

Curriculum Vitae

CRISTINA CAPUTO

Research Interests

Partial Differential Equations, Geometric Analysis, Calculus of Variations

Education

Columbia University, New York, USA

Ph.D. Mathematics (awarded of distinction), October 2006

Thesis: *On Highly Degenerate Surfaces Evolving by the Harmonic Mean Curvature Flow*

Thesis advisor: Prof. Panagiota Daskalopoulos

M. Phil., Mathematics, Columbia University, October 2004

M. Arts, Mathematics, Columbia University, February 2003

University of Bari, Bari, Italy

Bachelor degree in Mathematics (Magna Cum Laude) March 2001

Thesis (in Italian): *Sulle Disuguaglianze di Sobolev Migliorate*

(*On Improved Sobolev Inequalities*)

Thesis advisor: Prof. Enrico Jannelli

Awards/Grants/Visiting positions

Albert Einstein Institute, Max Planck Institute, Golm, Germany, visitor, June-August 2009

Albert Einstein Institute, Max Planck Institute, Golm, Germany, visitor, June-August 2008

Albert Einstein Institute, Max Planck Institute, Golm, Germany, visitor, June-July 2007

MSRI Postdoctoral Fellowship, Fall 2006-Spring 2007

Faculty Fellowship, Columbia University, 2001-2006

Research Assistant Summer Fellowship, Columbia University, 2005

GSAS Grant for Summer Research Support, Columbia University, Summer 2004

EDISU Fellowship, University of Bari, 1997– 2001

Appointments

Instructor-Researcher, University of Texas at Austin, Fall 2006–Spring 2010

Postdoctoral Fellow, MSRI (on leave from UT, Austin), Fall 2006-Spring 2007

Papers

-*Highly Degenerate Harmonic Mean Curvature Flow* (with P. Daskalopoulos)(Calculus of Variations and PDEs, Volume 35, Issue 3, 2009, 365–384)

-*On the evolution of weakly convex hyper-surfaces by the Q_k flow in any dimension N* (with P. Daskalopoulos and N. Sesum) (to appear on Communications in PDEs)

-*Global Regularity of Solutions to Systems of Reaction-Diffusion with Sub-Quadratic Growth in any dimension* (with A. Vasseur) (Communications in PDEs, Volume 34, Issue 10, 2009, pages 1228 - 1250)

-*Minimally invasive surgery for Ricci flow singularities* (with S. Angenent and D. Knopf) (submitted, arXiv:0907.023)

-*Time Scales: from Nabla Calculus to Delta Calculus and viceversa via Duality* (submitted, arXiv:0910.0085)

Academic Service

Co-organizer AMS Central Session on *Formation of Singularities in Geometric Flows*, Fall 2009, Baylor University, October 16-18, 2009

Teaching Assistant for Summer School on Geometric PDEs at the IAS, June 8-12, 2009

Co-organizer Postdoctoral Seminar, MSRI, Fall 2006, Spring 2007

Co-organizer PDEs Learning Seminar, Columbia University, Spring 2006

Teaching

Instructor, UT Austin, Ordinary Differential Equations, Spring 2010

Instructor, UT Austin, Introduction to Number Theory (Guided Discovery Method), Fall 2009

Instructor, UT Austin, Ordinary Differential Equations, Spring 2009

Instructor, UT Austin, Introduction to Real Analysis (Guided Discovery Method), Fall 2008
Instructor, UT Austin, Ordinary Differential Equations, Spring 2008
Instructor, UT Austin, Integral Calculus, Fall 2007
Teaching Assistant, Columbia University, Calculus III, Fall 2003, Spring 2006
Teaching Assistant, Columbia University, Ordinary Differential Equations, Fall 2005
Instructor, Columbia University, College Algebra and Analytic Geometry, Fall 2004
Instructor, Columbia University, Calculus III, Summer 2004
Teaching Assistant, Columbia University, Analysis and Optimization, Spring 2004
Teaching Assistant, Columbia University, Honors Math, Fall 2003
Instructor, Columbia University, *Mathematica* for Calculus II, Spring 2003
Teaching Assistant, Columbia University, Groups and Symmetries, Fall 2002
Instructor, Columbia University, *Mathematica* for Calculus I, Fall 2002
Teaching Assistant, Columbia University, Calculus II, Spring 2002
Teaching Assistant, Columbia University, Calculus I, Fall 2001

