1056-R5-290 **Marshall Hampton*** (mhampton@d.umn.edu), 1117 University Dr., Dept. of Mathematics and Statistics, UMD, SCC 140, Duluth, MN 55812. *Visualizing the polyhedral geometry of algebraic systems.*

This talk will highlight the connections between the geometry of polytopes and the solutions to polynomial systems of equations. Beginning with the Newton polytope of a single polynomial, we will explore other objects and operations such as the Minkowski sum, Bernstein's theorem, amoebae, and Groebner fans. The visualizations shown will all be done with free and open-source software, primarily Sage, Singular, Gfan, cddlib, and ffmpeg. (Received August 25, 2009)