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

Special Colloquium

Growth, distortion, and isoperimetry in topology

Fedor Manin (Ohio State University)

Abstract: The contractibility of a loop in our universe becomes almost irrelevant if it takes longer than the age of the universe to contract it; in other words, the simple connectivity of our experience is ultimately a geometric, not a topological fact. In the 1990's, this and other considerations led Gromov to propose a program of quantitative topology: asking about the ''size'' or ''complexity'' of the objects (a homotopy between two maps; a filling of a nullcobordant manifold) whose existence is implied by the results of algebraic and geometric topology. I will discuss the questions and the motivations behind them, as well as some answers, most of them recent.

There will be tea in SEO 300 starting at 4:00.

Wednesday, November 28 at 3:00 PM in 636 SEO