Pure Mathematics Seminar

Polynomiality three ways, and submodular functions

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The purpose of this talk is to give the motivation for an ongoing project. The polynomiality phenomenon is the following: given a sequence of non-negative integers that arises from a counting problem, show that the sequence is actually a polynomial function. There are several ways to prove such phenomena in combinatorics, using Ehrhart theory, Stanley-Reisner theory, or Hopf Algebras. Each technique gives different insight into the polynomials themselves. We will survey these three approaches, in the context of my favorite example, the chromatic polynomial of a graph. My research question is to find other polynomial invariants which arise in all three areas, and my current results involve studying polynomial invariants related to submodular functions on accessible set systems.

Date: **Friday, November 3, 2017**
Time: **10:00 am**
Place: **Edinburg:** EMAGC 1.324, **Brownsville:** Dean's Conference Room

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

Coffee will 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