

## Alexander J. Levine

University of California, Los Angeles  
 Department of Chemistry & Biochemistry  
 3044A Young Hall  
 607 Charles E. Young Dr., East  
 Los Angeles, CA 90095

11636 Montana Ave # 309  
 Los Angeles, CA 90049  
 (310) 689-6819

work: (310) 794-4436  
 fax: (310) 206-4038  
 e-mail: alevine@chem.ucla.edu  
 web: <http://alevine.chem.ucla.edu>

### Education

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- 1989–1996 ..... University of California, Los Angeles. Department of Physics, **Doctorate in Physics** (Ph.D.), thesis entitled *The Statistical Mechanics of Sedimentation*.
- 1989–1990..... University of California, Los Angeles. Department of Physics, **Master of Science in Physics** (M Sc.).
- 1985–1989 ..... University of California, Los Angeles. **Bachelor of Science in Physics** and **Bachelor of Science in Mathematics**. (*Summa cum laude* GPA: 3.95/4.00)

### Employment

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- July 2008 – Present..... University of California, Los Angeles, **Associate Professor**.
- July 2005 – July 2008 ..... University of California, Los Angeles, **Assistant Professor**.
- Sept. 2002 – July 2005 ..... University of Massachusetts, Amherst, **Assistant Professor**.
- 2001– Aug. 2002 ..... University of California, Santa Barbara, **Postdoctoral Researcher**. My postdoctoral research focused on the following topics:
  - Modeling microtubule dynamics during cell division
  - Membrane microrheology
- 1998–2001..... University of Pennsylvania, **Postdoctoral Fellow**. My postdoctoral research focused on the following topics:
  - Dynamics of nematic elastomers
  - Chiral phases of polymeric liquid crystals
  - Microscopic modeling of microrheology techniques
  - Taught Introductory Electricity and Magnetism (Summer Session)
- 1996–1998..... Corporate Research Science Laboratories, Exxon Research and Engineering Company, **Postdoctoral Fellow**. My postdoctoral research focused on the following topics:
  - Theory of wax crystal nucleation
  - Non-linear stability analysis of the polymer film blowing process
  - Developing theory of stress relaxation in star polymer melts
  - Capillary waves at liquid-liquid interfaces
  - The failure of cohesive granular material
  - The non-equilibrium statistical mechanics of non-Brownian sedimentation
- June 1995–Sept. 1995 ..... Lucent Technologies / AT&T Bell Labs, **Research Assistant**.
  - Dynamics of driven charge density waves with S. N. Coppersmith.
- Sept. 1994–June 1995 ..... University of California, Los Angeles, Professional Development Program, UCLA Department of Physics, **Instructor**
- June 1994–Sept. 1994 ..... AT&T Bell Laboratories, **Research Assistant**.
- 1986–1988..... University of California, Los Angeles, Department of Astronomy, **Research Assistant**.
- 1984–1986..... University of California, Brain Research Institute, **Lab Assistant**. I studied changes in neuronal activation potentials during sleep.

## ***Awards and Fellowships***

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- 1993–1996 .... AT&T Graduate Fellowship
- 1989 ..... ΦBK Scholarship
- 1989..... Julian Schwinger Graduate Fellowship
- 1988 ..... Election to Mathematics Honors Society
- 1988 ..... Election to ΦBK
- 1987 ..... Joined Physics Honors Society ΣΠΣ
- 1985 ..... Extension of Alumni Fellowship for a second year
  - Freshman Honors Society
  - Golden Key Honors Society
  - Alumni Scholarship University of California
  - Four Year Regents Scholarship University of California

## ***Publication List***

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### **Articles Since Appointment to Assistant Professor**

#### **Articles in Preparation**

1. Alex J. Levine and C. F. Schmidt *Microrheology* Reports on Progress in Physics **INVITED**
2. Mark L. Henle and Alex J. Levine *The mobility of point and extended particles on spherical viscous interfaces*, Physical Review E. To be submitted in March 2009.
3. Moumita Das and Alex J. Levine, *The effect of network architecture on the mechanics of disordered biopolymer networks*, Physical Review E.
4. Moumita Das, Don Blair, and Alex J. Levine, *The effect of topological defects on sublimation kinetics in two dimensions*, Proceedings of the National Academy of Sciences.

#### **Submitted**

5. Jeremy D. Schmit and Alex J. Levine *Intermolecular adhesion in semiconducting polymers*, Submitted to Physical Review E. (2009).
6. Chiao-Yu Tseng, Andrew Wang, Giovanni Zocchi, Biljana Rolih, and Alex J. Levine, *The elastic energy of protein-DNA chimeras*, Submitted to Physical Review Letters (2009).
7. J.R. Rothenbuhler, J.-R. Huang, B.A. DiDonna, A.J. Levine and T.G. Mason, *Diffusion-limited aggregation of colloidal rods and disks*, Submitted to Soft Materials (2009).
8. David Schwab, Robijn F. Bruinsma, and Alex J. Levine, *Rhythmogenic Neuronal Networks and k-Core Percolation*, Submitted to Physical Review Letters (2008).
9. Biswaroop Mukherjee and Alex J. Levine, *The effect of colored noise on stochastic resonance*, Submitted to American Journal of Physics (2008).
10. YongKeun Park, Catherine Best-Popescu, Kamran Badizadegan, Ramachandra R. Dasari, Michael S. Feld, Tatiana Kuriabova, Mark L. Henle, Alex J. Levine, and Gabriel Popescu, *Measurement of red blood cell mechanics during morphological changes*, Submitted to the Proceedings of the National Academy of Sciences USA (2008).

