

SHARON C. GLOTZER

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US Citizen

EDUCATION

Ph.D., 1993, Boston University, in Physics. Advisor: H. Eugene Stanley (NAS).
M.A., 1990, Boston University, in Physics. Advisor: H. Eugene Stanley.
B.S. cum laude, 1987, University of California, Los Angeles, in Physics.

PROFESSIONAL EXPERIENCE

- Stuart W. Churchill Collegiate Professor of Chemical Engineering, University of Michigan, Ann Arbor, MI, beginning October 1, 2009.
 - Professor, Department of Materials Science and Engineering, 2005 - present. (25% appointment)
 - Professor, Department of Physics, 2005 - present. (0% appointment)
 - Director, Office of Research Computing, College of Engineering, beginning September 1, 2009. (25% appointment)
 - Additional affiliations:
 - Macromolecular Science and Engineering, 2005 - present. (0% appointment)
 - Applied Physics Program, 2006 - present. (0% appointment)
 - Associate Faculty, UM Center for the Study of Complex Systems
 - Senior faculty, UM Institute for Theoretical Physics
 - Faculty, UM Institute for Complex Adaptive Matter
 - Faculty, Center for Computational Medicine and Biology
 - Faculty, Michigan Nanotechnology Institute for Medicine and Biology
 - Sabbatical affiliations for September 2008 – May 2009:
 - Faculty Fellow, National Center for Supercomputing Applications, Champaign, IL and Director, Virtual School of Computational Science & Engineering, Great Lakes Consortium for Petascale Computation and Blue Waters
 - Visiting Professor, Université du Luxembourg, Faculté des Sciences de la Technologie et de la Communication, Campus Kirchberg, Luxembourg
- Co-founding Director, Virtual School of Computational Science and Engineering, Great Lakes Consortium for Petascale Computation (A consortium of NCSA and the Big 10+), 2008 – present.
- Professor (with tenure), Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, September 2005 – October 2009. Also Professor of Materials Science and Engineering (25%),

and Physics (0%), with additional affiliations in Macromolecular Science and Engineering, and Applied Physics.

- Associate Professor (with tenure), Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, January 2001 – August 2005. Associate Professor, Department of Materials Science and Engineering, January 2001 – August 2005; Macromolecular Science and Engineering, 2001 – August 2005; Department of Physics, 2002 – August 2005.
- Director, Center for Theoretical and Computational Materials Science (CTCMS), Materials Science and Engineering Laboratory (MSEL), National Institute of Standards and Technology (NIST), February 1997–December 2000. Deputy Director, January 1995–February 1997. Acting Deputy Director, August 1994–January 1995. Co-founded CTCMS, August 1994.
- Physicist, Polymers Division, MSEL, NIST, Gaithersburg, MD, January 1995 – December 2000.
- Adjunct Professor, Institute for Physical Science and Technology (IPST), University of Maryland College Park, MD, 1999 – 2000. PhD Advisor, Chemical Physics Program, 1995 – 2004.
- National Research Council Postdoctoral Research Associate, Polymers Division, Materials Science and Engineering Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, January 1993 - January 1995. Supervisor: E.A. DiMarzio.
- Member of Technical Staff, TRW Space and Technology Group, Redondo Beach, CA, 1986-1987.

HONORS, AWARDS, AND DISTINCTIONS

- Elected Co-Chair, Gordon Conference on Supramolecular Assembly, 2013.
- National Security Science and Engineering Faculty Fellow, Department of Defense, 2009-2014. Provides \$4.3M for unclassified, basic research by the PI over five years.
- Charles M.A. Stine Award, American Institute of Chemical Engineers, Materials Engineering & Sciences Division, 2008. Citation: *“For her pioneering simulations of glass-forming liquids and self-assembled nanomaterials, and for her leadership and service to the materials community.”*
- Jerome B. Cohen Memorial Lecturer, Northwestern University Department of Materials Science & Engineering, November 2007.
- Horace H. Rackham School of Graduate Studies 2006-2007 Faculty Recognition Award, University of Michigan.
- Bernard T. Bertman Memorial Lecturer, Wesleyan University Department of Physics, May 3, 2007.
- Fellow, American Physical Society, 2006. Citation: *“For her pioneering simulations of glass-forming liquids, self-assembled nanomaterials and complex fluids, and for her leadership and service to the computational science community.”*
- Monroe-Brown Foundation Research Excellence Award, University of Michigan College of Engineering, 2006.
- Invited lecturer and session chair, National Academy of Science Frontiers of Science Symposium, Irvine, CA, November 2004.
- Allan P. Colburn Memorial Lecturer, Department of Chemical Engineering, University of Delaware, 2004.
- W.F. James Chair of Pure and Applied Sciences, St. Francis Xavier University, Nova Scotia, Canada, 2004-2006.

- Departmental Award for Outstanding Accomplishment, Department of Chemical Engineering, University of Michigan, 2004.
- Jury member, 9th, 10th, 11th and 12th Annual Heinz Award for Technology, the Economy and Employment, 2002 - 2006.
- Sigma Xi Distinguished Lecturer, 2001-2003.
- American Physical Society Maria Goeppert-Mayer Award, 2000. Citation: *“For her ingenious use of computational physics to probe a wide range of novel materials under different conditions, and for demonstrating the existence and nature of spatially-correlated dynamic heterogeneities in glass-forming liquids.”*
- Presidential Early Career Award for Scientists and Engineers (PECASE), 1998. Citation: *“For broad contributions to the theory of complex materials, and for co-founding the NIST Center for Theoretical and Computational Materials Science.”*
- Invited lecturer, National Academy of Engineering Frontiers of Engineering Symposium, Irvine, CA, September 1998.
- Department of Commerce Bronze Medal Award for Superior Federal Service, December 1997. Citation: *“For major contributions to the creation of the MSEL Center for Theoretical and Computational Materials Science.”*
- Senior Visiting Fellowship Award, Centre for Chemical Physics, University of Western Ontario, Canada, May 1996, for *“research related to pattern formation in complex fluids, and frustration in glass-forming systems.”*
- National Research Council Postdoctoral Fellowship, 1993-1995.
- TRW Space and Technology Group Graduate School Fellowship Award, 1987-1992.
- Article voted *“One of AJP's Most Memorable Papers,”* American Journal of Physics, March, 1991.
- Boston University Graduate School Award for Excellence in Teaching, 1988.
- TRW Scholarship Award, 1986.

GLOTZER GROUP HONORS AND AWARDS AT PROFESSIONAL SOCIETY MEETINGS

- First place, Materials Research Society Fall Meeting Poster Session, December 4, 2003, Boston, MA. X. Zhang, E.R. Chan, J. Zhou, F. Qi, L. Ho, M.H. Lamm, M. Durandu, M. Neurock, J. Kieffer and S.C. Glotzer, *Self Assembly of Tethered Silsesquioxane "Nanocubes" into Nanostructured Materials: A Molecular Simulation Study*, Poster L11.37.
- Second place, Materials Science and Engineering Division Poster Session, AIChE Fall 2003, San Francisco, CA. Z.L. Zhang, M.A. Horsch, M.H. Lamm, S. Shah, and S.C. Glotzer, *Self-Assembly of Tethered Nano Building Blocks*, Poster 369ac.
- Third place, Materials Science and Engineering Division Poster Session, AIChE Fall 2002, Indianapolis, IN. M. Horsch, T. Chen, M.H. Lamm and S.C. Glotzer, *Simulations of DNA-Directed Nanoparticle Assembly*, Poster 188q.
- Finalist, Materials Research Society Science as Art Competition, C.R. Iacovella and S.C. Glotzer, 2005.

GLOTZER GROUP FEATURED RESEARCH

- Cover picture, *Fractals in Science*, A. Bunde and S. Havlin, Eds. (Springer-Verlag, New York, 1994).

