



# Announcing

**A Colloquium Presentation  
January 14, 2009 at 3:30 pm  
Southern Hall 302**

at The University of Southern Mississippi

**Speaker: John Perry**

Department of Mathematics  
The University of Southern Mississippi

**Title: From Gauss to Gröbner bases**

**Abstract:**

Given a system of polynomial equations, how do we answer certain simple and important questions:

1. Does the system have common zeroes?
2. If not, why not?
3. If so, are there finitely or infinitely many common zeroes?
4. If finitely many, what is the precise number?
5. If infinitely many, what is the dimension?

In the linear case, high school students learn how *Gaussian elimination* leads to *echelon form*, which allows one to answer these questions easily. This talk introduces *Buchberger's algorithm* to compute *Gröbner bases*, which generalizes Gaussian elimination for nonlinear systems.

Undergraduate majors are encouraged to attend.

**Further Information**

Further details and information about this and other departmental activities is available online at [http://www.math.usm.edu/bulletin\\_board/](http://www.math.usm.edu/bulletin_board/).