Michael Griffin, Marie Jameson* (mjameson@utk.edu) and Sarah Trebat-Leder. On $p$-adic modular forms and the Bloch-Okounkov theorem.

Bloch-Okounkov studied certain functions on partitions $f$ called shifted symmetric polynomials. They showed that certain $q$-series arising from these functions (the so-called $q$-brackets $\langle f \rangle_q$) are quasimodular forms. We revisit a family of such functions, denoted $Q_k$, and study the $p$-adic properties of their $q$-brackets. To do this, we define regularized versions $Q_k^{(p)}$ for primes $p$. We also use Jacobi forms to show that the $\left< Q_k^{(p)} \right>_q$ are quasimodular and find explicit expressions for them in terms of the $\langle Q_k \rangle_q$. (Received September 21, 2015)