Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Probing the Superconducting Proximity Effect in a Topological Insultor using Scanning Tunneling Microscopy IAN DAYTON, Department of Physics and Astronomy, Michigan State University, DUCK-YOUNG CHUNG, Materials Science Division, Argonne National Laboratory, THOMAS CHASAPIS, Department of Chemistry, Northwestern University, ERIC GOODWIN, REZA LOLOEE, Department of Physics and Astronomy, Michigan State University, MERCOURI KANATZIDIS, Department of Chemistry, Northwestern University, STUART TESSMER, Department of Physics and Astronomy, Michigan State University
— Topological insulators (TI) embody a new state of quantum matter characterized by topological invariants; this contrasts with superconductors (S), as superconductivity arises from a spontaneously broken symmetry of the underlying electron system. When a superconductor is placed on the surface of a topological insulator, the behavior of the superconducting condensate across the S/TI interface offers the opportunity to study the interplay between these two distinct quantum states. In this talk, we present our progress in applying cryogenic Scanning Tunneling Microscopy measurements to probe the local density of states in proximity to Pb/Bi_2Se_3 interfaces.

Ian Dayton
Michigan State University

Date submitted: 14 Nov 2014 Electronic form version 1.4