## Published

11. Mark L. Henle and Alex J. Levine, *Effective Viscosity of a Dilute Suspension of Membrane-bound Inclusions*, Physics of Fluids **21**, 033106 (2009).
12. Alex J. Levine and F.C. MacKintosh, *The Mechanics and Fluctuation Spectrum of Active Gels*, Journal of Physical Chemistry B **113**, 3820-3830 (2009). P.-G. de Gennes memorial issue.
13. Robert Brewster, Gary S. Grest, and Alex J. Levine *Effects of cohesion on the surface angle and velocity profiles of granular material in a rotating drum*, Physical Review E **79**, 011305 (2009).
14. Mark L. Henle, R. McGorty, A.B. Schofield, A.D. Dinsmore, and A.J. Levine *The effect of curvature and topology on membrane hydrodynamics*, Europhysics Letters **84**, 48001 (2008).
15. Moumita Das, Alex J. Levine, and F.C. MacKintosh, *Buckling and force propagation along intracellular microtubules*, Europhysics Letters **84**, 18003 (2008).
16. Robert Brewster, Leonardo Silbert, Gary S. Grest, and Alex J. Levine *Relationship between interparticle contact lifetimes and rheology in gravity-driven granular flows*, Physical Review E **77**, 061302 (2008).
17. Jeremy D. Schmit and Alex J. Levine *Statistical model for Intermolecular Adhesion in  $\pi$ -conjugated polymers*, Physical Review Letters **100**, 198303 (2008).
18. Tatiana Kuribova and Alex J. Levine, *Nanorheology of viscoelastic shells: Applications to viral capsids*, Physical Review E **77**, 031921 (2008).
19. Robert Walder, Alex J. Levine, and Michael Dennin, *Rheology of two-dimensional F-actin networks associated with a lipid interface*, Physical Review E **77**, 011909 (2008).
20. F. C. MacKintosh and Alex J. Levine, *Non-equilibrium mechanics and dynamics of motor-activated gels*, Physical Review Letters **100**, 018104 (2008).
21. Ali Naji, Alex J. Levine, and P.A. Pincus, *Corrections to the Saffman-Delbrück mobility for membrane bound proteins*, Biophysical Journal: Biophysical Letters **93**, L49-L51 (2007).
22. Leonardo Silbert, Gary S. Grest, Robert Brewster, and Alex J. Levine *Rheology and Contact Lifetimes in Dense Granular Flows*, Physical Review Letters **99**, 068002 (2007).
23. Moumita Das, F.C. MacKintosh, and Alex J. Levine *Effective medium theory of semiflexible filamentous networks*, Physical Review Letters **99**, 038101 (2007).
24. M.L. Henle and Alex J. Levine, *Erratum: Capillary wave dynamics on supported viscoelastic films: Single and double layers*, Physical Review E **75**, 059909(E) (2007).
25. B.A. DiDonna and Alex J. Levine *Unfolding cross-linkers as rheology regulators in F-actin networks*, Physical Review E **75**, 041909 (2007).
26. Mark L. Henle and Alex J. Levine *Capillary wave dynamics on supported viscoelastic films: Single and double layers*, Physical Review E **75**, 021604 (2007).
27. J.R. Savage, D. Blair, A.J. Levine, R.A. Guyer, and A.D. Dinsmore *Imaging the Sublimation Dynamics of Colloidal Crystallites* Science **314**(5800), pp. 795-798 (2006).
28. Buddhapriya Chakrabarti and Alex J. Levine *The nonlinear elasticity of an  $\alpha$ -helical polypeptide: Monte Carlo studies* Physical Review E **74**, 031903 (2006).
29. B.A. DiDonna and Alex J. Levine *Filamin cross-linked semiflexible networks: Fragility under strain* Physical Review Letters **97**, 068104 (2006).

