

Russel E. Caflisch
Resume

Address: IPAM
UCLA
Los Angeles, CA 90095-7121

Tel: 310-983-3297
Fax: 310-825-4756
Email: caflisch@math.ucla.edu
URL: <http://www.math.ucla.edu/~caflisch>

Education

Ph.D., Mathematics, Courant Institute of Math Sciences, NYU, June 1978
M.S., Mathematics, Courant Institute of Math Sciences, NYU, February 1977
B.S., Mathematics, Michigan State University, June 1975

Awards & Honors

SIAM Fellow, 2009-present
Invited Lecturer, SIAM National Meeting, Denver, 2009
Invited Lecturer, International Congress of Mathematicians, Madrid 2006
Alfred P. Sloan Research Fellow, 1984-1989
Hertz Foundation Graduate Fellow, 1975-1978

Professional Experience

2008-present, Director, Institute for Pure and Applied Mathematics (IPAM)
1989-present, Professor, Mathematics Department, UCLA
2001-present, Founding Member, California NanoSystems Institute (CNSI), UCLA
2002-present, Professor, Materials Science & Engineering Department, UCLA
1988-1989, Professor, Courant Institute of Mathematical Sciences, NYU
1984-1988, Associate Professor, Courant Institute of Mathematical Sciences, NYU
1984-1984, Assistant Professor, Courant Institute of Mathematical Sciences, NYU
1979-1982, Assistant Professor, Department of Mathematics, Stanford University
1978-1979, Visiting Member, Courant Institute of Mathematical Sciences, NYU

Editorial Board Member:

Editor-in-Chief, Multiscale Modeling and Simulation
Continuum Mechanics and Thermodynamics
Mathematical Analysis and Applications
European Journal of Applied Mathematics
Mathematical Research Letters
Transport Theory and Statistical Physics

Professional Activities:

Co-Chair, Org. Comm., IPAM Prog. on Multiscale Methods (fall 2005)
Board of Trustees, Institute for Pure and Applied Mathematics (IPAM) (2003-2006)
Scientific Board, American Institute of Math. (AIM) Research Conf. Center (2002-2006)
Information Technology Planning Board, UCLA (2004-present)
Chair, IT Infrastructure Committee, California NanoSystems Institute (CNSI) (2000-2004)
Org. Comm., SIAM Conference on Mathematical Aspects of Materials Science (2004)
Chair, Org. Comm., IPAM Prog. on Math. and Nanoscale Science and Eng. (2002)
PI, Virtual Integrated Prototyp. for Epitaxial Growth, UCLA/Hughes Res. Labs (1997-2000)
Chair, Research Computing Committee, Div. Phys. Science, UCLA (1994-present)
NATO Workshop on Singularities in Fluids, Plasmas and Optics, co-Director (1992)
Future Carrier Technology Study, Naval Studies Board, National Acad. of Sciences (1990)
PI, URI Center for Analysis of Heterogeneous and Nonlinear Media, NYU (1986-1989)
NSF Postdoctoral Fellowship Selection Committee (1987-1989)
Defense Science Study Group, Institute for Defense Analyses (1985-1988)
Organizer for Workshop on Mathematical Aspects of Vortex Dynamics, Leesburg, VA (1988)

Program Committee for National SIAM Meeting, Boston (1986)

Selected Relevant Publications

1. R.E. Caflisch and O. Orellana “Singularity Formation and Ill-Posedness for Vortex Sheets” *SIAM J. Math. Anal.* 20 (1989) 293-307.
2. R.E. Caflisch, W. Morkoff and A. Owen “Valuation of Mortgage Backed Securities Using Brownian bridges to reduce effective dimension” *J. Computational Finance*, 1 (1997) 27-46.
3. R.E. Caflisch, “Monte Carlo and Quasi-Monte Carlo Methods” *Acta Num.* (1998) 1-49.
4. L. Pareschi and R.E. Caflisch, “An implicit Monte Carlo method for rarefied gas dynamics”, *J. Comput. Phys.*, 154 (1999). 90-116.
5. R.E. Caflisch, M. Gyure, B. Merriman, S.J. Osher, C. Ratsch, D. Vvedensky and J. Zinck, “Island dynamics and the level set method for epitaxial growth” *Appl. Math. Lett.* 12 (1999) 13-22.

Other Selected Publications

1. R.E. Caflisch, “The Fluid Dynamic Limit of the Nonlinear Boltzmann Equation,” *Comm. Pure Appl. Math.*, 33 (1980), pp. 651-666.
2. A.C. Schindler, M. F. Gyure, D. D. Vvedensky, R.E. Caflisch, C. Connell and G. D. Simms. “Theory of Strain Relaxation in Heteroepitaxial Systems” *Phys. Rev. B* 67, 075316 (2003).
3. R.E. Caflisch and D. Margetis. “Anisotropic step stiffness from a kinetic model of epitaxial growth” *Multiscale Modeling & Sim.* 7 (2008) 242-273.
4. C. Wang, T. Lin, R.E. Caflisch, B. Cohen and A. Dimits, “Particle simulation of Coulomb collisions: Comparing the methods of Takizuka & Abe and Nanbu” *J. Comp. Phys.* 227 (2008) 4308-4329.
5. R.E. Caflisch, C. Wang, Giacomo Dimarco, B. Cohen and A. Dimits, “A Hybrid Method for Accelerated Simulation of Coulomb Collisions in a Plasma” *Multiscale Model. Sim.*, 7 (2008) 865-887.

Collaborators (over last 4 years): Chris Anderson (UCLA), Jean-Luc Cambier (AFRL), Bruce Cohen (LLNL), Andrew Christlieb (Michigan State U), Giacomo Dimarco (U Ferrara), Andris Dimits (LLNL), Jack Judy (UCLA), M.C. Lombardo (U Palermo), John Luginsland (Numerex), Dio Margetis (U Md), Lorenzo Pareschi (U Ferrara), Allon Percus (Claremont Grad School), Christian Ratsch (UCLA), Gary Rosen (USC), M. Sammartino (U Palermo), Michael Siegel NJIT), Dimitri Vvedensky (Imperial College), Kang Wang (UCLA), Ya-Hong Xie (UCLA), Jinchao Xu (Penn. State U).

Postdoctoral Advisees (over last 5 years): Jason Devita (UCLA), Young-Ju Lee (Rutgers) , Erding Luo (Level Set Systems), Christian Ratsch (IPAM), Raffaele Vardavas (Rand), Richard Wang (UCLA), Xinwei Yu (U. Alberta).

Graduate Advisees (over last 5 years): Youri Bae (U. Arizona), Suneal Chaudhary (Monmouth U.), Yanghong Huang (UCLA), Sunmi Lee (Konkuk Univ., Seoul, Korea), Xiaobin Niu (Utah), Pradeep Thiyanaratnam (Level Set Systems), Hem Wadhar (UCLA), Yang Wang (UCLA).

Graduate Advisors: George Papanicolaou (Stanford)

Postdoctoral Advisors: Joseph Keller (Stanford)