- Cover picture, J. Comp. Mat. Sci. 4(3), September 1995.
- Cover picture, J. Comp. Mat. Sci. 4(4), November 1995.
- Cover picture, J. Comp. Mat. Sci. 5(4), April 1996.
- Cover picture, J. Comp. Mat. Sci. 6(3), October 1996.
- Cover picture, Mathematical Seminar Japan, 11, 1997.
- News and Views, "Statistical Physics -- Glasses Go Critical", Nature 399, 207 (1999), by P. Ball on article by Benneman, et al.
- Science News, "In glass, fast crowds boogie to brittle end," January 29, 2000, Vol. 157, p. 71, by P. Weiss.
- Figure, "Mighty Molecules", NY Times, Outlook Section, "In the World of the Very Small, Companies Make Big Plans", December 15, 2002.
- Cover article, Nano Letters, August 2003.
- News highlight of Zhang, et al, NANO LETT 3 (10): 1341-1346 OCT 2003:
 - Technology Research News, November 19/26, 2003, *Model Leverages Nano Tethers*. http://www.trnmag.com/Stories/2003/111903/Model_leverages_nano_tethers_Brief_111903.html
 - Technology Review, November 17, 2003, *Model Leverages Nano Tethers*. <http://www.technologyreview.com/>
 - Michigan Small Tech, November 24, 2003, *U-M Researchers Achieve Self-Assembly Breakthrough in Computer Simulations*. <http://michigansmalltech.com>
 - Press release published on over a dozen online sites.
- News highlights of Zhang and Glotzer, NANO LETT 4(8), 1407-1413, AUG 2004:
 - Research highlights: "From patchy particles to entangled photons," Nature Materials, Vol 3(9), 2004.
 - Nature Materials Update: Nanozone News, "Patching Together Nanomaterials," by Philip Ball, Aug 12, 2004.
 - Financial Times of London, Technology Worth Watching Column, by Louisa Hearn, Aug 16, 2004.
 - R&D, News and Developments/Software, "Zeroing in on sticky patches," Editorial, September 2004 issue. www.rdmag.com
 - Technology Research News Magazine, "Design rules build on self-assembly," October 6, 2004 issue, www.trnmag.com.
 - EETimes, Technology Review, MichiganSmallTech, and many other online sites.
- News highlights of Tang et al, Science 314, 274-278 (2006):
 - Yahoo! News UK 10/13/2006: Nanosheets made by mimicking protein formation
 - Nature Materials Nanozone 10/19/2006: Sheets that make themselves
 - NewScientist 10/13/2006: Nanosheets made by mimicking protein formation
 - Chemical & Engineering News 10/16/2006: Nanoparticle Sheets Form Spontaneously
 - Nanotechweb 10/18/2006: CdTe nanoparticles self-organize in solution
 - Nanotechwire 10/14/2006: How to direct and control the self-assembly of nanoparticles is a fundamental question in nanotechnology
 - Azonano 10/17/2006: Self-assembly of CdTe Nanocrystals into Free-Floating Sheets
 - EurekAlert 10/12/2006: Researchers make nanosheets that mimic protein formation

- UofM News Service 10/12/2006: Researchers make nanosheets that mimic protein formation
- News highlights of Chen et al, PNAS **104**(3) 717-722 (2007).
 - UofM News Service 01/11/2007: Scientists discover rules for some common virus shapes. <http://www.ns.umich.edu/htdocs/releases/print.php?htdocs/releases/plainstory.php?id=3098&html=>
 - The University Record http://www.umich.edu/~urecord/0607/Jan15_07/26.shtml
- News and Views, "Jamming: A new kind of phase transition?" Nature Physics **3**, 222-223 (2007) by G. Biroli on article in Nature Physics by Keys, et al.
- News highlights of A.S. Keys and S.C. Glotzer, "How do Quasicrystals Grow?" Phys. Rev. Letts. **99**, 235503, 2007.
 - Research Highlights, Nature, **451**, 110-111, 2008.
 - P.J. Steinhardt, "*How does your quasicrystal grow?*" News and Views section of Nature, **452**, 43-44 (8 March 2008).
 - News briefs on many online sites, including Science Daily and Eureka Alert.
- "DoD Launches 'Genius' Awards," Physics Today, February 2009. Article on NSSEFF Awards.

EDITORIAL ADVISORY BOARDS

- Nanoscale (An RSC Journal), 2009 – present. Inaugural member of Editorial Board for new journal.
- AIChE Journal, 2005 – present. Consulting editor.
- Computers in Science and Engineering, 2002 – present.
- Topics in Chemical Engineering, Oxford University Press, 2002 – present.
- Nanotechnology, 2005 – 2006.
- PhysChemComm, 1998 – 2003.

EXTERNAL ADVISORY BOARDS

- Member, Supervisory Board of Marie Curie Initial Training of Researchers Network (ITN) on "Physics of Complex Colloids: Equilibrium and Driven" (COMPLOIDS).
- NSF Network for Computational Nanotechnology, External Advisory Board, 2007 – present.
- University of Pennsylvania MRSEC External Advisory Committee, 2007 - 2008.
- NSF Science and Technology Center for Advanced Liquid Crystal Optical Materials (ALCOM) External Advisory Board, 1995-2002.

SELECTED NATIONAL AND INTERNATIONAL SERVICE ACTIVITIES

SERVICE TO NATIONAL ACADEMIES AND NATIONAL RESEARCH COUNCIL

➤ Standing Committees

- Technology Insight: Gauge, Evaluate, and Review (TIGER) Standing Committee for Defense Intelligence, Air Force Studies Board, 2005-present. Member of executive committee.
- Solid State Sciences Committee, Board on Physics and Astronomy, 2004-2007.

➤ Study Committees

- Modeling, Simulation and Games NRC Study Committee, 2008-2009.
- Biomolecular Materials and Processes Study Committee, 2006-2007 and co-author of final report.
- Defense Intelligence Agency (DIA) Threat Analysis NRC Study Committee, 2004-2005 and co-author of final report.
- Reviewer
 - National Academies Report on Integrated Computational Materials Engineering, National Materials Advisory Board, 2008.
 - National Academies Report on Nanophotonics Accessibility and Applicability, sponsored by Defense Intelligence Agency, National Academies' TIGER standing committee, 2007.
 - National Academies Report on Information and Communications: Challenges for the Chemical Sciences in the 21st Century, Board on Chemical Sciences and Technology, 2003.
- **SERVICE TO FEDERAL AGENCIES**
 - Member, National Science Foundation Mathematical and Physical Sciences Directorate Advisory Council, 2009 – 2012.
 - Chair, WTEC International Assessment of Simulation-Based Engineering and Science, 2007-2008. Sponsored by NSF, DOE, NASA, DoD, NIH, NIST.
 - Co-Chair, Research Directions Workshop on Simulation-Based Engineering and Science, 2009. Sponsored by NSF, DOE, NASA, DoD, NIH, NIST.
 - Member of Visiting Committee, Office of Advanced Scientific Computing Research, Office of Science, US Department of Energy, 2004.
 - Member, Scientific Review Committee, Center for Nanoscale Materials Science, Oakridge National Lab, 2003-2006.
 - Invited participant and/or speaker in federal agency roadmapping and strategic planning workshops and projects, and contributor to follow-up reports:
 - Panelist, A Computation-based Engineering Summit: Transforming Engineering Through Computational Simulation, National Academies, September 16-17, 2008. Sponsored by Sandia National Labs, National Academy of Engineering, and NSF.
 - Member, Steering Committee, NSF Workshop on Complexity, Sept. 23-24, 2008 and co-author of final report. Identifying strategic directions in complexity research.
 - NSF Workshop on New Directions in Polymer Science, August, 2007. Participated in theory, modeling and simulation breakout session and contributed to final report.
 - Member, Workshop Planning Committee, Department of Energy Workshop on Basic Research Needs for Energy Storage, April 2007, Bethesda, MD. Planning for new agency initiative.
 - National Science Foundation Workshop on Cyberinfrastructure for Materials Research, August 4-6, 2006. Planning for new funding program in cyberinfrastructure research for materials science.

- Department of Energy Workshop on Basic Research Needs for Solar Energy Utilization, April 19-21, 2005, Bethesda, MD. Panelist: Crosscutting themes. Planning for new agency initiative.
 - Member, Steering Committee, NSF Chemistry Division Cyber-Enabled Chemistry Workshop, Oct. 4-5, 2004. Planning for new funding program in cyberinfrastructure research for the chemical sciences.
 - National Science Foundation/European Commission Workshop: *Methods in Computational Materials Science*, April 2004. Planning for joint NSF/EC initiative in collaborative research in computational materials science.
 - *National Nanotechnology Initiative Interagency Grand Challenge Workshop on Instrumentation and Metrology*, National Institute of Standards and Technology, Gaithersburg, MD, January 27-29, 2004.
 - Department of Energy *SCALeS (Scientific Case for Large Scale Computing) Initiative Planning Workshop*, Arlington, VA, June 2003.
 - Department of Energy *Initiative Planning Workshop on Computational Nanoscience*, San Francisco, CA May 10-11, 2002.
 - National Materials Advisory Board Meeting, National Academy of Sciences, Washington, DC, March 27, 2002.
 - Sponsor panel member, NSF/WTEC *International Comparative Study of Applications of Molecular and Materials Modeling*, 1999-2000.
 - Organizer, *Vision 20/20 Materials Technology Roadmap Workshop on Materials Modeling and Prediction*, sponsored by DOE/OIT, Colorado, September 1999.
 - First joint meeting on NSF/EC Collaborations in *Frontiers of Materials Research*, Stuttgart, Germany, 1998.
- **SERVICE TO PROFESSIONAL SOCIETIES**
 - Member, Stine Award Committee, Materials Engineering and Science Division, AIChE, 2009.
 - Chair, George Pake Prize Committee, American Physical Society, 2008. Member, Pake Prize Committee, 2007.
 - Elected Director, Materials Engineering and Sciences Division, American Institute of Chemical Engineers, 2007-2009.
 - Member, Rahman Prize Committee, American Physical Society Division of Computational Physics, 2005 – 2007.
 - Chair, Nanoscale Science and Engineering Forum Awards Committee, AIChE, 2007.
 - Member, AIChE Centennial Committee, 2005-2008.
 - Elected Vice-Chair, Forum on Industrial and Applied Physics, American Physical Society (APS), 2003 (Served as vice-chair, 2004-2005, chair-elect 2005-2006, and chair, 2006-2007).
 - Elected first vice chair, Nanoscale Science and Engineering Forum (NSEF), American Institute of Chemical Engineers (AIChE), 2003 (Served as vice-chair 2003-2004, chair 2004-2005, past-chair 2005-2006).

