

## PETER J. MUCHA

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Born 24 January, 1971 U.S. citizen

### EDUCATION:

Ph.D. in Applied & Computational Mathematics, Princeton University, 1998  
(thesis advisors: S. A. Orszag & I. Goldhirsch)  
M.A. in Applied & Computational Mathematics, Princeton University, 1996  
M.Phil. in Physics, University of Cambridge, 1995 (thesis advisor: M. Warner)  
B.S. in Engineering Physics, Cornell University, 1993

### PROFESSIONAL EXPERIENCE:

2001–present Assistant Professor, School of Mathematics, Georgia Tech  
1998–2001 Applied Mathematics Instructor, Dept. of Mathematics, MIT

### HONORS & AWARDS:

2003–2006 DOE Early Career PI in Applied Mathematics Award  
1999–2002 NSF Mathematical Sciences Postdoctoral Research Fellowship  
1994–1998 NSF Graduate Fellowship  
1993–1994 Winston Churchill Foundation Scholarship

### CURRENT RESEARCH SUPPORT:

2003–2006 DOE ASCR, DE-FG-02-03ER25567, “Model Interacting Particle Systems for Simulation and Macroscopic Description of Particulate Suspensions”  
2002–2005 NSF Division of Mathematical Sciences, DMS-0204309, “Simulations and Models for Sedimentation at Small Reynolds Numbers”

### COLLABORATORS (in past 60 months):

W. N. Bell, M. P. Brenner, T. Callaghan, M. Carlson, L. Cipelletti, I. Goldhirsch, C. Hohenegger, S. Manley, M. E. J. Newman, M. Niethammer, S. A. Orszag, E. Pichon, M. A. Porter, R. Sadr, P. N. Segrè, B. I. Shraiman, A. Tannenbaum, S.-Y. Tee, G. Turk, B. Van Horn, M. Vergassola, X. Wang, J. White, D. A. Weitz, M. Yoda

### STUDENT COLLABORATORS:

Ph.D. students: Svetlana Bukharina (from 2004), Christel Hohenegger (from 2003), Mark Carlson (2001–2004, co-advised with Greg Turk).  
M.S. students: Vedit Nanda (from 2004, co-advised with Konstantin Mischaikow).  
Collaborations with other Ph.D. students: Marc Niethammer (2002, advisor: Allen Tannenbaum), Shang-You Tee (1999–2004, advisor: David Weitz).  
Undergraduate Research: Michael Abraham (2002), W. Nathan Bell (2002–2003), Thomas Callaghan (2003–2004), Casey Warmbrand (2003).

### SELECTED PUBLICATIONS:

1. “Rigid Fluid: Animating the interplay between rigid bodies and fluid,” M. Carlson, —, & G. Turk, *ACM Transactions on Graphics (SIGGRAPH)* **23**, 377–384 (2004).
2. “A model for velocity fluctuations in sedimentation,” —, S.-Y. Tee, D. A. Weitz, B. I. Shraiman, & M. P. Brenner, *Journal of Fluid Mechanics* **501**, 71–104 (2004).
3. “Diffusivities and front propagation in sedimentation,” — & M. P. Brenner, *Physics of Fluids* **15**, 1305–1313 (2003).
4. “Nonuniversal velocity fluctuations of sedimenting particles,” S.-Y. Tee, —, L. Cipelletti, S. Manley, M. P. Brenner, P. N. Segrè, & D. A. Weitz, *Physical Review Letters* **89**, 054501 (2002).
5. “Melting and Flowing,” M. Carlson, —, B. Van Horn, & G. Turk, *ACM SIGGRAPH Symposium on Computer Animation*, 167–174 (2002).