

Title: **Microwave Cavity Search for 0.1 meV Axions**

Name: P. L. Slocum

O. K. Baker, J. L. Hirshfield, S. Kazakov, M. Lapointe, V. Yakovlev

Affiliation: Yale University

Email: penny.slocum@yale.edu

Abstract

Using a cylindrical Cu resonant cavity coupled to the pulsed, 1 MW 34.2 GHz magnicon source at Yale, we will search for the pseudoscalar coupling ($g=10^{-6}/\text{GeV}$) of two photons to a light neutral boson (LNB) in the presence of a strong axial magnetic field. A second cylindrical Cu cavity will be positioned coaxially to allow reconversion of the LNB to a 34.2 GHz photon in the same magnetic field. This approach is analogous to the "light shining through a wall" technique that has been implemented at optical wavelengths. We will discuss the design of the experiment as well as the expected sensitivity of the apparatus to the LNB conversion.