

Sophie Berkman – HEP Seminar – November 29, 2022
FNAL

Title: Neutrinos: Tiny Particles, Big Questions

Neutrinos have surprised scientists ever since their original postulation to save conservation of energy and they now point to a gap in the otherwise rigorously experimentally validated standard model of particle physics that describes our known universe. They are abundant elusive particles and by studying them we may begin to address big questions about what our universe is made of and why. There is a continuous physics program to learn more about neutrinos with a series of detectors based at Fermilab. The first of these detectors, MicroBooNE, has reported results on a longstanding anomaly in neutrino physics and will be followed by further exploration of neutrinos with the commissioning Short Baseline Neutrino program (SBN), and the future DUNE experiment. This seminar will present where this program is now, including recent results from MicroBooNE, and how we are building toward the next generations of detectors which will provide more insight into these fundamental particles.