30. M. Atakhorrami, J.I. Sulkowska, K.M. Addas, G.H. Koenderink, J.X. Tang, A.J. Levine, F.C. MacKintosh, and C.F. Schmidt *Correlated fluctuations of microparticles in viscoelastic solutions: Quantitative measurement of material properties by microrheology in the presence of optical traps*, Physical Review E **73**, 061501 (2006).
31. R. Brewster, J. Landry, G.S. Grest, and A.J. Levine *Breakdown of Bagnold scaling in cohesive granular flows*, Physical Review E **72**, 061301 (2005).
32. David A. Head, Alex J. Levine, and F.C. MacKintosh *Mechanical response of semiflexible networks to localized perturbations*. Physical Review E **72**, 061914 (2005).
33. Jeremy D. Schmit and Alex J. Levine *Intermolecular adhesion in conducting polymers* Physical Review E **71**, 051802 (2005).
34. Buddhapriya Chakrabarti and Alex J. Levine *The nonlinear elasticity of an  $\alpha$ -helical polypeptide* Physical Review E **71**, 031905 (2004).
35. Alex J. Levine, David A. Head, and F.C. MacKintosh *The elasticity of semiflexible networks*, Proceedings of the XIV<sup>th</sup> Congress on Rheology. ed. The Korean Society of Rheology (2004).
36. Alex J. Levine, David A. Head, and F.C. MacKintosh *The Deformation Field in Semiflexible Networks*, Journal of Physics, Condensed Matter **16**, S2079 (2004).
37. Alex J. Levine, T.B. Liverpool, and F.C. MacKintosh *Dynamics of rigid and flexible extended bodies in viscous films and membranes*, Physical Review Letters **93**, 038102 (2004).
38. Alex J. Levine, T.B. Liverpool, and F.C. MacKintosh *The mobility of extended bodies in viscous films and membranes*, Physical Review E **69**, 021503 (2004).
39. David A. Head, Alex J. Levine, and F.C. MacKintosh *Distinct regimes of elastic response and deformation modes of cross-linked cytoskeletal and semiflexible polymer networks*, Physical Review E **68**, 061907 (2003).
40. David A. Head, F.C. MacKintosh, and Alex J. Levine *Non-universality of elastic exponents in random bond-bending networks*. Physical Review E **68**, 025101 (R) (2003).
41. David A. Head, Alex J. Levine, and F.C. MacKintosh *Deformation of cross-linked semiflexible polymer networks*, Physical Review Letters **91**, 108102 (2003).
42. Victor Breedveld and Alex J. Levine *Shear induced diffusion in dilute suspensions of charged colloids*, Soft Materials **1**, 235-244 (2003).
43. D.T. Chen, E.R. Weeks, J.C. Crocker, M.F. Islam, R. Verma, J. Gruber, A.J. Levine, T.C. Lubensky, and A.G. Yodh *Rheological Microscopy: Local Mechanical Properties from Microrheology*, Physical Review Letters **90**, 108301 (2003).

#### Articles Previous to Appointment as Assistant Professor

44. Alex J. Levine and F.C. MacKintosh *Dynamics of viscoelastic membranes*, Physical Review E **66**, 061606 (2002).
45. Deniz Ertas, Thomas C. Halsey, Alex J. Levine, and Thomas G. Mason, *Stability of monomer-dimer piles*, Physical Review E **66**, 051307 (2002).
46. K.M. Addas, J.X. Tang, A.J. Levine, and C.F. Schmidt *Extracting local and bulk viscoelasticity of entangled FD virus solutions by two-bead microrheology*, Biophysical Journal **82** (1) 2432 (2002).
47. Karim M. Addas, Alex J. Levine, Jay X. Tang, and Christoph F. Schmidt *One- and Two-Particle Microrheology in Entangled Solutions of fd Virus*, Physical Characterization of Biological Materials and Systems Symposium. Boston, MA USA 26 Nov. – 30 Nov. 2001. Warrendale, PA, USA Materials Research Society, (2002).

48. Alex J. Levine and T.C. Lubensky *Two-point microrheology and the electrostatic analogy*, Physical Review E **65**, 011501 (2001).
49. R. Bruinsma, F. Rondelez, and A. Levine *Flow-Controlled Island Growth in Langmuir Monolayers*, European Physics Journal E **6**, 191 (2001).
50. Alex J. Levine and T.C. Lubensky *The response function of a sphere in a viscoelastic two-fluid medium*, Physical Review E, **63**, 041510-1 (2001).
51. Alex J. Levine and T.C. Lubensky *One- and two-particle microrheology*, Physical Review Letters **85**, 1774 (2000).
52. Randall D. Kamien and Alex J. Levine *Boundary Effects in Chiral Polymer Hexatics*, Physical Review Letters **84**, 3109 (2000).
53. T. G. Mason, A. J. Levine, D. Ertas, and T. C. Halsey *The Critical Angle of Wet Sand Piles*, Physical Review E **60**, R5044 (1999)
54. A. Levine, S. Ramaswamy, E. Frey, and R. Bruinsma “Hydrodynamic Screening in Stokesian Fluidized Beds” in *Structure and Dynamics of Materials in the Mesoscopic Domain* (Prox. 4<sup>th</sup> Royal Society–Unilever Indo-UK Forum in Materials Science and Engineering), Eds. Moti Lal, R.A. Mashelkar, B.D. Kulkarni, V.M. Naik (Imperial College Press and The Royal Society, 1999) pp. 195–206.
55. Amy B. Herhold, Deniz Ertas, Alex J. Levine, and Hubert E. King Jr. *Impurity mediated nucleation in hexadecane-in-water emulsions.*, Physical Review E **59**, 6946 (1999).
56. Amy B. Herhold, Deniz Ertas, Alex J. Levine, and Hubert E. King Jr. *Impurity induced slowing of nucleation in emulsified liquids* in *Dynamics in Small Confining Systems IV* Symposium, Boston, MA USA 30 Nov. – 3 Dec. 1998. Warrendale, PA, USA: Materials Research Society, pp.85–96 (1999).
57. Alex Levine, Sriram Ramaswamy, Erwin Frey, and Robijn Bruinsma, *Screened and Unscreened Phases in Sedimenting Suspensions*, Physical Review Letters **80**, 5944 (1998).
58. Alex J. Levine and Scott T. Milner, *Star Polymers and the Failure of Time-Temperature Superposition*, Macromolecules **31** (24) 8623 – 8637 (1998).
59. Alex J. Levine and Thomas C. Halsey, *How Sandcastles Fall*, Physical Review Letters **80**, 3141 (1998)
60. Martin-D. Lacasse, Gary S. Grest, and Alex J. Levine, *Capillary-wave and chain-length effects at polymer/polymer interfaces*, Physical Review Letters **80**, 309 (1998).
61. S. N. Coppersmith, T. C. Jones, L. P. Kadanoff, A. Levine, J. P. McCarten, S. R. Nagel, S. C. Venkataramani, and Xinlei Wu, *Self-Organized Short-Term Memories*, Physical Review Letters **78**, 3983 (1997).
62. Shechao Feng, Alex Levine, and Lan Yin, *Suppression of the Josephson Effect and Little-Parks Oscillations in the Quantum Hall Effect*, in *Coulomb and Interference Effects in Small Electronic Structures* ed. D. C Glattli, M. Sanquer, and J. Tran Thanh Van, Éditions Frontières (1994).
63. Shechao Feng, Alex Levine, and Lan Yin, *Suppression of the Josephson Effect by Quantum Fluctuations in the Fractional Quantum Hall State*, Physical Review B. **50**, 11045 (1994).

