We are in a midst of a very exciting era in neutrino physics. After the confirmation of neutrino oscillations and the discovery of neutrino mass, the field is moving toward even more fundamental questions like neutrino mass hierarchy and existence of CP violation in leptons. Answering any of these questions requires state of the art experiments. In my talk, I will start with a historical overview of neutrino oscillations, motivation for the search for the mixing angle $\theta_{13}$ with Double Chooz, and future CP violation search with LBDUSEL experiment. In the end, I will briefly address how we can use neutrinos to answer important questions in geology and potential safeguard applications.

ANNOUNCEMENT:

Mardi Gras Workshop
"Special Symmetries and Ab Initio Methods for Light Nuclei"

18-20 February 2009
435 Nicholson Hall

Professor Jerry Draayer's Theoretical Nuclear Physics Group will host an international workshop on forefront nuclear physics research. The workshop will address a quintessential goal of nuclear physics, namely to achieve realistic (ab initio) modeling of the complex dynamics of atomic nuclei using inter-nucleon interactions that are tied to quantum chromodynamics and hence to better comprehend the evolution of the universe from a fundamental quark/gluon level. "Please visit www.phys.lsu.edu/lsunpw/ for the workshop program and for more information."