- Elected Member of Area 1a Executive Committee, American Institute of Chemical Engineers (AIChE), 2000 – 2003. Re-elected for 2003-2006.
- Member of judges panel, Maria Goeppert-Mayer Award, American Physical Society, 2002.
- Member of Publicity Committee, APS Division of Polymer Physics, 2001 – 2002.
- Member of organizing committee to establish new AIChE Forum on Computational Molecular Science and Engineering (CoMSEF), 2000 – 2001.
- Member of Education Committee and judge, Padden Award, APS Division of Polymer Physics, 2000-2001.
- Member of judges panel, vice chair, and chair, American Physical Society Division of Computational Physics Nicholas Metropolis Award, 1998-2001.
- Member of Nominating Committee, American Physical Society Division of Computational Physics, 1999-2000.
- Proposal and manuscript referee for NSF, DOE, PRF, DOD, AFOSR, Physical Review Letters, Physical Review E, Europhysics Letters, PhysChemComm, Macromolecules, J. Polymer Science, J. Physical Chemistry, J. Chemical Physics, European Physics Journal B, J. Computational Physics, J. Physics: Cond. Mat., Physica A, Physics Today, Nano Letters, Biophysics J., Nature Materials, Nature Physics, Nature Nanotechnology, Nature, Science, etc.
- Professional societies: American Institute of Chemical Engineers (AIChE), Materials Research Society (MRS), American Physical Society (APS; Divisions of Polymer Physics; Computational Physics; Condensed Matter Physics; Materials Physics; Forum on Industrial and Applied Physics, and Statistical and Nonlinear Physics Topical Group), American Chemical Society (ACS), and American Association for the Advancement of Science (AAAS).

UNIVERSITY OF MICHIGAN SERVICE AND LEADERSHIP

- Member, College of Engineering Promotion Casebook Committee (J. Millunchick, MSE dept.), F09.
- Member, U-M Search Advisory Committee for Director, Michigan Memorial Phoenix Energy Institute, F07 – present.
- Chair, Research Computing Executive Committee, College of Engineering, F06-F09.
- Co-chair, U-M Cyberinfrastructure Committee, Office of the Vice President for Research and Office of the Vice Provost, F06-W08.
- Elected member, Executive Board, Rackham Graduate School, F06-S09.
- Member, College of Engineering Promotion Casebook Committee (N. Kotov, ChE dept.), F07.
- Member, College of Engineering Reappointment Casebook Committee (P. Woolf, ChE dept.), W07.
- Member, Energy Symposium Planning Committee, W06-W07 and session chair.
- Member, Nanotechnology Search Committee, Department of Materials Science and Engineering and OVPR, W06-W07.
- Member, Executive Board, Michigan Nanotechnology Institute for Medicine and Biological Science, F05-present.
- Member, Executive Committee, Applied Physics Program, W06-F08.
- Member, Steering Committee, U-M Branch of Institute for Complex Adaptive Matter (ICAM), F05-present.

- Member, Planning Committee, Provost's Seminar on Teaching, F05-W06.
- Member, Search Committee, Department of Chemical Engineering, F05-W06.
- Chair, College of Engineering Tenure Casebook Committee (M.L. Falk, MSE Dept.), S05-F05.
- Member, Search Advisory Committee, U-M Vice President for Research, F04-S05.
- Member, Steering Committee, Nanoscale Science and Engineering Initiative, Office of the Vice President of Research, F04- present.
- Leader, CoE Initiative in Nanoscience and Nanotechnology (MRSEC), 2004-2005.
- Member, Advisory Committee, Nanoscale Science and Engineering Initiative, Office of the Vice President of Research, F03-W04.
- Member, Materials Science and Engineering Department Faculty Search Committee, F03-W04.
- Member, Executive Advisory Board, U-M College of Engineering Center for Advanced Computing, W02-W04.
- Member, College of Engineering Strategic Plan steering committee, F02 - W03.
- Member, ChemE Department Casebook Committee (M.J. Solomon), F02.
- Chair, Macromolecular Science and Engineering Symposium Organizing Committee, W02-F02.
- Member, ChemE Departmental Review Committee, W02.
- Elected Member, Dept. of Chemical Engineering Executive Advisory Committee (ChEAC), F01 – W05.
- Chapter Advisor, U-Michigan Chapter of AIChE, F01-W04.
- Member, Graduate Admissions Committee, Department of Chemical Engineering, F01-W05.
- Member, Graduate Committee, Dept. of Materials Science and Engineering, F01-W04.
- Member, Faculty Search Committee, Department of Chemical Engineering, F01-W03.
- Member, CoE Information Technology Working Group, F01-W02.
- Member, prelim, doctoral and/or checkpoint committees for (non-Glotzer Group students): J. Hendrickson (ChemE), T. Solomon (ChemE), S. Holleran (ChemE), M. Kogan (ChemE), W. Li (ChemE), F. Qi (MSE), J. Zhou (MSE), Y. Shi (MSE), A. Mecke (Applied Physics), C-C Hsieh (ChemE), R. Rogers (ChemE), N. Licata (Physics), G. Strycker (Physics), C. Dibble (ChemE), K. Roh (ChemE).

TEACHING EXPERIENCE

Courses taught include Undergraduate Fluid Mechanics ChE 341, Graduate Statistical and Irreversible Thermodynamics ChE 538, and Computational Nanoscience of Soft Matter ChE/MSE 557.

PH. D STUDENTS SUPERVISED (202TOTAL; 15 CURRENT)

1. Naida Lacevic, PhD, Department of Physics, Johns Hopkins University, June 1999 – August 2003. *Theory and simulation of spatially heterogeneous dynamics in liquids and glasses*. **Thesis defended April 3, 2003**. PhD research conducted at NIST and University of Michigan. Present position: Postdoctoral research associate, Lawrence Livermore National Laboratory.
2. Yeshitila Gebremichael, PhD, Chemical Physics Program, University of Maryland, College Park, April 1999 – present. *Spatially heterogeneous dynamics and string-like correlated motion in supercooled liquids and polymers*. **Thesis defended March 11, 2004**. PhD research conducted at

