Mathematics, Statistics, and Computer Science **@ UIC**

Logic Seminar

The Cube Problem for Linear Orders

Garrett Ervin (UC Irvine)

Abstract: Does there exist a linear order that isomorphic to its lexicographically ordered cube but not to its square? Sierpinski posed this problem in his 1958 textbook on set theory *Cardinal and Ordinal Numbers*. The corresponding question has been answered positively for many other classes of structures, including groups, rings, topological spaces, Boolean algebras, and graphs. However, the answer to Sierpinski's question turns out to be negative: every linear order isomorphic to its cube is already isomorphic to its square. In this talk, we outline a proof of this result, and connect it with several other problems about linear orders.

Tuesday, November 15 at 4:00 PM in SEO 427