

## CURRICULUM VITAE

**Name:** Katarzyna Saxton  
**Position:** Professor of Mathematics  
**Affiliation:** Department of Mathematical Sciences, Loyola University,  
New Orleans, LA 70118  
**E-mail:** saxton@loyno.edu

### Education

1979 - Ph.D., Institute of Fundamental Technological Research, Polish  
Academy of Science.

1972 - M.Sc., Department of Mathematics, University of Warsaw.

### Selected Publications

*On the influence of damping in hyperbolic equations with parabolic degeneracy*, Quart. Appl. Math., to appear (with R. Saxton ).

*Phase transitions and change of type in low temperature heat propagation*, SIAM Journal on Applied Mathematics, 66, 2006, 1689 - 1702 (with R. Saxton).

*Asymptotic behavior of solutions to quasilinear hyperbolic equations with nonlinear damping*, Quart. Appl. Math., 61, 2003, 295 - 313 (with Hailiang Li ).

*Some effects of phase transitions on heat propagation*, Arch. Mech., 54, 2002, 635 - 646 (with R. Saxton).

*Nonlinearity and memory effects in low temperature heat propagation*, Arch. Mech., 52, 2000, 127 - 142 (with R. Saxton).

*On second sound at the critical temperature*, Quart. Appl. Math., 57, 1999, 723 - 740 (with R. Saxton and W. Kosinski ).

*Second sound in a crystal of NaF at low temperature*, Arch. Mech., 49, 1997, 189 - 196 (with R. Saxton and W. Kosinski).

*Global existence and singularity formation in solutions of a modified Fourier law*, Quart. Appl. Math., 54, 1996, 697 - 707.

### Edited Books

Nonlinear PDE's, Dynamics and Continuum Physics, with J. Bona and R. Saxton, co-editors Contemporary Mathematics, America Mathematical Society, 2000.

### **Recent Conference Presentations**

Damping in Hyperbolic Equations with Parabolic Degeneracy, International Conference on Differential Equations, Equadiff 2011, Loughborough, UK, 1-5 August 2011.

Singular Specific Heat and Second Order Phase Transition, SIAM Conference on Analysis of Partial Differential Equations, December 7 - 10, 2009, Miami, Florida.

Phase transitions in heat propagation at low temperatures, SIAM Conference on Analysis of Partial Differential Equations, December 6 - 8, 2004, Houston, Texas.

### **Research Grants**

National Science Foundation, RUI: Collaborative Research: Balance Laws Modeling Heat Propagation in Solids at Low Temperature, Award #DMS-0104508, February 1, 2002 - January 31, 2005.

Shock Waves and Second Sound in Solids, NSF-NATO East Europe, 1995.

Effects of Memory on Singularity Formation in Continuum Mechanics Louisiana Education Quality Support Fund (LEQSF) Program R&D, RD-A-22, 1991 - 1994.

### **Professional Service**

Co-organizer of the "AMS-IMS-SIAM 1998 Joint Summer Research Conference in the Mathematical Sciences, Mount Holyoke College, South Hadley, Massachusetts, July 19 - 23, 1998.

Co-chair of the American Mathematical Society Special Session: "Nonlinear Evolution Equations and Application", Joint Mathematics Meeting, New Orleans, January 10 - 13, 2001.

Committee: National Science Foundation Applied Mathematics Partial Differential Equations Panel, January 22 - 24, 2003, Arlington, Virginia.

Reviewer for "Mathematical Reviews", American Mathematical Society.

### **Undergraduate Research Supervision/Honor Thesis**

Influence of damping on some hyperbolic conservation laws, 2005 (student Taniecea A. Arceneaux)

Blow up of solutions along degenerate characteristic, 2011 (student Jamal E. Lawson)