1061-16-157 **Alex S Dugas*** (adugas@richmond.edu), Dept. of Mathematics & Computer Science, University of Richmond, 28 Westhampton Way, Richmond, VA 23173. *Periodic modules and algebras.* Preliminary report.

It follows from Eisenbud's matrix factorization theorem that any maximal Cohen-Macaulay module over a hypersurface has a periodic free resolution of period 2. We will review work of Auslander, Reiten and Buchweitz that uses this periodicity to explain the existence of periodic projective resolutions over certain finite-dimensional algebras which arise as stable endomorphism rings of Cohen-Macaulay modules. These algebras are in fact *periodic*, meaning that they have periodic projective resolutions as bimodules and thus periodic Hochschild cohomology as well. We then consider generalizations that produce periodic algebras as endomorphism rings of $d$-cluster tilting objects in a triangulated category. In particular, this work applies to 1-cluster tilting objects in the category of CM-modules over a curve singularity as recently studied by Burban, Iyama, Keller and Reiten. (Received April 12, 2010)