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PROSPECT: A Short-baseline Reactor Precision Spectrum and Oscillation Experiment (15' + 3')

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Comparison of reactor antineutrino flux and spectrum measurements to model predictions have revealed an apparent deficit in the reactor antineutrino interaction rate and an unexpected spectral deviation. PROSPECT is a phased experiment consisting of segmented Li-loaded liquid scintillator antineutrino detectors that will be located near the High Flux Isotope Reactor (HFIR) at the Oak Ridge National Laboratory. The experiment is designed to resolve these anomalous results by searching for short-baseline neutrino oscillations to test the hypothesis of sterile neutrinos and by performing the first precision measurement of the U-235 reactor antineutrino spectrum. This talk will provide an overview of the design, sensitivity and discovery potential of PROSPECT, and discuss the status of the experiment.

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