Invited Talks

AMS Meeting on Elliptic and Parabolic Problems in Geometry, Newark, USA, May, 2010
 Colloquium, University of Arkansas, February, 2010
 Seminar talk, Max Planck Institute, Golm, Germany, July, 2009
 Seminar talk for AWM summer school on Geometry PDEs, IAS, Princeton, USA, June, 2009
 Geometry seminar, Lehigh University, Bethlehem, USA, February 2009
 Geometry-Analysis Seminar Columbia University, New York City, USA, February 2009
 Geometry seminar, University of Texas at Austin, USA, February 2009
 Analysis seminar, University of Texas at Austin, USA, November 2008
 Geometry-Analysis Seminar, University of Wisconsin, Madison, USA, October 2008
 Nonlinear Evolution Equations, Oberwolfach, Germany, June 2008
 Free Boundary Problems, Theory and Applications, Stockholm, Sweden, June 2008
 Analysis seminar, University of Texas at Austin, USA, November 2007
 Colloquium, Wichita University, Wichita, USA, November 2007
 Geometry seminar, University of Texas at Austin, Austin, USA, October 2007
 Seminar talk, Max Planck Institute, Golm, Germany, July 2007
 Geometric Evolution Equations Seminar MSRI, Berkeley, March 2007
 Institute of Mathematical Science, Chennai, India, January 2007
 8th Pacific Rim Geometry Conference, Sydney, Australia, December 2006
 Geometric Evolution Equations Learning Seminar MSRI, Berkeley, USA, December 2006
 Geometric Evolution Equations Advanced Seminar, MSRI, Berkeley, November 2006
 General Postdoctoral Seminar MSRI, Berkeley, USA, November 2006
 Geometry-Analysis Seminar Columbia University, New York City, USA, May 2006

Conferences

- AMS Meeting on Elliptic and Parabolic Problems in Geometry, Newark, USA, May, 2010
- AMS Central Session on *Formation of Singularities in Geometric Flows*, Fall 2009, Baylor University, Waco, 16-18 October 2009
- Vieri Benci's Conference: Variational and Topological Methods in Nonlinear Analysis, UTSA, San Antonio, 24-26 September 2009
- Differential Geometrie in Grosse Oberwolfach, Germany, 26 July-1 August 2009
- Mathematical problems in Hydrodynamics, Oberwolfach, Germany, 19-24 July 2009
- Symposium in Analysis and PDEs, Purdue University, Lafayette, 27-30 May, 2009
- Nonlinear Geometric- Analysis Conference, Princeton, 23-28 February 2009
- Luis Caffarelli's Conference: Future Directions in Nonlinear PDE, UT, Austin, 10-13 December 2008
- Nonlinear Geometric- Analysis Conference, Princeton, 30 October 2 November 2008
- 40th Texas Geometry and Topology Conference, UT, Austin, 10-12 October 2008
- Calculus of Variations, Oberwolfach, Germany, 6-12 July 2008
- Nonlinear Evolution Equations, Oberwolfach, Germany, 15-21 June 2008
- Free Boundary Problems, Theory and Applications, Stockholm, Sweden, 9-13 June 2008
- SAGE workshop, University of Texas, Austin, 5-8 May 2008
- Geometry Festival, Duke University, Durham, 25-27 April 2008
- 38th Texas Geometry and Topology Conference, Texas A&M, College Station, 19-21 October 2007
- SAGE workshop, University of Texas, Austin, 3-5 May 2007
- Geometric Flows, MSRI, Berkeley, March 2007
- 8th Pacific Rim Geometry Conference, Sydney, Australia, 11-15 December 2006
- Analytic and Computational Aspects of Elliptic and Parabolic Equations MSRI, Berkeley, 23-27 October 2006
- Introductory Workshop on Geometric Flows and Function Theory in Real and Complex Geometry MSRI, Berkeley, 11-15 September 2006

- Connections for Women: Geometric Analysis and Nonlinear Partial Differential Equations
MSRI, Berkeley, 8-9 September 2006
- Introductory Workshop in Nonlinear Elliptic Equations and Its Applications
MSRI, Berkeley, 15-20 August 2005
- Seventh New Mexico Analysis Seminar, University of New Mexico, October 14-15 2004
- International Conference in Harmonic Analysis and PDEs, in Honor of Carlos Kenig,
University of Chicago, Chicago, September 17-19 2004
- 53rd Midwest PDEs Seminar, University of Missouri-Columbia, Columbia, March 19-21 2004
- Geometric Flows: Theory and Computation, IPAM, Los Angeles, February 23 - 27 2004
- XIth SCGAS, University of Irvine, Irvine, February 21-22 2004
- 2nd Symposium in Analysis and PDEs, Purdue University, Lafayette, June 7-10 2004

Summer Schools

- Workshop for Women in Mathematics: An Introduction to Elliptic Partial Differential Equations,
MSRI, Berkeley, USA, 11-13 August 2005
- Variational Calculus, SMI, Cortona, Italy, August 1-15 2004
- Analysis and nonlinear PDEs, 11th Program for Women in Mathematics, Institute for Advanced Study,
Princeton, USA, May 17-27 2004
- Summer school at University of Perugia: Functional Analysis and PDEs, Perugia, Italy 2000

References

Research

Professor Sigurd Angenent
University of Wisconsin-Madison
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Professor Luis Caffarelli
University of Texas at Austin
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Professor Panagiota Daskalopoulos
Columbia University, New York
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Professor Richard Hamilton
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Professor Panagiotis Souganidis
University of Chicago
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Professor Alexis Vasseur
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Teaching

Professor Michael Starbird
University of Texas at Austin
starbird@math.utexas.edu

Personal

Italian citizen
Languages: Fluent in English and Italian. Some knowledge of Spanish.