THE MATHEMATICS DEPARTMENT PRESENTS

A MATHEMATICS COLLOQUIUM

THURSDAY, April 12, 2007
BOND HALL 227
4:00 pm

Title: **Geometric Inequalities via Mass Transport**

Speaker: **Martial Agueh**, University of Victoria

Abstract: We propose a basic framework to prove a wide range of geometric inequalities such as the ones formulated by Beckner and Gross (logarithmic-Sobolev inequality), Poincare, Talagrand (transport inequality), Sobolev, Gagliardo-Nirenberg, and their extensions by many authors. The framework is widely encompassing as it allows a direct and unifying way for computing best constants and extremals of these inequalities. It also leads to a correspondence between ground state solutions of certain quasilinear or semilinear equations and stationary solutions of nonlinear Fokker-Planck type equations. As expected, these inequalities lead to exponential rates of convergence to equilibria for solutions of Fokker-Planck type equations.

Refreshments will precede the talk at 3:30pm in Bond Hall 300
courtesy of David Hartenstine.