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**Kathrin Bringmann** ([mahlburg@math.mit.edu](mailto:mahlburg@math.mit.edu)), MA 02139, and **Frank Garvan** and **Karl Mahlburg\*** ([mahlburg@math.mit.edu](mailto:mahlburg@math.mit.edu)), Department of Mathematics Room 2-172, 77 Massachusetts Ave, Cambridge, 02139. *Durfee symbol congruences and higher rank moments.*

Andrews defined  $k$ -marked Durfee symbols as a natural, infinite family of combinatorial objects that generalize partitions and are closely connected to the Atkin-Garvan rank moments. He also defined the smallest parts partition function, which is connected to moments for the rank and Dyson's partition crank. He then proved Ramanujan-type congruences for both Durfee symbols and the smallest parts partition function. This talk explains these results from an analytic perspective, showing that the generating functions are natural examples of quasi-mock theta functions (which come from differentiating weak Maass forms). One key result is that the Durfee symbols and smallest parts partition function satisfy infinite families of congruences, similar to those that have recently been shown for the crank and rank. (Received September 20, 2007)