



The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University



Corey Irving

Santa Clara University

*Generalized Barycentric Coordinates:
An Introduction and an Application to Algebraic Geometry*

APRIL 16, 2014, MH320

Abstract: Barycentric coordinates allow one to express points of a polygon as convex combinations of the vertices. For triangles these coordinates are uniquely defined and well-known. However, for n -gons with $n > 3$, they are not unique and less well-known. These generalized barycentric coordinates are used in a variety of applications ranging from the finite element method in differential equations to computer animation. For the first part of the talk we discuss various ways to define barycentric coordinates for general n -gons. The second part will focus on one type of barycentric coordinates, Wachspress coordinates, which are rational functions on the polygon, and we examine an algebraic variety they define.

Background: One semester of abstract algebra.

About the speaker: Corey Irving received his Ph.D. from Texas A&M University in 2012 and is now a Lecturer at Santa Clara University. His research interests include algebraic geometry, geometric modeling, and baseball sabermetrics.

SNACKS IN MH331B AT 2:30 PM

TALKS START AT 3 PM

For more information, see our full schedule at:

<http://www.math.sjsu.edu/~hsu/colloq/>