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**Anne V. Shepler** and **Sarah Witherspoon\*** ([sjw@math.tamu.edu](mailto:sjw@math.tamu.edu)), Department of Mathematics, College Station, TX 77843. *Graded Hecke algebras and deformations of crossed products.*

A crossed product of an algebra with a group of automorphisms encodes the group action in a larger algebra. In case the group acts on a polynomial ring, deformations of the crossed product include graded Hecke algebras, symplectic reflection algebras, and rational Cherednik algebras. In order to understand these deformations in a wider context, we give some results on the Gerstenhaber bracket on Hochschild cohomology of the crossed product; this bracket encodes obstructions to deforming the algebra. (Received February 12, 2010)