- NIST and University of Michigan. Postdoctoral research associate with G. Voth, Department of Chemistry, University of Utah, 6/04-12/06. Permanent position: Assistant Professor of Biomedical Engineering, Wayne State University.
3. Elaine R. Chan, PhD, Department of Chemical Engineering, U-Michigan, Spring 2001 – Winter 2006. *Multiscale simulation of self-assembly of polyhedral oligomeric silsesquioxane systems*. **Thesis defended January 23, 2006**. Postdoctoral position: National Research Council Postdoctoral Fellowship, National Institute of Standards and Technology, EEEL, Semiconductor Electronics Division.
 4. Ting Chen, PhD, Department of Chemical Engineering, U-Michigan, Fall 2001-Summer 2006. *Computational studies of self-assembly of precise structures and directed assembly: from colloids to viruses*. **Thesis defended August 15, 2006**. Postdoctoral positions: Princeton University (A.Z. Panagiotopoulos) 2006-2008; University of California Berkeley (A. Bell and B. Smit), 2008 – present.
 5. Mark A. Horsch, PhD, Department of Chemical Engineering, U-Michigan, Spring 2001 – Summer 2006. *Molecular simulation of self-assembly of tethered nanorods*. **Thesis defended August 16, 2006**. Postdoctoral position: Sandia National Lab (Center for Integrated Nanotechnologies). Permanent position: Intel Corporation.
 6. Xi (Charles) Zhang, PhD, Department of Materials Science and Engineering, U-Michigan, Fall 2001 – Summer 2006. *Molecular simulation of self-assembled polymer/silsesquioxane systems*. **Thesis defended September 11, 2006**. Permanent position: Microsoft Corporation.
 7. Magnus Bergroth, PhD, Department of Chemical Engineering, U-Michigan, Fall 2001-present. *Structural precursors of spatially heterogeneous dynamics in supercooled liquids*. **Thesis defended September 12, 2006**. Permanent position: Intel Corporation.
 8. Christopher R. Iacovella, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2003-present. *Self-assembly of tethered nanoparticles*. Passed departmental candidacy, September 2005. **Thesis defended March 3, 2009**. Postdoctoral position: Vanderbilt University (P.T. Cummings), 2009 - present.
 9. Stephanie Teich-McGoldrick, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2003-present. *Computational design of nanoparticle and ionic colloidal crystals*. Passed departmental candidacy exam, September 2006. Expected graduation: Fall 2009.
 10. Chetana Singh, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2004-present. *Surfactant self-assembly on nanostructured surfaces*. Passed departmental candidacy exam, September 2006. Expected graduation: Fall 2009.
 11. Aaron S. Keys, PhD candidate, Department of Chemical Engineering, U-Michigan, Summer 2004-present. *Dynamics and thermodynamics of supercooled liquids*. Expected graduation: Fall 2009.
 12. Eric Jankowski, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2005-present. *Algorithms for assessing complexity for colloidal and nanoscale self-assembly*. Passed departmental candidacy exam, September 2007. Expected graduation: Fall 2010.
 13. Trung Duc Nguyen, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2005-present. *Self-assembly of chiral structures from achiral tethered nanoparticles*. Passed departmental candidacy exam, September 2007. Expected graduation: Fall 2010.
 14. Haji Amir Akbar Balu, PhD candidate, Department of Chemical Engineering, U-Michigan, Fall 2005-present. *Phase transitions in systems of hard anisotropic nanoparticles*. Passed departmental candidacy exam, September 2007. Expected graduation: Fall 2010.

15. Carolyn Phillips, PhD Candidate, Department of Applied Physics, U-Michigan, Fall 2007 – present. *Role of heterogeneity in self-assembled tethered and anisotropic nanoparticles*. Passed departmental candidacy exam, Fall 2008. Expected graduation: Fall 2011.
16. Daniel Ortiz, PhD Pre-candidate, Department of Materials Science and Engineering, Fall 2007 – present. *Hierarchical self-assembly of anisotropic nanocolloids*.
17. Rodney Bryan Smith, PhD Pre-candidate, Department of Chemical Engineering, U-Michigan, Fall 2008-present. *Phase transitions in complex crystals*.
18. Ines Pons, PhD Pre-candidate, Department of Chemical Engineering, U-Michigan, Fall 2008 – present. *Simulation-based design of patchy particles for catalysis and molecular recognition*.
19. Antonio Osorio, Pre-candidate, Department of Materials Science & Engineering, U-Michigan, Fall 2008 – present. *Simulation-based design of self-assembled nanodevices*.
20. Pablo Damasceno Sousa, Pre-candidate, Applied Physics Program, U-Michigan, Fall 2009 – present.
21. Jaime Andres Milan, PhD Pre-candidate, Department of Materials Science and Engineering, Fall 2009 – present.
22. Ryan Marsan, PhD Pre-candidate, Department of Materials Science and Engineering, Fall 2009 – present.

MASTERS DEGREE STUDENTS SUPERVISED (2)

23. Tao Feng, Department of Chemical Engineering, U-Michigan, Fall 2002-December 2003. Received Masters degree December 2003.
24. Tony Sheh, Department of Chemical Engineering, U-Michigan, Fall 2006-December 2008.

POSTDOCTORAL STUDENTS & RESEARCH STAFF SUPERVISED (15 TOTAL; 5 CURRENT)

1. Claudio Donati, NIST, August 1996 – June 1998. *Theoretical and computational research on dynamical heterogeneity of glass-forming liquids and polymers*. Research Scientist, Bio-informatics Company, Italy.
2. Paolo Allegrini, NIST, February 1998 – November 1998. *Developing and applying diagnostic theoretical and computation tools for investigating dynamics properties of dense liquids*. Present position: Research Scientist, Institute for Computational Linguistics, University of Pisa, Italy.
3. Thomas B. Schroeder, NIST, February 1998 – August 1998, March 1999 – June 2000. *Theory and simulations of dense liquids, polymers and filled polymers*. Present position: Associate Professor, Dept. of Physics, Roskilde University.
4. Francis W. Starr, NIST Polymers Division, August 1999 – January 2001. *Simulation of filled polymers and relation between local structure and dynamics in glass-forming polymer melts*. Former position: Deputy Director, NIST CTCMS, 2001-2003. Present position: Assistant Professor, Dept. of Physics, Wesleyan University.
5. Nita Parekh, NIST, June 2000 – May 2001. *Object-oriented finite element simulations of mechanical properties of polymer blends*. Present position: Associate Professor, International Institute of Information Technology, Hyderabad, India.
6. Monica Hitchcock Lamm, University of Michigan, April 2001 – July 2003. *Simulations of nanoscale assembly*. Present position: Assistant Professor, Dept. of Chemical Engineering, Iowa State University, 2003 – present.

7. Michael Vogel, University of Michigan, April 2002 – March 2004. *Simulations of supercooled liquids and glasses*. Present position: Assistant Professor, Department of Chemistry, University of Muenster, Germany.
8. Joydeep Mukherjee, University of Michigan, July 2004 – November 2005. *Multiscale simulations of self-assembly for molecular and nanoelectronics*. Present position: Dow Chemical, Midland, TX.
9. Zhenli Zhang, University of Michigan, April 2002 – present. *Development of simulation methods for nanostructured self-assembled materials*. Research Associate, 2005-2007. Permanent position: Semiconductor Industry.
10. Pradip Ghorai, University of Michigan, January 2006 – December 2007. *Molecular simulations of self-assembled monolayers for molecular computing*. Permanent position: Assistant Professor of Chemistry, IIT Kolkata, India.
11. Aaron Santos, University of Michigan, August 2007 – present. *Mesoscale simulations of self-assembly of hierarchical structures*.
12. Hao Jiang, University of Michigan, August 2008 – present. *Simulations of patchy particles for catalysis and molecular recognition*.
13. Michael Engel, University of Michigan, February 2009 - present. *Simulation studies of complex crystals*.
14. Josh Anderson, University of Michigan, June 1, 2009 - present. Research Engineer. *Development of molecular simulation codes for GPUs*.
15. Kevin Kohlstedt, University of Michigan, August 1, 2009 - present. *Design and assembly of colloidal patchy particles*.

UNDERGRADUATE STUDENTS SUPERVISED ON RESEARCH IN GLOTZER GROUP

1. Lucas Booth, University of Michigan Dept. of Chemical Engineering, Spring 2002 – Winter 2003. Currently at Eli Lilly.
2. Chitra G. Laxmanan, University of Michigan Dept. of Chemical Engineering, Marian Sarah Parker Scholar Program, Spring 2002.
3. Scott M. Nunn, University of Michigan Dept. of Chemical Engineering, Spring/Summer 2003.
4. Brian D. Reger, University of Michigan Dept. of Chemical Engineering, Spring/Summer 2003.
5. Suchita Shah, University of Michigan Dept. of Chemical Engineering, Sarah Marion Parker Scholar Program, Spring/Summer 2003.
6. Jonathan K. Snow, University of Michigan Dept. of Chemical Engineering, Spring/Summer 2003.
7. Gary Chia, University of Michigan Dept. of Chemical Engineering, Spring/Summer 2003. Currently graduate student at MIT.
8. Aaron Scott Keyes, University of Michigan Dept. of Chemical Engineering, Winter 2003 – Winter 2004. Currently graduate student at U Michigan.
9. Lin Ho, University of Michigan Dept. of Chemical Engineering, Summer 2003 – Summer 2005. Currently graduate student at UC Irvine.
10. Eric Jankowski, University of Michigan Dept. of Chemical Engineering, Fall 2004 – Summer 2005. Currently graduate student at U Michigan.
11. Thomas Babinec, University of Michigan Dept. of Physics, Fall 2005 – Winter 2007. Currently graduate student at Harvard.

12. Robert Carr, University of Michigan Dept. of Chemical Engineering, Winter and Fall 2006, Winter 2007. Currently graduate student at Berkeley.
13. Sunny Choi, University of Michigan Dept. of Chemical Engineering, Fall 2006-Winter 2007. Currently graduate student at UIUC.

