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Maria M Gillespie* (maria.gillespie@colostate.edu), Department of Mathematics, Colorado State University, Fort Collins, CO 80523, and **Brendon P Rhoades**. *Higher Specht Bases for Generalizations of the Coinvariant Ring*. Preliminary report.

The classical coinvariant ring R_n is the quotient of a polynomial ring in n variables by the positive-degree S_n -invariants, under the natural action of the symmetric group S_n by permuting the variables. Ariki, Terasoma, and Yamada recently discovered a basis for R_n that respects its decomposition into irreducible S_n -modules, consisting of the *higher specht polynomials*.

We provide an extension of the higher Specht basis to the generalized coinvariant rings $R_{n,k}$ introduced by Haglund, Rhoades, and Shimozono. We also give a conjectured higher Specht basis for the Garsia-Procesi modules R_μ , and provide a proof of the conjecture in the case of two-row partition shapes μ . (Received February 27, 2020)