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**Speaker:** Noah Schweber  
University of California, Berkeley

Thursday, November 5, 2015

3:00 PM

125 Hayes-Healy Hall

**Title:** Higher-order reverse mathematics

**Abstract:**

Reverse mathematics studies the computability-theoretic content of theorems of mathematics. A crucial aspect of this is that the theorems in question must be "translateable" into the language of second-order arithmetic. For a wide swath of mathematics, this works nicely, but there are plenty of areas - especially measure theory and topology - which are fundamentally \*higher-order\*. To analyze these, we need to extend the scope of reverse mathematics, at the very least to type-2 objects (such as arbitrary functions of real numbers). We will look at what this entails, and the various directions in which one can take higher-order reverse mathematics.