

# The Neutrino Campus

The Neutrino Campus is a newly defined campus region that will incorporate existing experiments and the proposed LBNE experiment into a unified neutrino focus region. The existing experiments are:

The Main Injector Neutrino Oscillation Search (MINOS) experiment is a long-baseline neutrino experiment designed to observe the phenomena of neutrino oscillations.

The Booster Neutrino Experiment (BooNE) is designed to verify definitively the results of the Los Alamos Liquid Scintillator Neutrino Detector experiment.

The MiniBooNE experiment explores physics topics from the fundamental understanding of neutrino interaction probabilities to more exotic matters, such as neutrinos from supernovae and the neutrino magnetic moment.

The MicroBooNE experiment will use a 70-ton liquid argon time-projection chamber (LArTPC) to examine neutrino beams at Fermilab.

The MINERvA experiment is a neutrino-scattering experiment that uses the NuMI beamline at Fermilab to search for low-energy neutrino interactions.

The NuMI Off-axis Electron Neutrino Appearance experiment (NOvA) will search for evidence of muon-to-electron neutrino oscillation and will study the properties of the elusive particles.



**The Long Baseline Neutrino Experiment (LBNE)** is a proposed world-class program in neutrino physics that would measure fundamental physical parameters to high precision and explore physics beyond the Standard Model. The measurements LBNE would make would greatly increase our understanding of neutrinos and their role in the universe, thereby better elucidating the nature of matter and anti-matter. LBNE would require the construction of six or seven surface buildings and a large berm. The scope of the Campus development would include additional roadways and access from the Central Campus and site configurations to accommodate the new facilities.



**legend**

- 1 Minos
- 2 NOvA
- 3 Mini-BooNE
- 4 LArTF
- 5 LBNE 5 (Primary Beam SB)
- 6 LBNE 20 (Target Complex)
- 7 LBNE 30 (Absorber Complex)
- 8 LBNE 40 (Near Detector Complex)
- 9 Short Baseline Neutrino

**Neutrino Campus Key Plan**

