1157-13-157 **Monica A. Lewis*** (malewi@umich.edu). *The local cohomology of a parameter ideal with respect to an arbitrary ideal.*

Let S be a complete intersection presented as R/J for R a regular ring and J a parameter ideal in R. Let I be an ideal containing J. It is well known that the set of associated primes of $H^i_I(S)$ can be infinite, but far less is known about the set of minimal primes. In 2017, Hochster and Núñez-Betancourt showed that if R has prime characteristic $p > 0$, then the finiteness of $\operatorname{Ass} H^i_I(J)$ implies the finiteness of $\operatorname{Min} H^{i-1}_I(S)$, raising the following question: is $\operatorname{Ass} H^i_I(J)$ always finite? We give a positive answer when $i = 2$ but provide a counterexample when $i = 3$. The counterexample crucially requires $\operatorname{Ass} H^2_I(S)$ to be infinite. The following question, to the best of our knowledge, is open: (under suitable hypotheses on R) does the finiteness of $\operatorname{Ass} H^{i-1}_I(S)$ imply the finiteness of $\operatorname{Ass} H^i_I(J)$? When S is a domain, we give a positive answer when $i = 3$. When S is locally factorial, we extend this to $i = 4$. Finally, if R has prime characteristic $p > 0$ and S is regular, we give a complete answer by showing that $\operatorname{Ass} H^i_I(J)$ is finite for all $i \geq 0$. (Received January 26, 2020)