

**Space Science Seminar
Tuesday, 2016 February 2
10:30 a.m.
NSSTC/2096**

**Discovering the Secrets of the Elusive Neutrino
and Going Beyond**

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Host: Dr. Nasser Barghouty

The early history of the Elusive Neutrino and the discovery of neutrino oscillation implying neutrino mass will be presented. Current ongoing experiments, like NOvA and the future DUNE experiment at the Fermilab accelerator complex, aim to understand the mass hierarchy of neutrino flavors and are related to the important search for CP violation in the neutrino sector that could explain the matter anti-matter asymmetry of the Universe. Today we know that much of the Universe is composed of Dark Matter; why it is important, but how we are soon reaching the limit of discovery because the solar neutrino flux on Earth are a background to searching for direct Dark Matter observation. Futuristic ideas about how a space-probe detector can greatly enhance the study of neutrinos and overcome the backgrounds in searches for dark matter that come from the Sun will be explained.

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