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The Short Baseline Neutrino Program at Fermilab

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The Fermilab Short-Baseline Neutrino (SBN) program, with three liquid argon time projection chamber (LAr-TPC) detectors located along the Booster Neutrino Beam, presents a rich physics and R&D opportunity. SBN will perform sensitive searches for neutrino oscillations in both appearance and disappearance channels at the 1 eVˆ2 mass- splitting scale, thereby testing the sterile neutrino interpretation of the anomalous excesses of electron (anti)neutrinos observed by LSND and MiniBooNE. Also, the SBN detectors play a major role in on-going R&D efforts aimed at realizing multi-kiloton-scale LAr-TPC detectors in the next generation long-baseline neutrino oscillation experiment DUNE. To form the SBN program, two additional detectors will join MicroBooNE (currently operational at 470m along the beam); the new Short-Baseline Near Detector (SBND) will be installed at 110m, and the largest existing LAr-TPC, the ICARUST600, will be placed at 600m. In this talk, we present the current status of the SBND and ICARUS detectors and review the physics reach of the full three- detector SBN program.

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