

**Meeting:** 998, Houston, Texas, SS 21A, Special Session on Homological Algebra of Commutative Rings

998-13-260            **Mara D Neusel\*** ([mneusel@math.ttu.edu](mailto:mneusel@math.ttu.edu)), Dept of Mathematics and Statistics, Mailstop 4  
1042, Texas Tech University, Lubbock, TX 79409. *On the functor  $\mathcal{U}\backslash$ .* Preliminary report.

Let  $H$  be an algebra over the Steenrod algebra. Let  $M$  be a module over  $H$  and over the Steenrod algebra such that the two actions of the Steenrod algebra (the one on  $H$  and the one on  $M$ ) are compatible. The functor  $\mathcal{U}\backslash$  turns  $M$  into an unstable module over the Steenrod algebra. For example, if  $M = H$  is unstable, and  $FF(M)$  is its ring of fractions, then  $\mathcal{U}\backslash(M)$  is the integral closure of  $M$ . Thus the functor  $\mathcal{U}\backslash$  gives us a way of calculating the integral closure in this case. This in turn has applications in the invariant theory of finite groups over finite fields. In this talk we will present an overview over what is known on this functor. (Received February 29, 2004)