Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Status of the DarkLight Experiment CHARLES EPSTEIN, Massachusetts Inst of Tech-MIT, DARKLIGHT COLLABORATION — The DarkLight experiment aims to search for a dark photon in the low mass region 10-100 MeV/c^2. The process $e^- p \rightarrow e^- p e^+ e^-$ will be studied by using the Jefferson Lab energy-recovering linac's high-intensity 100 MeV, 1 MW electron beam incident on a gaseous hydrogen target. Full track reconstruction of the four-particle final state will be performed in order to search for a resonance on the e^+-e^- invariant mass spectrum. A Phase 1 DarkLight experiment is in preparation in which we will additionally address new Standard Model measurements at low energy and high intensity. The design of the complete (Phase 2) DarkLight experiment is currently in progress. The status of the Phase 1 experiment will be described and the plan for the Phase 2 experiment presented.

Charles Epstein
Massachusetts Inst of Tech-MIT

Date submitted: 07 Jan 2015 Electronic form version 1.4