Particle Physics Seminar

New Directions in Neutrino Physics

Tuesday

March 21

4:00 P.M.

Rm 415 NSH

Geralyn (Sam) Zeller

Fermilab

Neutrinos are among the most abundant particles in the universe and they influence an enormous range of physics. Neutrinos allow us to search for new forces of nature, they measure the composition of the earth's crust, they tell us how the sun works, and they allow us to peer into the inner workings of a supernova explosion. Despite all that we have learned from these special particles, there remains a surprising amount of information we still do not know about neutrinos themselves. In this talk, I will examine the open questions in neutrino physics, explain why these questions are interesting, and discuss plans for answering them in future experiments. These future plans include the launch of a new short-baseline neutrino program at Fermilab which has the capability to tell us if new types of neutrinos exist. The coming years promise to be very exciting as we move in new directions to better understand these unique subatomic particles and their connections to the world we live in.