

# TEMPLE UNIVERSITY MATHEMATICS COLLOQUIUM

**David Futer**

Michigan State University

will speak on

## **From combinatorics to geometry for knots and 3-manifolds**

### ABSTRACT:

Powerful theorems of Thurston, Perelman, and Mostow tell us that almost every 3-manifold admits a hyperbolic metric, and that this metric is unique. Thus, in principle, there is a 1-to-1 correspondence between a combinatorial description of a 3-manifold and its geometry. On the other hand, a concrete dictionary between combinatorial features and geometric measurements has been much harder to obtain.

I will survey some recent results that explicitly relate the combinatorics of a knot diagram to geometric features of the knot complement and related closed 3-manifolds. There are also interesting connections to the behavior of surfaces and the Jones polynomial of the knot.

WEDNESDAY, 20 FEBRUARY 2008

LECTURE AT 4:00 PM

COFFEE, TEA, AND REFRESHMENTS FROM 3-5 PM

ROOM 617, WACHMAN BUILDING

DEPARTMENT OF MATHEMATICS