



**Speaker:** Isaac Goldbring  
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Tuesday, February 10, 2015  
11:00 AM  
125 Hayes-Healy Hall

**Title:** On Kirchberg's embedding problem

**Abstract:**

A  $C^*$  algebra is a closed self-adjoint subalgebra of  $B(H)$ , the bounded operators on a Hilbert space  $H$ . Kirchberg asked whether every  $C^*$  algebra embeds into an ultrapower of a particular  $C^*$  algebra, the Cuntz algebra  $O_2$ . In this talk, I will explain the model-theoretic content of this problem. In particular, I will show how model-theoretic forcing can be used to give a weak local reformulation of the problem in terms of approximate nuclearity of tuples. No knowledge of  $C^*$  algebras will be assumed and all necessary notions will be defined. This talk represents joint work with Thomas Sinclair.