1145-00-3034          **Jennifer Kenkel*** (`jenniferkenkel@gmail.com`), jenniferkenkel@gmail.com. *Stanley-Reisner rings and thickenings*

A 2000 question of Eisenbud, Mustaţă, and Stillman translates to a question on the surjectivity of maps between local cohomology modules of thickenings. I have explored this question for squarefree monomial ideals in low dimensions. In the early 1970s, Stanley, Reisner, and Hochster identied quotients of polynomial rings by squarefree monomial ideals with nite simplicial complexes. This identication has allowed algebraists to examine quotients of rings by squarefree monomial ideals using both algebraic and geometric methods. This identication is helpful in many scenarios, however, I have constructed two squarefree monomial ideals whose associated simplicial complexes are homotopy equivalent, yet the quotient rings give opposing answers to the question of Eisenbud, Mustaţă, and Stillman. (Received October 19, 2018)