Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Measuring actin dynamics during phagocytosis using photoswitchable fluorescence DANIEL T. KOVARI, JENNIFER E. CURTIS, Georgia Institute of Technology — Phagocytosis has traditionally been investigated in terms of the relevant biochemical signaling pathways. However, a growing number of studies investigating the physical aspects of phagocytosis have demonstrated that several distinct forces are exerted throughout particle ingestion. We use variations on FRAP (Fluorescence Recovery After Photobleaching) in combination with photoswitchable fluorescent protein to investigate actin dynamics as a phagocyte attempts to engulf its prey. The goal of our actin studies are to determine the recruitment and polymerization rate of actin in the forming phagosome and whether an organized *contractile actin ring* is present and responsible for phagosome closure, as proposed in the literature. These experiments are ongoing and contribute to our long term effort of developing a physics based model of phagocytosis.

Daniel Kovari
Georgia Institute of Technology

Date submitted: 08 Nov 2012 Electronic form version 1.4