TEXAS STATE UNIVERSITY

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Discrete Mathematics Seminar

Time: Friday, November 3, 2017, 2:15-3:15 PM
Room: 237 Derrick Hall
Title: A finiteness result for local cohomology modules of Stanley-Reisner rings
Speaker: Dr. Roberto Barrera, Department of Mathematics, Texas State University

Abstract:

While local cohomology modules of a ring may not be finitely generated, they still may possess other finiteness properties. In 1990, Craig Huneke asked if the number of associated prime ideals of a local cohomology module is finite. Huneke's question has since been answered in the affirmative for various families of rings by using different methods in characteristic 0 and in positive characteristic. In 2010, Gennady Lyubeznik gave a characteristic free proof that the local cohomology modules of the polynomial ring have finitely many associated prime ideals. In this talk, the necessary background from D-module theory and local cohomology will be given. We then answer Huneke's question for local cohomology modules of Stanley-Reisner rings using techniques inspired by Lyubeznik. This is joint work with Jeffrey Madsen and Ashley Wheeler.