1068-53-235 **Daniel Halpern-Leistner*** (danielhl@math.berkeley.edu). *Morse theory for orbifolds and the Lefschetz hyperplane theorem.*

Orbifolds arise in the study of Marsden-Weinstein quotients and in the moduli problems of symplectic topology. Poincare' duality and other homological properties of manifolds continue to hold for orbifolds, but only for homology with rational coefficients. It is thus surprising that the Lefschetz hyperplane theorem, a classical theorem on the cohomology of compact Kaehler manifolds, continues to hold with integral coefficients if one uses "stacky" cohomology. I will discuss how the proof of this theorem requires us to extend Morse theory to orbifolds. Much of this story even works for more general differentiable stacks and Lie groupoids. (Received January 19, 2011)