OTHER STUDENTS SUPERVISED

1. Claudio Castellano, visiting student from the University of Naples, Italy, August 1994 – December 1995. Pinning in phase-separating polymer blends.
2. Sean MacIsaac, high school student at Thomas Jefferson high School for Science and Technology, 1996 – 1998. Simulations of granular materials.

SELECTED WORKSHOPS, CONFERENCES, SYMPOSIA AND MEETINGS ORGANIZED

- Director, Virtual School of Computational Science & Engineering Summer School 2009 Session, August 2009. 300 student and postdoc participants at four sites.
- Co-chair, Multi-agency sponsored workshop on *Research Directions in Simulation-based Engineering and Science*, April 22-24, 2009 at the National Academy of Science Building, Washington, DC. Number of participants: O(100).
- Chair, *Foundations of Molecular Modeling and Simulation (FOMMS)*, July 12-16, 2009. Number of participants: 135.
- Co-organizer, *GLCPC Virtual School of Computational Science & Engineering Summer School for Graduate Students on Multicore and GPUs*, NCSA, August 11-15, 2008. Instructors: Wen-mei Hwu (UIUC) and David Kirk (NVIDIA). 49 on-site participants.
- Co-Chair, MRS Fall 2008 Symposium on *Design, Synthesis and Self-Assembly of Patchy Particles*, Boston, MA 2008. With E. Leutjen and F. Sciortino.
- Chair, Multi-agency sponsored Workshop on *International Assessment of Simulation-based Engineering and Science*, National Science Foundation, April 25, 2008. Number of participants: 85
- Chair, Multi-agency sponsored *US Baseline Workshop on Simulation-based Engineering and Science*, National Science Foundation, Nov. 1-2, 2007. Number of participants: 75
- Co-organizer, *ACS Symposium on Colloidal Atoms and Molecules*, with D. Velegol and M.J. Solomon, Winter 2007, Chicago.
- Member of organizing committee, *International Conference on Bioengineering and Nanotechnology*, September 19-21, 2006, Santa Barbara, CA.
- Program chair, Forum on Industrial and Applied Physics, American Physical Society (APS) Annual March Meeting 2005, Los Angeles, CA.
- Member, International Advisory Committee, Symposium on Computer Modeling and Simulation of the Materials Nanoworld, Sicily, Italy, May 2004.
- Program chair, Nanoscale Science and Engineering Topical Conference, American Institute of Chemical Engineers (AIChE) Annual Fall Meeting 2004, Austin, TX. Served as program vice-chair, NSEF Topical Conference, AIChE Fall Annual Meeting, 2003.
- Member of organizing committee, *Foundations of Molecular Modeling and Simulation*, Keystone, CO, July 2003.

- Session chair/organizer for sessions at AIChE Fall meetings 2001, 2002, 2003, including *Theory, Modeling and Simulation at the Nanoscale*, *Amorphous Materials and Metastable Liquids*, and the Nanoscale Science and Engineering Forum plenary sessions in 2002 and 2003.
 - Chair, organizing committee, 26th Annual Macromolecular Science and Engineering Symposium, University of Michigan, October 23, 2002.
 - Member, Nanotechnology Committee, Nanotech 2003, 2004, 2005, 2006 Program Committees.
 - Session co-chair/organizer, *Theory and Simulation of Complex Fluids and Soft Materials*, 76th ACS Symposium on Colloid and Surface Science, Ann Arbor, MI July 2002.
 - Co-organizer, *Horizons in Complex Systems*, Messina, Italy, December 2001.
 - Co-organizer, Symposium on *Computer Modeling of Polymers*, American Chemical Society Annual Meeting, Chicago, IL, August 2001, with S. Kumar, B. Farmer and G. Rutledge.
 - Organizer, *Vision 20/20 Materials Technology Roadmap Workshop on Materials Modeling and Prediction*, sponsored by DOE/OIT, Colorado, September 1999.
 - Co-organizer, Workshop on *Unifying Concepts in Glass Physics*, ICTP, Trieste, Italy, September 1999, with S. Franz and S. Sastry.
 - Co-organizer, CTCMS Workshop on *Hybrid Methods for Materials Modeling*, NIST, May 1999, with F. Alexander, B. Boghosian, and A. Garcia.
 - Organizer and Discussion Leader, Minisymposium on *Theory and Simulation of Glasses and Glass-forming Liquids*, at Symposium in honor of C.A. Angell, Pisa, Italy, October 1998.
 - Co-organizer, CTCMS Workshop on *Simulation Methods for Multiphase Polymers: A Critical Comparison*, NIST, May 1998, with N. Martys.
 - Session Organizer and Chair, *Mesoscale Modeling of Materials*, Conference on Complex Phenomena in Physics, Barbados, W.I., January 1998.
 - Organizer and Chair, *Phase Transitions in Polymers: A Symposium in Honor of E.A. DiMarzio*, NIST, November 6-7, 1997.
 - Co-director, CTCMS Summer School on *Phase Transitions and Pattern Formation in Fluids and Materials for Graduate Students*, July 1, 1996 - August 8, 1996, with S.A. Langer.
 - Organizer and Chair, Workshop on *Glasses and the Glass Transition: Challenges in Materials Theory and Simulation*, Kent Island, MD, February 16-19, 1995.
- Helped organize numerous other workshops at NIST under the auspices of the CTCMS.

SELECTED INVITED TALKS (TOTAL: 196)

GORDON RESEARCH CONFERENCES (9 INVITED TALKS)

1. “*Self-assembly of complex structures from anisotropic building blocks*,” Gordon Research Conference on the Chemistry & Physics of Liquids, August 2009.
2. “*Designing Materials Building Blocks for Self-Assembly Propensity*,” Gordon Research Conference on the Chemistry of Supramolecules & Assemblies, June 2009.
3. “*Relating Building Block Shape and Complexity for Assembly*,” Gordon Research Conference on Physical Virology, Galveston, TX, February 2009.
4. “*Directed Self-Assembly of Nanoscale Building Blocks*,” Gordon Research Conference on Colloids, Macromolecular Solutions and Polyelectrolytes, Ventura, CA, February 2004.

5. "*Funky Dynamics in Liquids and Glasses*," Gordon Research Conference on Ceramics, New Hampshire, August 2002.
6. "*Spatially Heterogeneous Dynamics in Supercooled Liquids: Insights from Simulation*," Gordon Research Conference on Theoretical Chemistry, Colby-Sawyer College, New Hampshire, July 2002.
7. "*Spatially Heterogeneous Dynamics in Supercooled Liquids and Glasses*," Gordon Research Conference on Liquids, Holderness School, NH, August 2001.
8. "*Computational Diagnostics for Nanoscale Dynamical Heterogeneity in Glass-forming Liquids and Polymers*," Gordon Research Conference on Polymer Physics, Connecticut College, July 2000.
9. "*Emergence of Nanoscale Dynamical Heterogeneity in Supercooled Liquids and Polymers*," Gordon Research Conference on Colloids, Macromolecular Solutions and Polyelectrolytes, Ventura, CA, February 2000.

DISCUSSION LEADER AT GORDON RESEARCH CONFERENCES:

- Discussion leader, Liquids Gordon Research Conference, New Hampshire, July 2003.
- Discussion leader, Liquids Gordon Research Conference, New Hampshire, July 1997.

NATIONAL ACADEMY BRIEFINGS & FRONTIERS SYMPOSIA (4 INVITED TALKS)

10. "*WTEC International Assessment of Simulation-based Engineering & Science*," Briefing to the Solid State Sciences Committee, April 19, 2007.
11. "*Computational Materials in the 21st Century*," Briefing to the NRC Study Committee on Integrative Computational Materials Engineering, March 13, 2007.
12. Invited lecturer and session chair, "*From Squish to Self-Assembly: The New Science of Colloids*," National Academy of Science Beckman Frontiers of Science Symposium, Irvine, CA, November 2004.
13. Invited lecturer, "*Trends in Computational Materials Science for Materials Design and Processing*," National Academy of Engineering Frontiers of Engineering Symposium, Irvine, CA, September 1998.

