Abstract: We present a computational study of plane curves of degree four, with primary focus on representing their defining polynomials as sums of squares and as symmetric determinants. Based on joint work with Daniel Plaumann and Cynthia Vinzant, this lecture spans the bridge from 19th century algebraic geometry to 21st century polynomial optimization theory.

About the speaker: Bernd Sturmfels received doctoral degrees in Mathematics in 1987 from the University of Washington, Seattle, and the Technical University Darmstadt, Germany. After two postdoctoral years in Minneapolis and Linz, Austria, he taught at Cornell University, before joining UC Berkeley in 1995, where he is Professor of Mathematics, Statistics and Computer Science. His honors include a National Young Investigator Fellowship, a Sloan Fellowship, and a David and Lucile Packard Fellowship, a Clay Senior Scholarship, an Alexander von Humboldt Senior Research Prize, and the SIAM von Neumann Lectureship. Presently, he serves as Vice President of the American Mathematical Society.

Wednesday, September 7, 2011, at 4:15pm
Millikan Auditorium, Pomona College
Refreshments at 3:45 p.m. in the Millikan Auditorium & wine and cheese after the talk in Harry’s Room (Millikan 209)

The dinner will be hosted by Prof. Stephan Garcia.
Please contact Prof. Garcia if you are interested in attending the dinner