Abstract Submitted
for the TSF16 Meeting of
The American Physical Society

**Working toward a de novo structure of the hypothetical zinc binding protein, AztD** HRIDINDU ROYCHOWDHURY, ERIK YUKL, New Mexico State University — ATP-binding cassette transporters (ABC transporters) are essential for pathogenic scavenging of transition metals in the often metal-starved environments of host-pathogen interfaces. ABC transporters canonically consist of three proteins: a membrane bound permease, an ATPase, and a periplasmic solute-binding protein (SBP). A fourth protein on the operon has been found to be highly conserved across a number of pathogenic bacteria. In this study, we aim to understand the structure of this hypothetical protein, AztD, native to the soil bacteria Paracoccus denitrificans, of which there are a number of virulent homologs. Because wild-type AztD binds only 0.6 Zn per protein, an insufficient number to obtain phases necessary to solve structure via x-ray crystallography, innocuous mutations changing leucine residues to seleno-methionine have been made as well as soaking the crystals in bromide salts. We hope to solve the crystal structure using anomalous scattering off the selenium and bromine atoms covalently incorporated into the protein.

Hridindu Roychowdhury
New Mexico State University

Date submitted: 19 Sep 2016 Electronic form version 1.4