1000-13-66 **Anurag K. Singh** and **Irena Swanson*** (`iswanson@nmsu.edu`), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003. *Associated primes of local cohomology modules and Frobenius powers.*

We construct normal hypersurfaces whose local cohomology modules have infinitely many associated primes. These include hypersurfaces of characteristic zero with rational singularities, as well as F-regular hypersurfaces of positive characteristic. As a consequence, we answer a question on the associated primes of certain families of ideals which arose from the localization problem in tight closure theory. (Received August 11, 2004)