

Abstract Submitted
for the APR16 Meeting of
The American Physical Society

PROSPECT: the Precision Reactor Oscillation and Spectrum Experiment DONALD JONES, Temple University, PROSPECT COLLABORATION — PROSPECT is a phased experiment consisting of segmented Li-loaded liquid scintillator antineutrino detectors designed to probe short-baseline neutrino oscillations and precisely measure the reactor antineutrino spectrum. The experiment will be located at the High Flux Isotope Reactor (HFIR) at Oak Ridge National Lab. The first phase is a movable 3 tonne detector located 7-9 m from the compact, highly enriched uranium core. Over the past three years, PROSPECT has deployed multiple prototype detectors at HFIR to understand the local background environment and demonstrate active and passive background rejection. A two-segment prototype has been developed that demonstrates critical subsystems of the full detector. Measuring the neutrino spectrum from ^{235}U will give insight to the recent spectral discrepancies and provide an important benchmark for future reactor experiments. As a high statistics experiment, PROSPECT will probe the sterile neutrino best-fit region within one year of operation at HFIR.

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Date submitted: 25 Feb 2016

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