1030-14-140 **Mihnea Popa*** (mpopa@math.uic.edu). *Numerical inequalities via syzygies and generic vanishing.*

I will explain how generic vanishing methods for Fourier-Mukai functors and the Syzygy Theorem provide numerical inequalities between basic invariants of smooth projective varieties, including a generalization in arbitrary dimension of the Castelnuovo-de Franchis inequality for surfaces. Joint work with G. Pareschi. (Received July 30, 2007)