



**Speaker:** Chris Schommer-Pries  
MIT

Thursday, March 29, 2012

3:10pm - 4:10pm & 4:30pm - 5:30pm

125 Hayes-Healy Hall & 117 Hayes-Healy

**Title:** On the unicity of the homotopy theory of higher categories.

**Abstract:**

We will discuss joint work with Clark Barwick in which we propose four axioms that a quasicategory should satisfy to be considered a reasonable homotopy theory of  $(\infty, n)$ -categories. This axiomatization requires that a homotopy theory of  $(\infty, n)$ -categories, when equipped with a small amount of extra structure, satisfies a simple, yet surprising, universal property. We further prove that the space of such quasicategories is homotopy equivalent to  $B(\mathbb{Z}/2)^n$ . This generalizes a theorem of Toen when  $n = 1$ , and it verifies two conjectures of Simpson. In particular, any two such quasicategories are equivalent. We also provide a large class of examples of models satisfying our axioms, including those of Joyal, Kan, Lurie, Simpson, and Rezk.

\*First half of talk: 3:10pm to 4:10pm in 125 HH

\*Second half of talk: 4:30pm to 5:30pm in 117 HH