Colloquium

REνOLUTION 2012: AN EXCITING YEAR IN NEUTRINO PHYSICS

Dr. Lindley Winslow, UCLA

Wednesday, November 28 ❖ 4:00 P.M. ❖ 118 NSH

Refreshments at 3:30 P.M. in 202 NSH

The neutrino remains the most mysterious of the standard model particle. These secret agents of the weak interaction can pass through light years of matter without leaving a trace; however, in the last year several experiments have forced the neutrino to give up some of its secrets. In this talk, I will present an overview of the field from surprising results from experiment designed to measure what was the last unknown mixing angle governing neutrino oscillation θ_{13} to experiments now coming online which aim to answer the fundamental question of whether the neutrino is its own antiparticle. All of these are difficult measurements requiring large detectors. It may be that the very tiny nanocrystals known as quantum dots, which have been so successful in imaging applications, may find applications in the next generation of neutrino experiments. Preliminary work on this topic will also be presented.

Notre Dame Science
Department of Physics