

University of Notre Dame Department of Mathematics

# ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

**Juan Migliore**

University of Notre Dame

*Will give a lecture entitled:*

## **Points on General Plane Curves**

*On*

Tuesday, February 8, 2011

*At*

2:00 PM

*In*

125 Hayes-Healy Hall

### ***Abstract***

I'll talk about some recent joint work with Luca Chiantini. Let  $C$  be a general plane curve of degree  $d$ . What kinds of sets of points lie on  $C$ ? Some questions already answered in the literature include

- What is the Hilbert function for a general choice of  $e$  points on  $C$  (Geramita-Maroscia-Roberts)?
- Which types of complete intersections lie on  $C$  (Carlini-Chiantini-Geramita)?
- Which star configurations lie on  $C$  (Carlini-Van Tuyl)? Carlini speaks on this in our seminar on November 2.

The second of these suggests a natural question. What are the possible Hilbert-Burch matrices corresponding to sets of points on  $C$ ? More specifically, what are the corresponding degree matrices? A related question that we will discuss is what are the possible ways of viewing the defining equation of  $C$  as a determinant?