



INFO SHEET

October 11, 2005

QUEEN'S UNIVERSITY AT KINGSTON
Department of Mathematics and Statistics
<http://www.mast.queensu.ca>

CALENDAR		
Wednesday, October 12	Seminar on Differential-geometric methods in mathematical physics Time: 1:30 p.m – 2:30 p.m. Place: Jeffery 422	Speaker: Oleg Bogoyavlenskij Title: Hamiltonian systems of hydrodynamic type (Continues)
Friday, October 14	Number Theory/Combinatorics Seminar Time: 10:30 a.m. – 11:20 a.m. Place: Jeffery 110	Speaker: John Klapstein, Queen's University Title: Modular Forms and Functional Equations Abstract Attached
Friday, October 14	Department Colloquium Time: 2:30 p.m. Place: Jeffery 234	Speakers: Davidson Heath, BMO, New York and Lorne Carmichael, Queen's University Title: What happens when a mathematician and an economist talk about finance? Abstract Attached
Friday, October 14	Conference Room Time: 3:30 p.m. Place: Jeffery 521	M.SC. Oral Student: Shant Sethian Title: On the construction of non-orthogonal linear space-time block codes Supervisors: F. Alajaji, T. Linder
Monday, October 17	Algebraic Geometry Seminar Time: 4:45 p.m. – 5:45 p.m. Place: Jeffery 319	Speaker: Will Traves, U.S. Naval Academy and University of Maryland Title: Counting conics Abstract Attached

Items for the Info Sheet should reach Anne (burnsa@mast.queensu.ca) by noon on Monday. The Info Sheet is published every Tuesday.

It is now time to submit your textbook orders for the winter term. I can place your textbook orders online for you. I will need course title, name of textbook, edition, author, ISBN number, whether text is required or not required.

Friday, October 14, 10:30 a.m. Jeffery 110

Number Theory/Combinatorics Seminar

Speaker: John Klapstein

Title: Modular Forms and Functional Equations

Abstract: We will discuss the characterization of modular forms by their functional equations, by considering the mellin transform and functional equation for cusp forms. We essentially follow Iwaniec and Lang.

Friday, October 14, 2:30 p.m. Jeffery 234

Department Colloquium

Speakers: Davidson Heath and Lorne Carmichael

Title: What happens when a mathematician and an economist talk about finance?

Abstract: A freewheeling discussion with:

Davidson Heath – former Biomath grad student, now with Bank of Montreal in NYC and
Lorne Carmichael – former Head of Economics, Queen's University

Monday, October 17, 4:45 p.m. Jeffery 319

Algebraic Geometry Seminar

Speaker: Will Traves

Title: Counting conics

Abstract: In the plane, two points are sufficient to determine the line passing through them. It is a fun exercise to check that three points suffice to determine a circle, but how many points are required to determine an ellipse or a hyperbola? What if we replace one of the point conditions by a tangency condition: How many conics pass through a given number of points and are tangent to a given line or a given conic? It is not even clear that these questions are well-posed. The answers may depend on which points, lines and conics we are given. Nineteenth and twentieth century geometers struggled to make sense of these questions, to show that with the proper interpretation they admit clean answers, and to put the subject of enumerative algebraic geometry on a firm mathematical foundation.

Enumerative questions about conics are intrinsically interesting but they also serve as a guide to algebraic geometry. The tools developed to solve these problems reveal deep geometric phenomena. In retrospect many of these seem more valuable than the answers to the original questions. With this in mind, I'll focus on a problem that leads to a lot of interesting geometry. Steiner asked for the number of plane conic curves tangent to five given conics. In solving this problem, we'll meet many interesting objects in algebraic geometry -- moduli spaces, Chow rings and blow-ups. I hope to make these objects accessible to the non-expert.

This talk involves joint work with Amy Ksir and Andrew Bashelor.