



Oleg Ovchinnikov Wins Vanderbilt Prize

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Undergraduate physics major Oleg Ovchinnikov has been named the winner of the 2009 Vanderbilt Prize for Undergraduate Research in Physics & Astronomy. His entry on "Deciphering Energy Transformation on the Nanoscale" featured his work with Dr. Sergei Kalinin and Dr. Stephen Jesse at the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory. In the current landscape, timely and intelligent data collection, as well as finding a means to process and interpret complex, multidimensional data, are roadblocks to understanding how energy is transformed on the nanoscale. Oleg's project developed scanning probe microscopy methods to map energy transformations and dissipation on the nanoscale by maximizing collection of useful information and using artificial intelligence algorithms for analysis. These methods are well-suited for studying energy storage in batteries and supercapacitors, among other applications.

This is the fifth year Vanderbilt has offered the prize, which is open to students at all U.S. institutions. The motivation was to encourage and reward undergraduate students for original research work and to make the university's graduate program more visible. This year's prize comes with a \$2,000 award for Oleg; two finalists, Amanda Stevie Bergman of Smith College and Karan Pankaj Jani of The Pennsylvania State University at University Park, won \$1,000 each. They are all invited to attend a banquet at Vanderbilt later this summer, with the Chair of the Physics Department, the Director of Graduate Studies, the Dean of the Graduate School and the Dean of the College of Arts and Science in attendance.

This isn't the first honor for Oleg's work. In March this presentation was also named the outstanding student poster at the [2009 Tennessee Section of the American Association of Physics Teachers meeting](#), held at Oak Ridge High School.