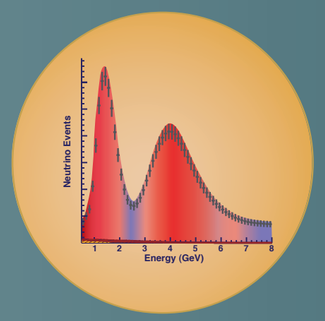
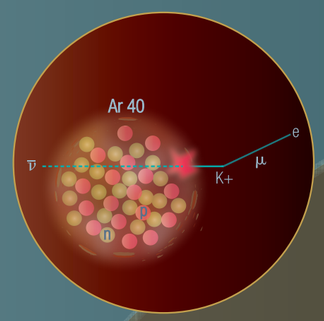
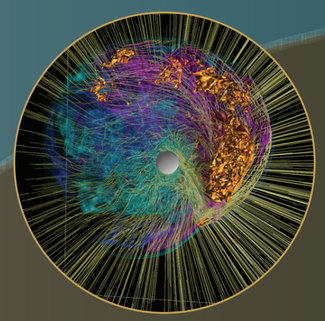


Through precise studies of neutrino flavor oscillations enabled by an intense, optimized beam and advanced detectors, LBNE aims to shed light on the mystery of the matter-antimatter asymmetry in the Universe.



With the world's largest cryogenic particle detector deep underground, LBNE will probe the stability of matter and its relation to the Grand Unification of forces.



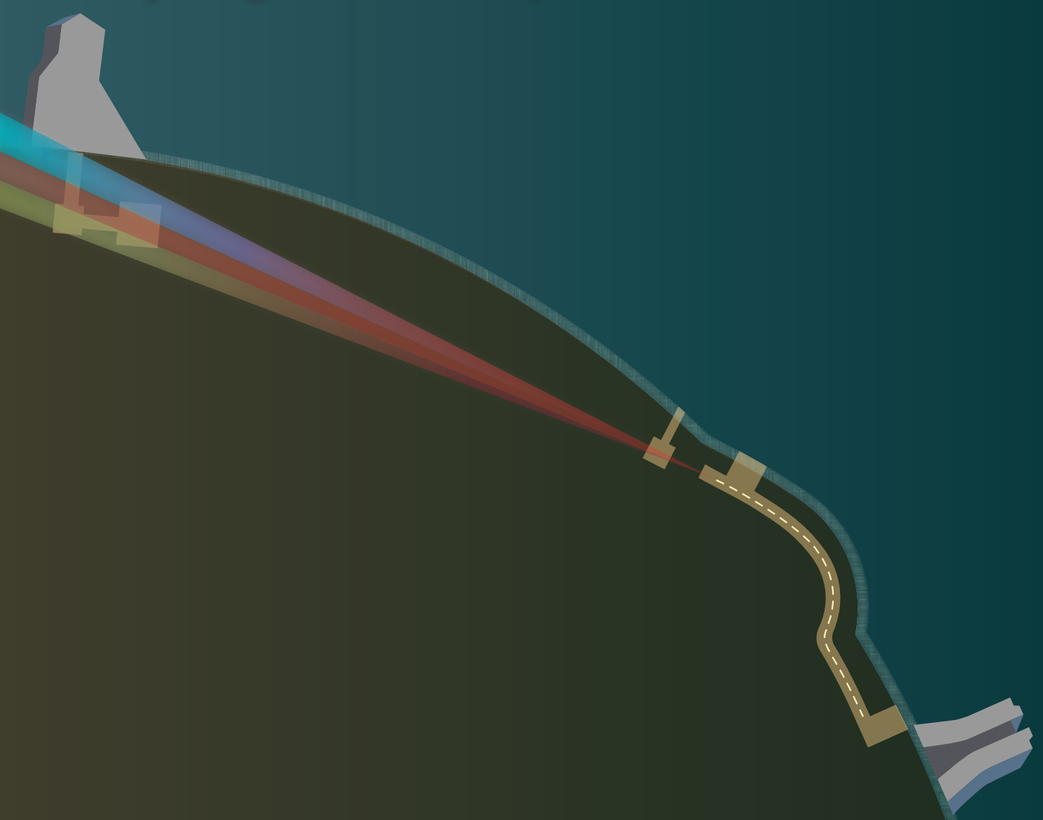
LBNE's observation of thousands of neutrinos from a core-collapse supernova in the Milky Way would allow us to peer inside a newly-formed neutron star and potentially witness the birth of a black hole.

U.S. DEPARTMENT OF ENERGY | Office of Science

Sanford Underground Research Facility

Fermilab

The Long-Baseline Neutrino Experiment: Exploring Fundamental Symmetries of the Universe

The Long-Baseline Neutrino Experiment

Exploring Fundamental Symmetries of the Universe