

Department of Mathematics
University of Notre Dame

**ALGEBRAIC GEOMETRY AND COMMUTATIVE
ALGEBRA SEMINAR**

Speaker: Dong Quan Ngoc Nguyen
University of Notre Dame, Dept. of ACMS

Date: Wednesday, August 31, 2016

Time: 3:00 PM

Location: 258 Hurley Hall



Lecture Title:

Certain sets over function fields are polynomial families

Abstract

Let A be a commutative ring with 1. A subset X of A^n is a polynomial family with d parameters if it is the range of a polynomial map from A^d to A^n . It is an old question of Skolem (1938) whether the group $SL_2(A)$ with A being the set of integers is a polynomial family. Only recently, Vaserstein (2010) answered Skolem's question in the affirmative. Along the way, he also shows that many arithmetic groups including the symplectic groups $Sp_{2n}(\mathbb{Z})$, the orthogonal groups $SO_n(\mathbb{Z})$, and the corresponding spinor groups $Spin_n(\mathbb{Z})$ are polynomial families. In this talk, I will discuss my result proving that $SL_n(A)$ with $n > 1$ is a polynomial family, where A is the polynomial ring over a finite field of q elements. This is a function field analogue of Vaserstein's theorem.

Dong Quan Ngoc Nguyen - University of Notre Dame, Dept. of