## Teaching

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- UCLA: Chemistry 223B: Graduate Quantum Mechanics Part B Winter 2009
- UCLA: Chemistry 223B: Graduate Quantum Mechanics Part A Fall 2008
- UCLA: Chemistry 223B: Graduate Statistical Mechanics Part B Winter 2008
- UCLA: Chemistry 223A: Graduate Statistical Mechanics Part A Fall 2007
- UCLA: Chemistry 228: Physical Chemistry Seminar Series Spring 2007

- UCLA: Chemistry 110A: Thermodynamics Winter 2007
- UCLA: Chemistry 110A: Thermodynamics Fall 2006
- UCLA: Chemistry 223B: Graduate Statistical Mechanics Part B, Winter 2006.
- UCLA: Chemistry 223A: Graduate Statistical Mechanics Part A, Fall 2005.
- UMASS: Graduate Biological Physics, Spring 2004.
- UMASS: Freshman Physics Colloquium: “Proteins: Your own Nanomachines,” Fall 2004.
- UMASS: Honors Freshman Mechanics, Spring 2003.
- UMASS: Freshman Mechanics, Spring 2003.
- UMASS: Freshman Physics Colloquium: “Viruses and Self-Assembly,” Fall 2003.
- UMASS: Soft Condensed Matter Physics: Independent Study, Spring 2003.
- UMASS: Graduate Classical Mechanics Fall 2002, Fall 2003, Fall 2004.
- UPENN: Introductory Electricity and Magnetism 06/15/2000 – 08/31/2000 Summer Session.

### *Committee Service*

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#### UCLA Department of Chemistry & Biochemistry

1. Curriculum Committee, Chair: 2008 – Present
2. Theory Search Committee, Chair: 2008 – 2009.
3. Legislative Assembly: 2005 – 2008.

#### University of Massachusetts, Amherst Department of Physics

1. Website Redesign Committee: 2002-2003
2. Gluckstern Professorship in Biological Physics Search Committee: 2003-2005.
3. Departmental Merit Review Committee: 2004-2005.

### *Research Students*

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#### Postdoctoral Researchers

1. Dr. Andrew Missel (2009-Present):  
Ph.D. 2008 University of Illinois, Urbana-Champaign, Supervisor: Karin A. Dahmen.
2. Dr. Mark L. Henle (2005-2008):  
Ph.D. 2005 UCSB, Supervisor: Philip A. Pincus.
3. Dr. Brian A. DiDonna (2006-2007):  
Ph.D. 2001 University of Chicago, Supervisor: Thomas Witten.  
(2001-2004) Postdoctoral Fellow at the University of Pennsylvania, Supervisor: Tom Lubensky.  
(2004-2006) Postdoctoral Fellow at Institute for Mathematics and its Applications, University of Minnesota,  
Supervisor: None.
4. Dr. Moumita Das (2005-2007):  
Ph.D. 2004 Indian Institute of Science, Bangalore 2004. Supervisor: Sriram Ramaswamy  
(2004-2005) Postdoctoral Fellow at Harvard University, Supervisor: L. Mahadevan.
5. Dr. Buddhapriya Chakrabarti (2003-2005):  
Ph.D. Indian Institute of Science, Bangalore 2002. Supervisor: Chandan Dasgupta.  
(2005-2007) Postdoctoral Fellow at Harvard University, Supervisor: David Nelson  
(2007-Present) Postdoctoral Researcher at UCLA, Supervisor: Tom Chou

