Pure Mathematics Seminar

Recent Results on the Maximal Coefficients Gaussian Polynomials

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It is well known that the coefficients of Gaussian polynomials $\begin{bmatrix} N+m \\ m \end{bmatrix}$ are unimodal and symmetric.

Two recent papers by H. Hahn hint at a partial characterisation of the largest coefficients of the family of Gaussian polynomials of the form $\begin{bmatrix} N+3 \\ 3 \end{bmatrix}$. In this talk we provide a complete characterisation of the maximal coefficients of Gaussian polynomials $\begin{bmatrix} N+3 \\ 3 \end{bmatrix}$. Our general results come from a novel manipulation of the q-series informed by polyhedral geometry in which we establish a quasipolynomial for $\begin{bmatrix} N+3 \\ 3 \end{bmatrix}$. Additionally, we extend a theorem on first differences of partitions into at most three parts to the coefficients of Gaussian polynomials $\begin{bmatrix} N+3 \\ 3 \end{bmatrix}$.

As part of a larger research project, we discuss similar results for $\begin{bmatrix} N+4 \\ 4 \end{bmatrix}$ and the generalisation to $\begin{bmatrix} N+m \\ m \end{bmatrix}$.

Date: **Friday, December 1, 2017**
Time: **10:00 am**
Place: **Edinburg:** EMAGC 1.324, **Brownsville:** Dean's conference room

The talk will be delivered live at the *Edinburg* campus and will be streamed to the Brownsville campus

Coffee has a chance to be served.

For further information or for special accommodations, please contact Dr. Sergey Grigorian via email at [`sergey.grigorian@utrgv.edu`], or Dr. Alexey Garber at [`alexey.garber@utrgv.edu`], or visit the webpage `http://www.utrgv.edu/math/news-events/seminars/puremath/index.htm`