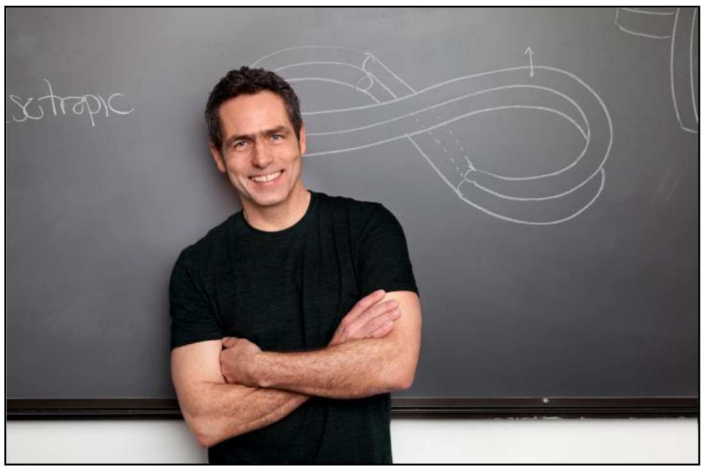
2013-2014 UIC Distinguished Lecture Series

Department of Mathematics, Statistics and Computer Science

March 5-7, 2014



Michael J. Hopkins

Professor of Mathematics, Harvard University

Lecture 1: Invariants as the engine for mathematics

In mathematics and in science an "invariant" of a system is a quantity, like the total energy, that does not change as the system evolves. The discovery and understanding of invariants is a significant part of what drives the development of mathematics. In this talk I will describe some simple mathematical invariants and the deep mathematics that has evolved from trying to understand them.

Behavioral Sciences Building (BSB) 250, 4pm
(BSB is just west of the 28-story University Hall.)
Reception to follow

Lecture 2: The Kervaire Invariant

The Kervaire invariant is a subtle and important invariant lying at the interface of algebraic and differential topology. I will describe the history of this invariant, the problem it raised, and its eventual solution.

Lecture Center D, 005, 4pm

Lecture 3: Chern-Weil invariants and abstract homotopy theory

Nature does not come to us with a coordinate system. In writing down the equations describing the evolution of physical systems, it is therefore important that the mathematical entities that arise do not depend on a choice of coordinates. The Chern-Weil invariants are important examples of such entities. In this talk I will explain the Chern-Weil invariants and how one is led by thinking carefully about them to modern day abstract homotopy theory.

Lecture Center D, 005, 3pm
Tea at 4:15pm in SEO 300

For more information, please contact eareyes@uic.edu