## Graduate Students

1. (2002-2005) Jeremy Schmit Graduate Student, UCSB Physics  
Current: Postdoctoral researcher at UCSF. Supervisor Ken Dill.
2. (2002-2007) Robert Brewster Graduate Student, UCLA Chemistry  
Current: Postdoctoral researcher at the Weizmann Institute. Supervisor Sam Safran.
3. (2005-Present) Donald Blair Graduate Student, UMASS Physics
4. (2006-Present) Tatiana Kuriabova Graduate Student, UCLA Physics
5. (2007-Present) Rachael Harper Graduate Student, UCLA Chemistry
6. (2007-Present) Bijlana Rolih Graduate Student, UCLA Chemistry

## High School Students

1. (2007) Biswaroop Mukherjee Summer Intern, Harvard Westlake High School

## Grants and Contracts

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- **Active** “Micro- and Nano-mechanics of Active Biopolymer Networks” NSF-ENG [PI Levine]. \$100,000/yr x 3yrs = \$300,000.
- **Active** “Workshop: The Frontiers of Microrheology” Institute for Complex Adaptive Matter (ICAM) (with co-I T.G. Mason) 04/01/2007 – 02/09/2008 \$30,000.
- **Active** “Workshop: The Frontiers of Microrheology” International Institute for Complex Adaptive Matter (I2CAM) (with co-I T.G. Mason) 04/01/2007 – 02/09/2008 \$15,000.
- **Active** “Workshop: The Frontiers of Microrheology” California Nanosystems Institute (CNSI) (with co-I T.G. Mason) 04/01/2007 – 02/09/2008 *approx* \$25,000.
- **2006-2007** “Deformation of an elastic membrane by a semiflexible network: Biomimetic approaches and aerospace applications” 05/01/2006 – 04/30/07. Lockheed Martin PI: Levine, Total: \$75,000
- **2004-2007** “Mechanical Properties of Thin-Film Active Materials,” NSF-INT/DMR-0354113 [co-I with Professor M. Dennin (UCI)] 09/01/2004 – 08/31/2007. Total: \$540,000; for Levine \$300,000.
- **2004-2006** “Gelation of Colloidal Particles on Droplet Surfaces: Dimension, Curvature, and Droplet Elasticity,” NASA-NRA-02-OBPR-03-C [co-I with Professor A.D. Dinsmore (UMASS)] 01/01/2005 – 12/31/2008. Original Award Totals: \$625,000; for Levine \$300,000. Later cut to *approx* \$150,000 for Levine.

## Invited Talks

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1. *Keeping the beat: Rhythmogenesis in excitatory neuronal networks*, University of Ottawa, Department of Neuroscience Seminar. March 2009.
2. *Cell Quakes: Microrheology in active gels and living cells*, University of Ottawa, Department of Physics Colloquium. March 2009.
3. *Cell Quakes: Microrheology in active gels and living cells*, SIAM Conference, August 2008.
4. *Cell Quakes: Microrheology in active gels and living cells*, Department of Physics, University of Illinois at Urbana-Champaign, April 2008.
5. *Cell Quakes: Microrheology in active gels and living cells*, Procter & Gamble Co., Cincinnati, OH April 2008.
6. *Microrheology of active polymer networks*, Annual Meeting of the American Physical Society, New Orleans LA., March 2008.

7. *The mechanics of active polymer networks*, Colloquium at the Department of Physics, University of North Carolina at Chapel Hill. NC., February 2008.
8. *Sailing the surfactant seas: Hydrodynamics in flat and curved membranes*, Workshop on Dynamics in Biological and Soft Matter Systems at Argonne National Laboratory, Argonne IL., February 2008.
9. *The mechanics of active polymer networks*, Ludwig Maximilians-Universität München, Germany, September 2007.
10. *Sailing the surfactant seas: Hydrodynamics in flat and curved membranes*, Seminar at the Department of Physics, Arizona State University, Phoenix, AZ, May 2007.
11. *Sailing the surfactant seas: Hydrodynamics in flat and curved membranes*, Department of Mechanical Engineering, University of California, San Diego, CA, May 2007.
12. *The mechanics of biopolymer networks*, Structural and Solid Mechanics Seminar, Department of Mechanical Engineering, University of California, Los Angeles, CA, April 2007.
13. *Sailing the surfactant seas: Hydrodynamics in flat and curved membranes*, Center for Interdisciplinary Research in Fluid Mechanics, University of California, Santa Barbara, CA, April 2007.
14. *Sailing the surfactant seas: Hydrodynamics of rigid and flexible bodies in membrane and Langmuir monolayers*, Joint Materials/Solid Mechanics Seminar, Brown University, Providence, RI February 2007.
15. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Department of Chemistry, University of Nevada, Reno, NV February 2007.
16. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Department of Physics Colloquium, UC Riverside, CA, October 2006.
17. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Liquid Crystal Institute Colloquium, Kent State University, Kent, OH October 2006.
18. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Department of Chemical Engineering Colloquium, University of Florida, Gainesville September 2006.
19. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Department of Physics Colloquium, University of Colorado, Boulder August 2006.
20. *Sailing the surfactant sea: Hydrodynamics in membranes and fluid/fluid interfaces*, Condensed Matter Seminar Department of Physics, University of Colorado, Boulder August 2006.
21. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Ecole Supérieure de Physique et de Chimie Industrielles, Paris France April 2006.
22. *Sailing the surfactant sea: Hydrodynamics in membranes and fluid/fluid interfaces*, IPAM Workshop I: Membrane Protein Science and Engineering, UCLA, Los Angeles, CA, USA. March 2006.
23. *The worm turns: The statistical mechanics of alpha-helical polypeptides*, Seminar Biomathematics Department, University of California, Los Angeles March 2006.
24. *Microrheology in polymer solutions: Depletion and the shell model*, American Chemical Society, Washington D.C. August 2005.
25. *Sailing the surfactant sea: Hydrodynamics in membranes and fluid/fluid interfaces*, Frontiers in Biomembranes, Benasque, Spain August 2005.
26. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Gordon Conference on Gels, Networks, and Elastomers, New London, NH July 2005.
27. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Seminar, UCLA Chemistry, January 2005.



28. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, Colloquium, Arizona State University, Department of Physics February 2005.
29. *The statistical mechanics of alpha-helical polypeptides*, Beckman Institute, University of Illinois at Urbana-Champaign, October 2004.
30. *The elasticity of semiflexible networks: Implications for the cytoskeleton*, University of Washington, Department of Physics October 2004.
31. *The statistical mechanics of alpha-helical polypeptides*, National Central University, Taiwan August 2004.
32. *Static and flowing wet sand: Dragging Mr. Bagnold through the mud*, Academia Sinica, Taiwan July 2004.
33. *Sailing the surfactant sea: Hydrodynamics in membranes and fluid/fluid interfaces*, Academia Sinica, Taiwan July 2004.
34. *Microrheology*, Academia Sinica, Taiwan July 2004.
35. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks*, National Central University, Taiwan July 2004.
36. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks*, Clarke University Department of Physics April 2004.
37. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* March 2004 Meeting of the American Physical Society, Montreal Canada. March 2004.
38. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* February 2004 UCLA Department of Chemistry, Los Angeles, CA.
39. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* February 2004 Theory Division, Los Alamos National Laboratories, Los Alamos, NM.
40. *The worm turns: The helix-coil transition on the worm-like chain* January 2004 The Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge England.
41. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Department of Chemistry Seminar, Florida State University. November 21, 2003.
42. *Sailing the Surfactant Sea: Membrane Hydrodynamics and Interfacial Microrheology* Department of Physics Colloquium, Brandeis University. November 18, 2003.
43. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Physics Department Seminar, Brown University. November 5, 2003.
44. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* New England Statistical Physics Meeting, Brandeis University. October 25, 2003.
45. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Physics Department Seminar, Harvard University. October 21, 2003.
46. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* New England Complex Fluids Workshop, Brandeis University. September 17, 2003.
47. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* ASTATPHYS-MEX-2003, Puerto Vallarta, Mexico. August 27, 2003.
48. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Lans en Vercors, Biophysics Jam Sessions. August 7, 2003.
49. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Sandia National Laboratories Seminar. July 17, 2003.

50. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Materials Research Laboratory, UCSB. July 2, 2003.
51. *Affine vs. Nonaffine Deformations in Semiflexible Polymer Networks* Associative Networks Meeting at Polymer Science, University of Massachusetts, Amherst sponsored by NSF-MRSEC. May 14, 2003.
52. *Fluctuation Effects in Biology* Electrical Engineering Department Seminar, University of Massachusetts, Amherst April 18, 2003.
53. *Affine vs. Nonaffine Deformation in Semiflexible Networks* MIT Applied Math Seminar, April 15, 2003.
54. *The worm turns: The helix-coil worm-like chain as a model  $\alpha$ -helix* Cal Tech Division of Applied Physics January 31, 2003.
55. *The worm turns: The helix-coil worm-like chain as a model  $\alpha$ -helix* Complex Systems Seminar, Vrije Universiteit Amsterdam November 5, 2002.
56. *Microrheology in two and three dimensions*, Colloquium at the Jožef Stefan Institute, Ljubljana, Slovenia. December 2001.
57. *Microrheology in two and three dimensions*, Colloquium at Technion, Israel Institute of Technology, Haifa, Israel. November 2001.
58. *Microrheology in two and three dimensions*, Seminar at The Weizmann Institute of Science, Rehovot, Israel. November 2001.
59. *Microrheology in two and three dimensions*, UCLA Physics Department Condensed Matter Journal Club, Los Angeles, CA, USA. October 2001.
60. *What is Being Measured in Microrheology Experiments?*, Colloquium at Indiana University Physics Department, Bloomington, IN, USA. September 2001.
61. *What is Being Measured in Microrheology Experiments?*, Condensed Matter Seminar at University of California at Irvine, Irvine, CA, USA. June 2001.
62. *What is Being Measured in Microrheology Experiments?*, Theoretical Condensed Matter Seminar, Cambridge University, Cambridge, UK. April 2001.
63. *What is Being Measured in Microrheology Experiments?*, Dutch Royal Society, Amsterdam, NL. April 2001.
64. *What is Being Measured in Microrheology Experiments?*, Symposium on Soft Matter as a Nonlinear Science sponsored by CCCNS, CNLS, and UCI, Laguna Beach, CA. February 2001.
65. *What is Being Measured in Microrheology Experiments?*, LRSM Symposium on “The Interface on Between Biology & Materials Science”, The University of Pennsylvania, PA, USA. November 2000,
66. *What is Being Measured in Microrheology Experiments?*, Virginia Tech University, Blacksburg, VA. October 2000.
67. *What is Being Measured in Microrheology Experiments?*, Polymer Science Forum Seminar, ExxonMobil Research & Engineering Co. July 2000,
68. *What is Being Measured in Microrheology Experiments?*, Seminar at Yale University, Department of Mechanical Engineering, New Haven, CT. June 2000.
69. *What is Being Measured in Microrheology Experiments?*, Complex Fluids Seminar at Princeton University, Princeton, NJ. May 2000.
70. *What is Being Measured in Microrheology Experiments?*, Condensed Matter Seminar at Brown University, Providence, RI. April 2000.

