

Mentor Lecture Series

Organizer: Daniel Erman and Bianca Viray

Monday, 4:10–5:00pm, 60 Evans

Dec. 4 **David Eisenbud**, UCB

Interpolation of Polynomials

Let P be a finite set of points in \mathbb{R}^n . A polynomial in n variables defines a function from P to \mathbb{R} . What is the least degree of the polynomials needed to define all functions from P to \mathbb{R} ? The answer depends in a subtle way on the relative position of the points, and leads to an important measure of complexity in algebraic geometry called "Castelnuovo-Mumford regularity". I'll introduce the ideas necessary to state the connection, and talk about other uses of these notions.

The Mentor Lecture Series is designed for first and second year graduate students. The series aims to acquaint beginning graduate students with potential dissertation supervisors whom they might not otherwise closely encounter, and to impart a taste of research activity in the mathematics department in order to help beginning students choose fields of specialization.