1084-55-64 **Justin M Curry*** (jucurry@math.upenn.edu), 209 South 33rd St., David Rittenhouse Laboratories, Philadelphia, PA 19104. *Cosheaves and Dualities in Generalized Sensor Networks.* Preliminary report.

In this talk, I will introduce the computational framework of cellular sheaves and cosheaves, and advocate for a different perspective on Morse Theory, persistent homology, network coding and pursuit-evasion problems in sensor networks. This framework provides local-to-global results as well as generalizations of Poincare duality. To provide concrete examples, I will introduce a new model for sensing with different modalities (colors, sounds, etc.) and show how a long exact sequence of sheaf cohomology provides forcing results that allow you to infer what you don't know from what you do. (Received August 19, 2012)