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**Martin William Montgomery\*** ([montgome@noether.uoregon.edu](mailto:montgome@noether.uoregon.edu)), Department of Mathematics, 1222 University of Oregon, Eugene, OR 97403-1222. *Projective Resolutions for Cleft Binomial Rings.*

An Artinian ring  $R$  with Jacobson radical  $J$  is cleft if there is a subring  $S \subseteq R$  such that  $R = S \oplus J$  as abelian groups and  $S \cong R/J$  as rings. Sklar [2000] defines a class of binomial rings which includes the classes of monomial rings, square-free rings, and binomial algebras. Here we extend the results of Anick and Green [1987] to find a method of constructing projective resolutions for certain simple modules over cleft binomial rings. In particular, this technique applies to arbitrary square-free rings and provides a bound on global dimension. (Received September 26, 2005)