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**Speaker:** Jose Rodriguez  
University of Notre Dame (ACMS)

Wednesday, February 25, 2015  
3:00 PM  
258 Hurley Hall

**Title:** Numerical irreducible decomposition of multiprojective varieties

**Abstract:**

Numerical algebraic geometry is a growing area of algebraic geometry that involves describing solution sets of systems of polynomial equations. This area has already had an impact in kinematics, statistics, PDE's, and pure math.

This talk will introduce key concepts in numerical algebraic geometry that are used to describe positive dimensional projective varieties. In particular, witness sets will be defined and the classic “regeneration procedure” will be described. The second part of the talk will describe a new “Multi-Regeneration Procedure”. This technique gives an effective way of describing multiprojective varieties and determining their multidegrees.

Throughout the talk motivating examples will be provided, and no previous knowledge of numerical algebraic geometry will be assumed.

This is joint work with Jonathan Hauenstein.