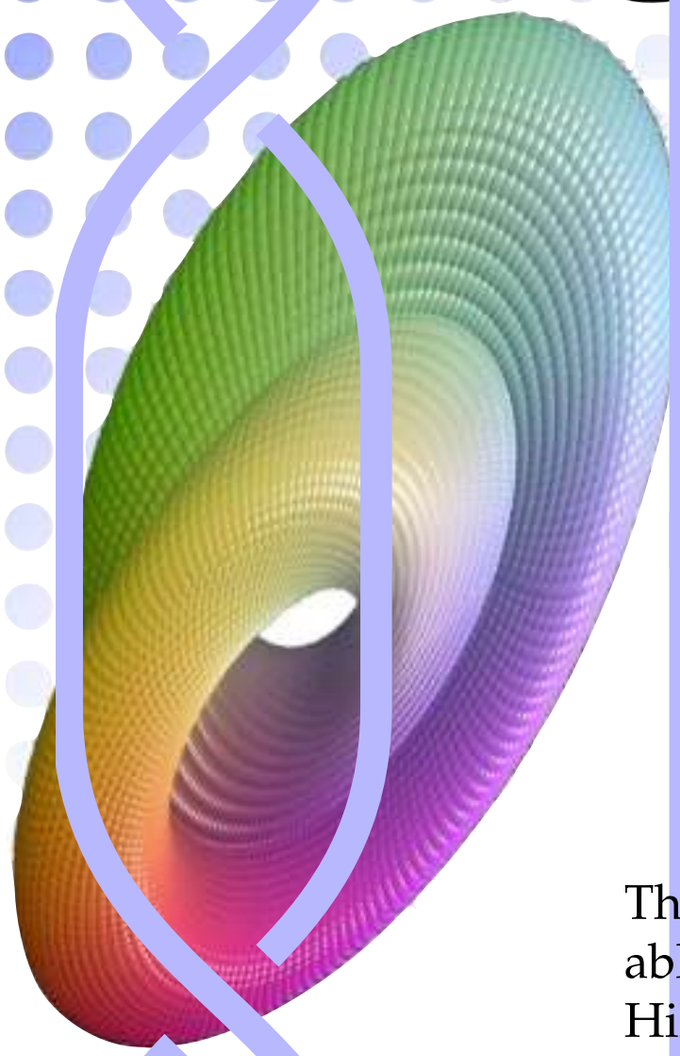
Michigan Math Club

Thursday at 4pm in the Nesbitt Room
Free Pizza and Pop



Braids, Polynomials, and Hilbert's 13th Problem

Jesse Wolfson • UC-Irvine • 10 January 2019

There are still completely open fundamental questions about polynomials in one variable. One example is Hilbert's 13th Problem, a conjecture going back long before Hilbert. Indeed, the invention of algebraic topology grew out of an effort to understand how the roots of a polynomial depend on the coefficients.

The goal of this talk is to explain part of the circle of ideas surrounding these questions. Along the way, we will encounter some beautiful classical objects – the space of monic, degree d square-free polynomials, algebraic functions, lines on cubic surfaces, level structures on Jacobians, braid groups, Galois groups, and configuration spaces – all intimately related to each other, all with mysteries still to reveal.