

# *New High Energy Theory Seminar*



*Tuesday April 23, 2013 3:00 p.m.  
Serin Physics Lab Room 385E  
126 Frelinghuysen Rd.  
Piscataway, NJ*

*Josh Ruderman  
UC Berkeley*

## *“Dark Matters in Supersymmetry”*

The dark matter of the Universe may be composed of the Lightest Supersymmetric Particle (LSP). I will discuss scenarios where the LSP is a gravitino or a neutralino. When the LSP is a gravitino, I will show that cosmology places a powerful upper bound on the masses of the rest of the superpartner spectrum, requiring superpartners parametrically near the weak scale. Alternatively, if the dark matter is a neutralino it can scatter against nuclei by exchanging the Higgs boson. As I will review, ongoing direct detection experiments are now probing the interesting parameter space for Higgs exchange. However, I will identify "blind spots" in neutralino parameter space that cannot be probed by direct detection.