THE 3RD SYMPOSIUM ON ANALYSIS AND PDES

PURDUE UNIVERSITY, MAY 27-30, 2007

PRINCIPAL LECTURERS

Gerhard Huisken, Max Planck Institute, Potsdam, Germany Isoperimetric Inequalities Related to Mass and Energy in General Relativity

Juan Luis Vázquez, Universidad Autónoma de Madrid, Spain Four Lectures on the Theory of Fast Diffusion

SCHEDULE

All lectures will be held in MATH 175. Refreshments will be located in the Math Library Lounge (3rd floor).

SUNDAY, MAY 27

- 8:30–12:00 Registration
- 9:15 9:30 Opening Remarks
- 9:30–10:30 Gerhard Huisken Lecture 1
- 10:30-11:00 Coffee Break
- 11:00–12:00 **Dejan Slepcev**, Carnegie Mellon University, Pittsburgh, PA Interfacial Dynamics in a Model of Biological Aggregation
- 12:00 2:00 Lunch
- 2:00 3:00 Juan Luis Vázquez Lecture 1
- 3:00 4:00 Lihe Wang, University of Iowa, Iowa City, IA Estimates for a Class of Degenerate Equations
- 4:00-4:20 Coffee Break
- 4:20 4:50 Xuan Hien Nguyen, University of Cincinnati, Cincinnati, OH Construction of Complete Embedded Self-Similar Surfaces Under Mean Curvature Flow
- 4:50-5:20 **Qinian Jin**, University of Texas at Austin, Austin, TX Some Conformally Invariant Fully Nonlinear Elliptic Equations on Manifolds with Boundary

Monday, May 28

- 8:30–12:00 Registration
- 9:00–10:00 Gerhard Huisken Lecture 2
- 10:00–11:00 Juan Manfredi, University of Pittsburgh, Pittsburgh, PA Sharp Friedrichs-Knapp-Stein Inequalities and Applications
- 11:00–11:20 Coffee Break
- 11:20–12:20 Lei Ni, University of California, San Diego, CA Connecting the Entropy Formulae

- 12:20 2:00 Lunch
- 2:00 3:00 Juan Luis Vázquez Lecture 2
- 3:00 4:00 **Inwon Kim**, University of California, Los Angeles, CA Regularity and Monotonicity of Hele-Shaw Flow
- 4:00 4:20 **Tung To**, Columbia University, New York, NY A Free Boundary Problem for the Evolution p-Laplacian Equation with Heat Combustion Boundary Condition
- 4:50-5:20 Luan Thach Hoang, University of Minnesota, Minneapolis, MN Regularity of the Stokes Operator in Thin Domains

TUESDAY, MAY 29

- 9:00-10:00 Gerhard Huisken Lecture 3
- 10:00–11:00 **Patricia Bauman**, Purdue University, West Lafayette, IN A Variational Model for Bent-Core Liquid Crystals
- 11:00-11:20 Coffee Break
- 11:20–12:20 Brian White, Stanford University, Stanford, CA Singularities in Mean Curvature Flow
- 12:20 2:00 Lunch
- 2:00 3:00 Juan Luis Vázquez Lecture 3
- 3:00 4:00 **Panagiota Daskalopoulos**, Columbia University, New York, NY On the Optimal Regularity of Solutions to Two Dimensional Monge-Ampére Equation
- 4:00-4:20 Coffee Break
- 4:20 4:50 Anahit Galstyan, University of Texas-Pan American, Edinburg, TX On the Oscillations of the Solution Curve for a Class of Semilinear Equations
- 4:50 5:20 Giuseppe Tinaglia, University of Notre Dame, Notre Dame, IN Multi-Valued Graphs in Embedded Constant Mean Curvature Disks

CONFERENCE DINNER at Holiday Inn Select City Center (Lafayette)

Dinner Served at 7:00. Cash bar will be available starting 6:00.

WEDNESDAY, MAY 30

- 9:00–10:00 Juan Luis Vázquez Lecture 4
- $10{:}00\,{-}11{:}00$ Gerhard Huisken Lecture 4
- 11:00-11:20 Coffee Break
- 11:20–12:20 Yu Yuan, University of Washington, Seattle, WA

Hessian Estimates for Special Lagrangian Equations