

Abstract Submitted  
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**Development and Prototyping of the PROSPECT Antineutrino Detector** KELLEY COMMEFORD, Drexel Univ, PROSPECT COLLABORATION — The PROSPECT experiment will make the most precise measurement of the  $^{235}\text{U}$  reactor antineutrino spectrum as well as search for sterile neutrinos using a segmented Li-loaded liquid scintillator neutrino detector. Several prototype detectors of increasing size, complexity, and fidelity have been constructed and tested as part of the PROSPECT detector development program. The challenges to overcome include the efficient rejection of cosmogenic background and collection of optical photons in a compact volume. Design choices regarding segment structure and layout, calibration source deployment, and optical collection methods are discussed. Results from the most recent multi-segment prototype, PROSPECT-50, will also be shown.

Kelley Commeford  
Drexel Univ

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