, sailing, snorkeling and skiing.

Please see next page.



Davidson Fellow
Laurie Rumker
(cont.)

- 2010 Davidson Fellow
- 2010 Research Science Institute (RSI) Scholar
- 2010 U.S. Stockholm Junior Water Prize Competition, Oregon State Winner
- 2010 Intel International Science and Engineering Fair (ISEF), First Place in Environmental Management and Navy Scholarship Award Winner
- 2010 National Junior Science and Humanities Symposium, Delegate and Competitor
- 2010 Oregon Junior Academy of Science/Oregon Junior Science and Humanities Symposium, Best of Fair
- 2010 Northwest Science Expo (State Intel ISEF), First Place in Environmental Management and Winner of Vardhana Innovative Presentation Award
- 2010 National Spanish Exam, Silver Award
- 2009 National Junior Science and Humanities Symposium, First Place in Environmental Science/Earth and Space Science
- 2009 Intel ISEF, Second Place in Environmental Management
- 2009 London International Youth Science Forum, U.S. Delegate and Exhibitor,
- 2009 Oregon Junior Academy of Science/Oregon Junior Science and Humanities Symposium, Best of Fair
- 2008 Science at Sea Program, Sea Education Association High Honors,
- 2007 Discovery Channel Young Scientist Challenge, Finalist and Winner Discovery Health Channel Discretionary Prize Winner
- 2005 FIRST LEGO League Open European Championship, Team Competitor

Community Activities

Laurie was the first student leader for Run for Congo Women (RfCW), which raises sponsorships for women and children in the Democratic Republic of Congo through Women for Women International. She has served as the Student Coordinator on the Portland RfCW Organizing Team for four years. Laurie is a member of the OES Service Learning Action Committee, a student group that organizes all cross-divisional and Upper School service projects, and the Midwinter Madness Committee, the student group responsible for the Upper School's major annual charity fundraiser. Laurie was a mentor for a local sixth grade student through the STARCAST program. In the spring of 2009, the OES faculty awarded Laurie the Patty Jeanne Semura Award, given to a sophomore who possesses the vision, creativity and potential to make a difference in the world and who is an active builder of community.

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