

Kempner Colloquium

# COUNTING CURVES VIRTUALLY

**Jonathan Wise**

Stanford University

The collection of algebraic curves in a projective complex variety can be completed to a moduli space in many different ways. When the number of equations of such a moduli space matches the number of variables, one expects the moduli space to be a finite collection of points. In practice, however, redundancies among the equations lead to moduli spaces of high dimension with bad singularities.

Nevertheless, it is often possible to define a “virtual” number of points for these unexpectedly complicated moduli spaces. In this talk, I will explain how virtual enumeration works in a very familiar example and then describe several different ways of applying these ideas to the enumeration of curves in a smooth projective variety with prescribed tangency conditions along a smooth divisor. Finally, I will explain how these different approaches are related.

January 27, 2012

3:00 p.m.

MATH 350