71. *Screened and Unscreened Phases in Sedimenting Suspensions*, Physics Department Colloquium at Georgetown University, Washington DC. March 2000.
72. *Sedimentation: Physics Far from Equilibrium*, Physics Department Colloquium at the University of Western Ontario, London, Ontario, Canada. February 2000.
73. *Sedimentation: Physics Far from Equilibrium*, Physics Department Colloquium at the University of Missouri, Rolla, MO. February 2000.
74. *Screened and Unscreened Phases in Sedimenting Suspensions*, Meeting of the American Physical Society, Atlanta GA. March 1999.
75. *Screened and Unscreened Phases in Sedimenting Suspensions*, Institut für Theoretische Physik, Physik-Department der Technischen Universität München, D-85747 Garching, Germany. May 1997.
76. *Screened and Unscreened Phases in Sedimenting Suspensions*, Gordon Conference in Il Cicco Italy. May 1997.
77. *Theory of Fluctuation-Enhancement in Sedimenting Colloids*, Meeting of the American Physical Society, St. Louis, MO. March 1996.

### **Contributed Talks**

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- Nematic Elastomers and the Red Blood Cell*, Meeting of the American Physical Society, Seattle, WA. March 2001.
- What is Being Measured in Microrheology Experiments?*, Meeting of the American Physical Society, Minneapolis, MN. March 2000.
- Boundary Effects in Chiral Polymer Hexatics*, Meeting of the American Physical Society, Minneapolis, MN. March 2000.
- How Sand Castles Fall: The Stability of Cohesive Sandpiles*, Meeting of the American Physical Society, Los Angeles, CA. March 1998.
- Star Polymers and the Failure of Time-Temperature Superposition*, Meeting of the American Physical Society, Los Angeles, CA. March 1998.
- Screened and Unscreened Phases in Sedimenting Suspensions*, Meeting of the American Physical Society, Los Angeles, CA. March 1998.
- Bubble Flow Instabilities*, Meeting of the American Physical Society, Kansas City, MO. March 1997.
- Non-Equilibrium Fluctuations in Sedimenting Suspensions: A Dynamical Renormalization Group Theory*, Meeting of the American Physical Society, Kansas City, MO. March 1997.
- Sedimentation and the KPZ Equation*, Meeting of the American Physical Society, San Jose, CA. March 1995.
- Sedimentation and the KPZ Equation with Colored Noise*, Informal Theory Seminar at AT&T Bell Laboratories, September 1995.

### **Meetings Organized**

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- Workshop Organizer for “Frontiers of Microrheology” to be held at UCLA February 6 to February 9, 2008.
- Session Organizer for “Gordon Conference on Theoretical Biology and Biomathematics” June 2006.
- Program Organizer for the 19<sup>th</sup> New England Complex Fluids Workshop held at the University of Massachusetts, Amherst on 28, June 2004. co-Organizers: Maria Santore (Polymer Science) and Anthony Dinsmore.
- Technical Program Organizer for “Local probes of rheology and structure” at the 73<sup>rd</sup> Annual Meeting of the Society of Rheology. Co-Organizer: Thomas Mason.

### **Other Professional Activities**

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## Activities and Memberships in Professional Societies

- (April 2007 – **Present**) UCLA Representative on the Science Steering Committee (SSC) of the Institute for Complex Adaptive Matter (ICAM)
- (May 2004) Invited Participant for the Workshop on the Role of Theory in Biological Physics sponsored by the National Science Foundation (NSF).
- Member of the American Physical Society
- Member of the American Chemical Society
- Member of the Materials Research Society
- Member of the Society of Rheology

## Session Chair at Conferences or Symposia

- Session Chair, The XVth International Congress on Rheology August 2008, Monterrey, California (USA).
- Session Chair American Physical Society March Meeting 2007, Denver, CO. DFD: Monolayers, Membranes & Microemulsions
- Session Chair for “Gordon Conference on Theoretical Biology and Biomathematics” June 2006.
- Session Chair, The XIVth International Congress on Rheology August 2004, Seoul, Korea.
- Session Chair American Physical Society March Meeting 2000, Minneapolis, MN. DCMP: Colloids IV: Suspensions, Foams, and Sedimentation

