1145-20-934 **Lisa A DeMeyer*** (demey1la@cmich.edu), Department of Mathematics, Pearce Hall 216, Mount Pleasant, MI 48859. *Clique Homology and the Zero-Divisor graph problem.*

The zero-divisor graph associated to a commutative ring R is the graph whose vertices are labeled by the nonzero zero divisors of R and where two distinct vertices x and y are adjacent in case $xy = 0$ in R. This graph has been studied extensively since it was first introduced by Beck in 1988. The study of the zero-divisor graph has been extended to other contexts, including commutative semigroups, the set of ideals of a ring, semilattices, lattices, posets, Boolean monoids, and groupoids. A simplicial complex using cliques was introduced by F. DeMeyer and L. DeMeyer in 2005 for the zero-divisor graph of a commutative semigroup , and which can be used to study the zero divisor graph in each of the contexts above. In this talk, we will discuss the use of clique homology to study the zero-divisor graph, including applications to the zero divisor graph of a semigroup and to the zero divisor graph of a ring. (Received September 17, 2018)