NATIONAL PROFESSIONAL SOCIETY MEETINGS (45 INVITED TALKS)

14. "*GPUs for Molecular Simulation*," AIChE Fall Meeting 2009, Nashville TN, November 2009.
15. "*Polymer-tethered nanoparticle shape amphiphiles: A new macromolecule for self-assembly*," **APS** March Meeting 2009, Symposium on Nanoparticles and Polymers, Pittsburgh, PA, March 2009.
16. "*Self assembly of patchy and anisometric particles into complex structures*," **MRS** Spring Meeting, Symposium on Nanocrystals as Precursors for Complex Structures through Self Assembly and Chemical Transformation, Spring 2009.
17. "*Design and Assembly of Anisotropic Particles: The Shapes of Things to Come (With a Little Help from Computer Simulation)*," **Charles M.A. Stine Award Plenary Lecture**, **AIChE** Annual Fall Meeting, Philadelphia, PA, November 2008.
18. "*Simulation-based Design of Nanoscale Building Blocks for Self-Assembly: The Shapes of Things to Come*," **AIChE** Fall Meeting, Salt Lake City, Fall 2007.
19. "*Cybertools for Materials Research, Education, and Collaboration*," **AIChE** Fall Meeting, Salt Lake City, Fall 2007
20. "*Forward and Inverse Computational Design of Anisotropic Nanocolloids for Self Assembly*," **MS&T07**, Detroit, Fall 2007.

21. "Cybertools for Materials Research, Education, and Collaboration", **MS&T07**, Detroit, Fall 2007.
22. "Forward and inverse design of hierarchically-ordered functional assemblies from anisotropic nanocolloids" **ACS**, Boston, Fall 2007
23. "Emergence of order in nanoparticle assemblies by exploiting building block anisotropy", **ACS**, Boston, Fall 2007.
24. "New trends in colloid science", 81st **ACS** Colloids and Surface Science Symposium, Newark, Delaware, June 2007. **Keynote lecture.**
25. "Self-assembly of polymer-tethered nanoparticle shape amphiphiles," **ACS**, Chicago, Spring 2007.
26. "Exploiting anisotropy for self-assembly of colloidal and nanoparticle shape amphiphiles," **MRS** Spring 2006.
27. "Designing nanomaterials from nanoparticle building block assembly," **MRS** Symposium CC: Photo-physical properties of monolayers on nanomaterials and surfaces, Boston, MA, Dec 1, 2005.
28. "Tutorial on mesoscale simulations for self-assembly of nanoscale systems," **AICHE**, Cincinnati, OH, Fall 2005.
29. "Exploiting anisotropy for self-assembly of shape amphiphiles," **SIAM** Society for Industrial and Applied Mathematics, New Orleans, LA, July 11-15, 2005.
30. "Self-assembly of patchy particles: insights from *in silico*," **ACS** American Chemical Society Spring Meeting, Symposium on Colloidal Assembly: Fundamentals, Novel Approaches, and Emerging Applications, San Diego, CA, March 13-18, 2005.
31. "Self-assembly of shape amphiphiles," **MRS** Materials Research Society Spring Meeting, Symposium AA: Dynamic, Self-Organizing Systems in Multifunctional Nanomaterials and Nanostructures, San Francisco, CA, April 2005.
32. "Computational Nanoscience for Bio-inspired Nanofabrication," **AICHE** Fall Annual Meeting, Austin, TX, November 2004.
33. "Mesoscale simulations of self-assembly of low-dimensional nanoparticle structures," **MRS** Materials Research Society Fall Meeting, Symposium II, Boston, MA, November 2004.
34. "Mesoscale simulations of self-assembly of tethered POSS," **MRS** Materials Research Society Fall Meeting, Symposium, Boston, MA, November 2004.
35. "Tethered nanoparticles: A new class of macromolecule for bio-inspired materials assembly," **MRS** Materials Research Society Fall Meeting, Symposium H, Boston, MA, November 2003.
36. "Langevin dynamics simulations of tethered nano building blocks," **MRS** Materials Research Society Fall Meeting, Symposium KK, Boston, MA, November 2003.
37. "Anatomy of a Supercooled Liquid," **ACS** American Chemical Society Fall Meeting, New York, NY, September 2003
38. "Glass-forming liquids and nanostructured fluids," **APS** American Physical Society March Meeting, Austin, TX, March 2003.
39. "Simulation approaches to directed assembly of nanoscale systems," **ACS** American Chemical Society Spring Meeting, New Orleans, LA, March 2003.
40. "Scale-spanning simulations of polymer-tethered silsesquioxanes," **ACS** American Chemical Society Spring Meeting, New Orleans, LA, March 2003.

41. "*Nano-assembly of Hybrid Structures: Towards Bridging Time and Length Scales*," **AIChE** American Institute of Chemical Engineers Fall Meeting, Indianapolis, IN, November 2002.
42. "*Spatially Heterogeneous Dynamics in Liquids Near the Glass Transition*," **AcerS** American Ceramics Society, Glasses and Optical Materials Division, Invited Symposium on *New Directions in Glasses*, Pittsburgh, October 13-16, 2002.
43. "*Computer Simulation of the Glass Transition: Tools of the Trade*" **APS** American Physical Society DPOLY Short Course Tutorial Lecture, Indianapolis, March 2002.
44. "*New Insights on Glass-forming Liquids: Spatially Heterogeneous Dynamics*," **AIChE** American Institute of Chemical Engineers Fall Meeting, Reno, NV, November 2001.
45. "*Spatially Heterogeneous Dynamics in Glass-forming Polymers*," **ACS** American Chemical Society Fall Meeting, Chicago, IL, August 2001.
46. "*Multiscale Simulation Of Nanostructured Filled Polymers*," **ACS** Rubber Division Mtg., April 2001.
47. "*Vision 2020 Roadmap for Computational Chemistry: Opportunities in Materials Science*," **AIChE** Fall Meeting, Los Angeles, November 2000.
48. "*Molecular Dynamics Simulations of Filled and Nano-filled Polymers*," **MRS** Materials Research Society Fall Meeting, Boston, November 2000.
49. "*Correlated Molecular Motion in Cold, Dense Liquids: Insights from Simulation*," **ACS** Fall Meeting, Washington DC, August 2000.
50. "*Accelerating the Impact of Materials Simulation on US Industry*," **MRS** Spring Meeting, Symposium O -- Materials Computation: Progress Towards Technological Relevance, San Francisco, April 2000.
51. "*Multiple Length and Time Scales in Glass-forming Polymers: New Insights from and Challenges for Simulation*," **MRS** Spring Meeting, Symposium on Multiscale Modeling of Organic Materials, San Francisco, April 2000.
52. "*Computer Simulations of Soft Matter - The Complex Nature of Molecular Motion*," Maria Goeppert-Mayer Award Lecture, **APS** Annual Meeting, Minneapolis, MN, March 2000.
53. "*Spatially Heterogeneous Dynamics in Glass-forming Liquids*," **ACA** American Crystallographic Association Annual Meeting, Buffalo, NY, May 1999.
54. "*Dynamical Heterogeneity and Cooperative Motion in Glass-forming Liquids and Polymers*," **APS** Annual Meeting, Atlanta, GA, March 1999.
55. "*Anisotropic Interface Motion in Simulations of Unstable Nematic Liquid Crystal/Polymer Blends*," **SIAM** '96, Society for Industrial and Applied Mathematics, Pittsburgh, PA, May 1996, with S.A. Langer.
56. "*Spinodal Decomposition of Chemically-Reactive Materials*," **ACS** Fall Meeting, PMSE Symposium in Honor of Z. Akcasu, Washington, D.C., August 24, 1994.
57. "*Interactive Simulations of Complex Fluids: Research and Teaching with Workstations*," **AAAS** American Association for the Advancement of Science Annual Meeting, Boston, MA, February 1993.
58. "*A New Paradigm for Science Education*," **AAS** American Astronomical Society Annual Meeting, Los Angeles, CA, November 1989.

NATIONAL MEETINGS, WORKSHOPS AND CONFERENCES (33 INVITED TALKS)

59. "*Dense packings of hard tetrahedra*." Chandler StatMech Mini-Conference, January 2010.

