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School of Mathematics and Statistical Science, Edinburg, TX 78539. *Congruences, Cranks and  
Combinatorial Witnesses for Coefficients of Gaussian Polynomials.*

In this talk, we prove several congruences for infinite families of coefficients of Gaussian polynomials,  $p(n, m, N)$ , which enumerate the partitions of  $n$  into at most  $m$  parts, no part larger than  $N$ . We establish a crank statistic and a bijective combinatorial witness by cycling these partitions. Our congruence results and crank come from generating functions and quasipolynomials, while our combinatorial witness and cycles are motivated by the geometry of integer lattices. This is joint work with Lydia Engle. (Received September 03, 2019)