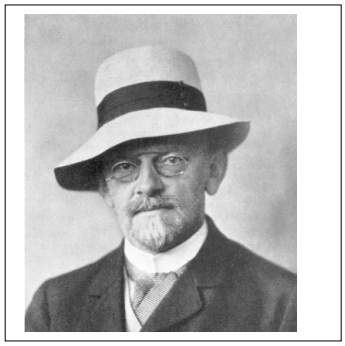
The SUMO Speaker Series for Undergraduates

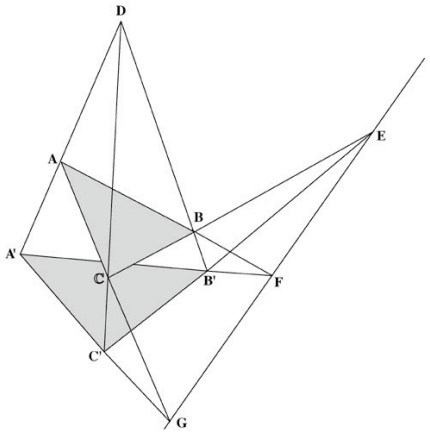


(food from Pizza Chicago)
Wednesday, September 30th
4:15-5:05, room 380C

From perspective drawing to the eighth dimension

Professor John Stillwell, USF

The discovery of perspective drawing in the 15th century led to interest in a new kind of geometry - projective geometry - in which points and lines are the main ingredients. Even with this simple subject matter there are some surprises, where three points fall on the same line or three lines pass through the same point, seemingly for no good reason.



The big surprises, or "coincidences", of projective geometry are known as the Pappus theorem, Desargues theorem, and the little Desargues theorem. Even more surprising, these purely geometric theorems were found (by David Hilbert and Ruth Moufang) to control what kind of *algebra* is compatible with the geometry. Compatible algebras occur in 1, 2, 4, and 8 dimensions.

sumo.stanford.edu/speakers