60. “*Designing patchy particles for self-assembly propensity*,” UIUC Materials Research Laboratory Workshop on Patchy Particles, May 19, 2009.
61. “*WTEC International Assessment of Simulation-Based Engineering and Science*,” National Academy of Engineering/Sandia/Council on Competitiveness TECS Summit on Computational Engineering, September 16, 2008.
62. “*Statistical Mechanics of Self-Assembly of Nanoscale Building Blocks*,” American Conference on Theoretical Chemistry, July 19-24, 2008.
63. “*Exploiting anisotropy for assembly*,” NIST Workshop on Assembly, March 2008.
64. “*Patchy particles, surfactants on steroids, quasicrystals: A study of assembly, in three parts*.” Chandler StatMech Mini-Conference, January 2008.
65. “*Simulation-based design and assembly of nanoparticle-based materials for EM applications*,” DoD Conference on Nanomaterials for Defense, Symposium on Nanomaterials for Optical Properties, Spring 2007.
66. “*Simulations of self-assembly of patchy particles and tethered nanoparticle shape amphiphiles*,” Recent Developments in Computer Simulation Studies in Condensed Matter Physics, Athens, GA, February 2007.
67. “*Self-assembly of nanomaterials: the shape(s) of things to come*,” GE Global Research Symposium on Computational Physics for Nanoscience, January 18, 2006.
68. “*The shape(s) of things to come*,” Princeton - Rhodia Symposium, Self Assembly - Guided and Otherwise, Princeton University, Princeton, NJ November 4-5, 2005.
69. “*Ordering processes in liquids and complex materials*,” Chandler Mini-Stat-Mech Meeting, Berkeley, CA January 8, 2005.
70. Invited participant and poster, 2nd Annual National Academies Keck Futures Initiative Conference on Designing Nanostructures at the Interface between Biomedical and Physical Systems, Irvine, CA, November 2004 and pre-conference, Washington DC, September 2004.
71. “*Tethered Nano Building Blocks: A New Route to Self-Assembly*,” Tenth International Conference on Properties and Phase Equilibria for Product and Process Design (PPEPPD), Snowbird Resort, Utah, May 16-24, 2004.
72. “*Molecular and Mesoscale Simulation Methods for Bio-Inspired Nanofabrication*,” National Science Foundation/European Commission Workshop on Computational Materials Science Methods, San Francisco, CA, April 15-16, 2004.
73. “*Molecular simulations of polymer-tethered nanoparticles*,” ACS Workshop on Molecular Modeling, New Orleans, March, 2004
74. “*Self-assembly of sheets, tubes and wires from tethered nanoparticles: insights from simulation*,” Argonne National Lab/University of Chicago Workshop Self-assembly in biology, chemistry and hard materials, Argonne, IL, June 2003.
75. “*Computational Nanoscience and the Need for Large-Scale Computing*,” DOE SCALeS Workshop, Arlington, VA, June 2003.
76. “*Conga Lines and Cages: Spatially Heterogeneous Dynamics of Glass-forming Liquids*,” Chandler Mini-Stat-Mech Meeting, Berkeley, CA Jan 10-12, 2003.
77. “*Computational Nanoscience of Soft Matter*,” DOE Roadmapping Workshop on Computational Nanoscience, San Francisco, CA May 10-11, 2002.

78. *"Computational Materials Science in the 21st Century: The Road Ahead,"* National Materials Advisory Board, National Academy of Sciences, Washington, DC, March 27, 2002.
79. *"Nanoengineering Polymer/Nanoparticle Systems: Simulations on Multiple Scales,"* Knowledge Foundation Conference on Multiscale Modeling of Materials, Boston, MA, August 12-13, 2001.
80. *Spatially Heterogeneous Dynamics in Liquids,"* STATPHYS Satellite Meeting on Challenges in Statistical Mechanics for the 21st Century, Athens, GA, July 2001.
81. *"The Cooperative Nature of Molecular Motion in Soft Materials: Finding Order in Disorder,"* National Science Foundation Workshop on Materials Theory, Arlington, VA, October 2000.
82. *"Molecular and Mesoscale Simulations of Filled and Nano-filled Polymers,"* First Annual Meeting on Foundations of Molecular Modeling, Keystone, Colorado, July 2000.
83. *"Simulations of Soft Matter - The Complex Nature of Molecular Motion,"* Fifth Annual Maria Goeppert-Mayer Symposium, San Diego, March 4, 2000.
84. *"Growing Dynamical Correlations in Supercooled Liquids,"* XI International Meeting on Physics of Noncrystalline Materials, Tuscon, AZ, October 1999.
85. *"Trends in Computational Materials Science for Polymer Interfaces and Interphases,"* Workshop on Polymer Interfaces and Interphases, NIST, Gaithersburg, MD, December 1998.
86. *"From Atoms to LCDs: Designing Materials with Computers,"* PECASE Award Symposium, National Oceanographic and Atmospheric Association, Silver Spring, MD, December 1998.
87. *"Dynamics of Glass-forming Materials from Computer Simulation,"* Conference on Computer Simulations in Physics, University of Georgia, Feb. 1998.
88. *"Cooperative Motion and Dynamical Heterogeneity in Glass-forming Materials: New Results from Simulation,"* ITP Workshop on Jamming in Frustrated Systems, UC Santa Barbara, October 1997.
89. *"Theory and Simulation of Pattern Formation in Polymer-Dispersed Liquid Crystals,"* Applied Mathematics Workshop for Materials Studies and Industrial Applications, Penn State University, College Park, PA, October 26, 1996.
90. *"Controlling Pattern Formation in Polymer Blends,"* CTCMS Workshop on Pattern Formation in Liquid Crystals, Polymers, and their Mixtures, Gaithersburg, MD June 26-28, 1995.
91. *"On Growth and Form: Teaching Concepts of Probability by Doing Science,"* PIMMS Physics Workshop, Connecticut, March 1991.

INTERNATIONAL CONFERENCES AND WORKSHOPS (34 INVITED TALKS)

92. Statphys Conference, Australia, July 19-24, 2010.
93. Liblice Conference, Czech Republic, June 13-18, 2010.
94. US/Poland Workshop on Self-Assembled Nanomaterials, Krakow, Poland, June 7-10, 2010.
95. *"Designing the next generation of self-assembled nanomaterials,"* French-American Young Engineering Scientist Symposium, Nov. 16-18, 2009. **Keynote lecture.**
96. *"Dense packing and self assembly of colloidal tetrahedra and other shapes,"* IDRMACS, Rome, Italy, Aug 30 – Sept. 5, 2009.
97. *"WTEC International Assessment of R&D in Simulation-Based Engineering & Science,"* TEKES Finnish Funding Agency for Technology and Innovation Conference on Modeling and Simulation in Finland and in USA: Future Trends, Assessment and Funding, Helsinki, Finland, January 29, 2009. **Keynote lecture.**

98. "Self- and directed assembly of nanoparticles: Opportunities and challenges for computer simulation," Conference on Computational Physics, Brazil, August 2008. **Keynote lecture.**
99. "Materials Design for Self-Assembly, and Self-Assembly for Materials Design," NSF US-Poland Workshop on Nanoscience and Nanostructured Materials, June 4-6, 2008.
100. "Excursions in self-assembly," AIMMS Workshop on Materials Modeling, St. Francis Xavier U, Nova Scotia, May 25, 2007.
101. "Exploiting anisotropy for self assembly at the nanoscale," NSF US-Poland Workshop on Nanoscience and Nanostructured Materials, June 26-28, 2006.
102. "Patchy particle self assembly", CECAM Workshop, Lyon, France, June 26-28, 2006.
103. "Mesoscale Simulation for Self-Assembled Nanomaterials Design," Accelrys Nanotechnology Consortium Meeting, London, November 15, 2005.
104. "Spatially Heterogeneous Dynamics in Strong and Fragile Liquids," Unifying Concepts in Glass Physics," Bangalore, India, June 28-30, 2004.
105. "Tutorial on Spatially Heterogeneous Dynamics," Short Course on the Glass Transition, Unifying Concepts in Glass Physics, Bangalore, India, June 25-26, 2004.
106. "Multiscale Simulations of Soft Materials," Keynote Lecture at WATOC '02, Lugano Switzerland, August 5-8, 2002.
107. "Statistical Mechanics of Glass-forming Liquids," Sixth Liblice Conference on the Statistical Mechanics of Liquids, Czech Republic, June 4-9, 2002.
108. "Fourth-Order Time-Dependent Density Correlation Functions in Liquids and Glasses," Unifying Concepts in Glass Physics II, Rome, IT, February 2002. Presented by postdoc T.B. Schroeder.
109. "Dynamical Heterogeneity In Supercooled Liquids And Polymers Via Higher Order Correlation Functions," International Workshop on Relaxation in Complex Systems, Crete, June 2001.
110. "Molecular and Mesoscale Simulations of Filled and Nano-filled Polymers," Annual Meeting of the Japanese Rheological Society, September 25, 2000.
111. "Probing Dynamical Heterogeneity Via Higher Order Correlation Functions," Workshop On Future Perspectives For Understanding The Unsolved Problem Of The Glass-Transition by Neutron Scattering And Computer Simulation, San Sebastian, Spain, June 2000.
112. "Computational Materials Science: Trends and Opportunities," Joint NSF/EC Workshop on Collaborative Opportunities in Materials Research, Stuttgart, Germany, June 21-22, 1999.
113. "Spatially Heterogeneous Dynamics in Glass-Forming Liquids from Simulation," Euroconference on Supercooled Liquids and Glasses, Pisa, Italy, September 1998.
114. "Dynamical Heterogeneity in Glass-forming Materials: New Results from Simulation," Complex Phenomena in Physics CPIP '98, Barbados, January 1998.
115. "Dynamic Heterogeneities in Computer Simulations of Glass-forming Materials," International Conference on Relaxation in Complex Systems, Vigo, Spain, July 1997.
116. "Dynamic Heterogeneities in Computer Simulations of Glass-forming Materials," International Conference on Kinetics of Phase-Separating Complex Fluids, Messina, Italy, June 1997.
117. "Modeling of Phase Separation and Ordering in Anisotropic Materials," CAMS '97, International Meeting of the Canadian Applied Math Society, Toronto, June 1997.

