FOCUS RESEARCH GROUP IN MATHEMATICAL SCIENCES.
Optimal Transportation: Its Geometry and Applications. Funded by the National Science Foundation for the period 2000-2005. PIs: L. Caffarelli, C. Evans, M. Feldman, W. Gangbo, R. McCann), $950,000 DMS-00-74037

ACTIVITIES AT GTECH: A semester of emphasis on the Monge-Kantorovich problem (MKP) and its applications was held from August 25, 2000 to December 20, 2000 at the Georgia Institute of Technology. The main lecturer for the Fall semester 2000 was Robert McCann, who gave three hours of lectures every week. This lecture attracted over ten graduate students and faculty members of GTech. The following year, E. Carlen (4 hours), C. Houdré (3 hours) and A. Swiech (4 hours) gave lectures on topics related to the mass transportation. This attracted over 30 graduate students and faculty members of GTech.

VISITORS AT GTECH: Several visitors participated in the semester of emphasis at GTech. The list includes:

- Luigi Ambrosio, Scuola Normale Pisa (Calculus of Variations and PDE)
- Francois Bouchut, Ecole Normale de Paris (Kinetic theory and PDE)
- Yann Brenier, Universite de Paris VI (Fluid Mechanics, PDE)
- Luis Caffarelli, University of Texas at Austin (PDE)
- Dario Cordero, University of Marne-la-Vallee (Functional Analysis and Probability)
- Mike Cullen, European Centre for Medium Range Weather Forecasts, Shinfield Park, United Kingdom (Semigeostrophic systems)
- Michel Ledoux, Universite de Toulouse (Functional Analysis and Probability)
- Robert McCann, University of Toronto (Math. Physics and Calculus of Variations)
- Cedric Villani, Ecole Normale de Paris (Kinetic theory, PDE)

APPLICATIONS: M. Cullen, played an important role introducing many of the people working on the mass transport theory, to problems that originated in semigeostrophic systems.
POSTDOCS: Several postdocs positions were funded under the FRG contract. Two came to GTech: B. Su, A. Sopasakis.

STUDENTS: The FRG funded a RA for the following students at GTech: M. Agueh (PhD 2002), H. Maroofi (PhD 2002), T. Yolcu (currently under

supervision).

WORKSHOP: Under the FRG contact, a workshop was organized in Vancouver (Aug 11–15, 2003) at the Pacific Institute of Mathematical Sciences, on the "Optimal Transportation and Nonlinear Dynamics" (www.pims.math.ca/science/2003/inverse/optimal-index.html). This meeting attracted over 40 participants (leading experts, PhD students and postdocs) from various fields of mathematics, including meteorology, probability, cosmology, geometry, and scientific computing, whose works are all connected to mass transportation theory. The workshop was organized by M. Cullen, L.C. Evans and W. Gangbo.