## Reviewer for Peer-reviewed Journals:

- Biophysical Journal
- European Journal of Physics
- Europhysics Letters
- Journal of Chemical Physics
- Journal of Fluid Mechanics
- Journal of Optics A: Pure and Applied Optics
- Journal of Physics A: Mathematical and Theoretical
- Journal of Theoretical Biology
- Physical Review E
- Review of editors for Physical Review E
- Physical Review Letters
- Macromolecules
- Nature Physics
- Rheologica Acta

## Reviewer for Funding Agencies:

- Euryi International Awards 2006
- National Science Foundation
- Petroleum Research Foundation
- US Israel Binational Science Foundation

## References

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**Professor Tom C. Lubensky**  
Department of Physics and Astronomy,  
University of Pennsylvania  
209 South 33<sup>rd</sup> St.  
Philadelphia, PA 19104

Mary Amanda Wood Professor of Physics  
phone: (215) 898-7002  
fax: (215) 898-2010  
e-mail: tom@dept.physics.upenn.edu

**Professor Philip A. Pincus**  
Department of Physics and Materials Research Laboratory,  
University of California, Santa Barbara  
Santa Barbara, CA 93106

Professor  
phone: (805) 893-4685  
fax: (215) 893-8797  
e-mail: fyl@mrl.ucsb.edu

**Professor Fred C. MacKintosh**  
Division of Physics & Astronomy  
Vrije Universiteit  
De Boelelaan 1081  
Amsterdam, NL – 1081 HV  
The Netherlands

Professor of Theoretical Soft Matter and Complex Systems  
phone: +31 20 444-7857  
fax: +31 20 444-7992  
e-mail: fcm@nat.vu.nl

**Professor Michael Thorpe**  
Department of Physics & Astronomy and  
Department of Chemistry & Biochemistry  
Bateman Physical Sciences PSF 359  
Arizona State University  
Tempe, AZ 85287-1504

Foundation Professor  
phone: (480) 965-3085  
fax: (775) 599-7188  
e-mail: mft@asu.edu

**Professor Ken A. Dill**  
Department of Pharmaceutical Chemistry  
University of California, San Francisco  
600 16<sup>th</sup> Street  
San Francisco, CA 94143-2240

Professor of Biophysics & Associate Dean of Research  
phone: (415) 476-9964  
phone: (415) 502-4222  
e-mail: dill@maxwell.ucsf.edu

**Dr. Gary S. Grest**  
Sandia National Laboratories  
PO Box 5800  
Albuquerque, NM 87123-1411

Senior Staff Physicist  
phone: (505) 844-3261  
fax: (505) 844-9781  
e-mail: gsgrest@sandia.gov

**Professor Michael Rubinstein**  
Department of Chemistry  
Campus Box 3290  
Venable and Kenan Laboratories  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-3290

J. Ross MacDonald Professor of Chemistry  
phone: (919) 962-3544  
fax: (919) 962-9312  
e-mail: mr@unc.edu

**Professor David A. Weitz**  
Department of Physics  
Harvard University  
29 Oxford Street  
Cambridge, MA 02138

Gordon McKay Professor of Applied Physics & Professor of Physics  
phone: (617) 496-2842  
e-mail: weitz@deas.harvard.edu

**Professor David G. Grier**

Professor

Department of Physics & Center for Soft Matter Research  
New York University  
4 Washington Place  
New York, NY 10003

phone: (212) 998-3713  
fax: (212) 995-4016  
e-mail: david.grier@nyu.edu

**Professor Leslie Wilson**

Department of Molecular, Cellular,  
& Developmental Biology  
The University of California at Santa Barbara  
Santa Barbara, CA 93106

Professor  
phone: (805) 893-2819  
fax: (805) 893-8044  
e-mail: wilson@lifesci.ucsb.edu

**Dr. Scott T. Milner**

Corporate Research Science Laboratories  
Exxon Research and Engineering Company  
Route 22E  
Annandale, NJ 08801

Staff Physicist  
phone: (908) 730-2309  
fax: (908) 730-2536  
e-mail: stmilne@erenj.com

**Professor Robijn Bruinsma**

Department of Physics & Astronomy  
University of California at Los Angeles  
405 Hilgard Ave.  
Los Angeles, CA 90095

Professor  
phone: (310) 825-8539  
fax: (310) 206-5668  
e-mail: bruinsma@physics.ucla.edu

**Professor Sriram Ramaswamy**

Department of Physics,  
Indian Institute of Science,  
Bangalore 560 012  
India

Professor  
phone: +91 80 334 2581  
fax: +91 80 334 1683  
e-mail: sriram@physics.iisc.ernet.in

**Professor Randall D. Kamien**

Department of Physics and Astronomy,  
University of Pennsylvania  
209 South 33<sup>rd</sup> St.  
Philadelphia, PA 19104

William Smith Term Professor of Physics and Astronomy  
phone: (215) 898-5940  
fax: (215) 898-2010  
e-mail: kamien@dept.physics.upenn.edu

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