118. *Microstructure and Frustration in Glass-forming Materials,* International Symposium on Disordered Liquids, Juten '96, Kyoto, Japan, November 19, 1996.
119. *Frustration and Heterogeneities in Glass-forming Materials,* CECAM Workshop on Glassy Dynamics, Lyon, France, October 1996.
120. *Theory and Simulation of Pattern Formation in Liquid-Crystal/Polymer Blends,* Workshop on Pattern Formation, London, Ontario, Canada, June 15, 1996, with S.A. Langer.
121. *Pattern Formation in Polymers and Liquid-Crystal / Polymer Blends: Theory and Computer Simulation,* International Conference on Pattern Formation in Polymers, Kyoto, Japan, June 13-14, 1996.
122. *Materials Research in the Information Age,* Caribbean Academy of Sciences, Tobago, April 1996.
123. *Controlling Pattern Formation in Polymer Blends: Theory and Computer Simulation,* Future of Fractals Conference, Nagoya, Japan, July 26, 1995.
124. *Reaction-Controlled Morphology of Phase-Separating Materials,* International Conference on Scaling Concepts in Complex Fluids, Catanzaro, Italy, July 5, 1994.
125. *Spinodal Decomposition in Chemically-Reactive Binary Mixtures and Polymer Blends,* Antigonish Discussion Meeting on Statistical and Computational Physics, St. Francis Xavier University, Antigonish, Nova Scotia, Oct. 1-4, 1993.

NATIONAL AND INTERNATIONAL DEPARTMENTAL COLLOQUIA/SEMINARS (71)

126. NYU Physics Department, Winter 2010, TBA.
127. Lawrence Berkeley Lab Distinguished Lecturer, May 4, 2010.
128. UCLA Nano Institute Lecture, Winter 2010 TBA.
129. Penn State University, Departments of Chemical Engineering, Materials Science & Engineering, and Computational Science & Engineering, Winter 2010 TBA.
130. Harvard University, Dept. of Applied Physics, Feb. 5, 2010.
131. University of Rochester, Dept. of Chemical Engineering, December 2, 2009.
132. Tulane University, Dept. of Chemical Engineering, Oct. 30, 2009.
133. MIT, Department of Chemical Engineering, Oct. 16, 2009.
134. MIT, Department of Materials Science & Engineering, Oct. 15, 2009.
135. University of Colorado, Boulder, Dept. of Chemical Eng., October 6, 2009.
136. Iowa State University ADVANCE Lecturer, Dept. of Chemical Engineering, Oct, 1, 2009.
137. Johns Hopkins University, Dept. of Chemical Engineering, September 24, 2008. (To be rescheduled)
138. University of Illinois, Urbana-Champaign, Dept. of Chemical Engineering, November 4, 2008
139. University of Illinois, Urbana-Champaign, Dept. of Mat. Sci. & Eng., November 3, 2008
140. University of Michigan, Dept. of Physics, October 1, 2008.
141. University of North Carolina, Polymer and Materials Sciences, May 5, 2008.
142. Jerome B. Cohen Lectures (3), Northwestern University, November 2007.

143. University of Washington, Seattle, Department of Chemical Engineering, May 15, 2007.
144. Boston University, Dept. of Physics First Annual Graduate Alumni Symposium, May 4, 2007.
145. Wesleyan University, Department of Physics Bertman Lecture, May 3, 2007.
146. University of Pittsburgh, Dept. of Chemical Engineering Colloquium, January 26, 2007.
147. University of Pittsburgh, Nano Institute Lecture, January 25, 2007.
148. Vanderbilt Institute for Nanoscale Science and Engineering, February 2007.
149. Purdue U, Dept. of Materials Science and Engineering and Nanoscience Institute, Nov. 3, 2006
150. “*Self-assembly of nanomaterials: the shape(s) of things to come,*” James Chair Honorary Lecture, St. Francis Xavier University, Department of Physics, February 2006.
151. Department of Chemical Engineering, Wayne State University, February 10, 2006.
152. Dow Chemical, Midland, MI, February 14, 2006.
153. Nanotechnology Institute Lecture, Northwestern University, February 1, 2006.
154. Department of Physics and Astronomy, Ohio University, May 20, 2005.
155. Department of Chemical Engineering, University of Buffalo, February 16, 2005.
156. Department of Chemistry, University of Michigan, September 2004.
157. Allan P. Colburn Memorial Lecture, Dept. of Chemical Engineering, U Delaware, Spring 2004.
158. Department of Chemical Engineering, Colorado School of Mines, Winter 2004.
159. Department of Chemistry, University of Wisconsin, Madison, January 2004.
160. Department of Chemical Engineering, University of Pennsylvania, December, 2003.
161. Department of Physics, University of Chicago, October, 2003.
162. Oakland University, Sigma Xi Public Lecture & Keynote Banquet Address, April 8, 2003 (cancelled due to weather).
163. Case Western Reserve University, April 2002
164. Cal State University Northridge, Sigma Xi Public Lecture, February 26, 2003.
165. Loyola Marymount University, Sigma Xi Public Lecture II, February 25, 2003
166. Loyola Marymount University, Sigma Xi Public Lecture I, February 24, 2003
167. Georgia Tech, Dept. of Chemical Engineering, January 22, 2003 (rescheduled from Fall, 2001).
168. CCP5-sponsored lecture tour of the UK: Warwick University, Theoretical Physics Seminar, November 29, 2002.
169. CCP5-sponsored lecture tour of the UK: Cambridge University, Theoretical Chemistry Seminar, November 27, 2002.
170. CCP5-sponsored lecture tour of the UK: Oxford University, Dept. of Chemistry, November 25, 2002
171. City College of New York, Levich Institute, October 8, 2002.
172. Michigan State University, Sigma Xi Lecture, *Science at the Edge* Series, September 20, 2002.
173. Princeton University, Dept. of Chemical Engineering, December 2001

174. Boston University, Dept. of Physics, "Distinguished Alumni Seminar", August 2001.
175. North Carolina State University, Chemical Engineering and Materials Science and Engineering Joint Departmental Colloquium, February 26, 2001.
176. Penn State University, Physics Department Colloquium, October 2000.
177. University of Michigan, Materials Science and Engineering and Chemical Engineering Joint Departmental Colloquium, September 2000.
178. University of Tennessee, Chemical Engineering Departmental Colloquium, Spring 2000.
179. UC Santa Barbara, Chemical Engineering Departmental Colloquium, Spring 2000.
180. Northwestern University, Chemical Engineering Departmental Colloquium. Winter 2000.
181. University of Illinois, Urbana-Champaign Chemical Engineering Departmental Colloquium, winter 1999.
182. University of Illinois, Urbana-Champaign Materials Science and Engineering Departmental Colloquium, Winter 1999.
183. George Mason University, Physics Department Seminar, Spring 1998.
184. University of Pennsylvania, Complex Fluids Seminar, Spring 1998.
185. Catholic University, Physics Departmental Colloquium, Fall 1997.
186. Johns Hopkins University, Physics Department Seminar, Fall 1997.
187. University of Maryland, Institute for Physical Science and Technology Seminar, Fall 1997.
188. Max Planck Institute for Polymerforschung Seminar, Fall 1996.
189. University of Rome "La Sapienza", Physics Department Seminar, Fall 1995.
190. Brandeis University, Physics Department Colloquium, Fall 1994.
191. University of Maryland, Institute for Physical Science and Technology Seminar, Spring 1994.
192. Carnegie Mellon University/Pittsburgh Joint Statistical Physics Seminar, Spring 1994.
193. Sandia National Lab, Albuquerque, NM, Spring 1992.
194. Exxon Corporate Research, Annandale, NJ, Spring 1992.

Numerous other meetings and conferences attended and presentations given. Students and postdocs have given scores of oral and poster presentations at major national and international meetings, including annual AIChE, APS, ACS and MRS meetings and Gordon conferences.

PUBLICATIONS (As of 09/27/09, h-index = 37, total citations = 4459, according to Web of Science)

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