Department of Mathematical Sciences
Colloquium

Enrique Treviño

Department of Mathematical Sciences, UTEP

On the Generalization of the Frobenius Problem

Consider $a_1, a_2, \ldots, a_n \in \mathbb{N}$ with $\gcd(a_1, \ldots, a_n) = 1$. Let S be $\{\sum_i a_i x_i \mid x_i \in \mathbb{N}_0, i \in [1, n]\}$, the numerical monoid generated by the a_i. Then there exists a number g such that $g \notin S$ and $y > g \Rightarrow y \in S$. Finding g is the classical Frobenius problem (sometimes called the Frobenius Coin-Change problem), a subject heavily studied in literature. In the talk, instead of numbers in $\mathbb{N}$, we consider vectors in $\mathbb{Z}^r$. Using this approach, we generalize many one-dimensional theorems proven in earlier papers, and prove new structural facts unique to higher-dimensional cases. The research group for this project consisted of Jeffrey Amos (KSU), Iuliana Pascu (Wellesley), Enrique Treviño (UTEP), and Yan Zhang (Harvard). The work for this project took place during the 2005 summer at the Trinity University REU (Research Experiences for Undergraduates), under the guidance of Professor Vadim Ponomarenko.

Friday, December 2, 2005 at 4 pm. in Bell Hall 143
The University of Texas at El Paso

> Please note the unusual time for the Colloquium.

Refreshments will be served in front of the colloquium room, 15 minutes before the start of the colloquium.

For further information, please contact Dr. Pavel Šolín, Bell Hall 220. Phone: (915) 747-6770, email: `solin@utep.edu`.