1007-14-127   **Thomas Nevins*** (`nevins@uiuc.edu`), Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL 61801. *Chern classes of singular varieties.*

Constructions of Chern classes for singular varieties were given in the 1960s by Schwartz and the 1970s by MacPherson. I will describe new Chern classes for singular varieties that satisfy a strong birational invariance property not possessed by the Chern-Schwartz-MacPherson classes; the construction of these new classes was motivated by earlier "stringy numerical invariants" of singular varieties. If there is time, I will also sketch a "categorification" (work in progress) that would unite Chern classes, elliptic genera, and the chiral deRham complex of singular varieties in a much broader framework. This is joint work with de Fernex, Lupercio, and Uribe. (Received February 15, 2005)